

Faculty for Education of the Executives  
University of Business Academy, Novi Sad (Serbia)

1st International Conference  
“Application of New Technologies in Management”

**ANTiM 2009**

**PROCEEDINGS**

**Volume 1**

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Editors:  
Života Radosavljević  
Predrag Dašić

08 - 11. February 2009,  
Vrnjačka Banja, Serbia



**FACULTY FOR EDUCATION OF THE EXECUTIVES  
UNIVERSITY OF BUSINESS ACADEMY  
NOVI SAD, SERBIA**

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IN MANAGEMENT**

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**TOYOTA**



# P R E F A C E

The man from its beginning to today sought to increase his performance. One of the ways to increase personal, and team work is the creation and use of various tools. Man has transferred on working tools executive functions, because that tools and technology more efficiently perform the tasks then the man himself.

So there was the phenomenon of technologies that are being applied in the corporate business. This term in the classical sense, related to matter and energy, as the first of two required components of each organization and includes part of the production process in which the technological process of turning raw materials into new products, or services. Transfer of operational and executive work of the mechanisms, the man has increased performance of translation of matter and energy in the products or services, or products with as little consuming as possible.

However, the broader aspect of the phenomenon is related to technology and the third required component of every organization, and to the information. Disclosure of information as an important component, without which there is no organization, is jeopardized classic organization and explanation of the causes of certain conditions, phenomena and processes. Therefore, the broader aspect of technology in addition to instruments with which to transform matter and energy into products and services, including technology related information, and instruments and techniques that translate data into information, information to knowledge, and knowledge to wisdom. Thus understanding of new technologies, in addition to production, and include organizational tools and techniques, such as technical design, construction and management organizations, such as creative techniques of creativity, re-engineering, benchmarking, total quality system, operational research, team work, etc.

One and other technologies to the corporate level should be seen in the mutual causal consequence connections and relations. Each of them have some common, and the special characteristics, which management must diagnose and to adequately manage them. Research has shown that the application of production technology in the corporate business is more applied, while the technology related to the management processes is marginalized, which brings into question the efficiency and production technologies. Should bear in mind that technology is not a goal, but the performance, or to the introduction of information technology is not a goal, but it is information. Pursuant to the above, technology is a mean for more successful achievement of set goals.

Bearing in mind, the International Conference entitled "Application of new technologies in management" has set ambitious aims to clarify the problem of application of new (production and management) technology in the corporate management. The legality of which is to come in the research, analysis and contributions to the conference by the principle of "creative imitation" can be used in corporate, but also at the national or global level, which gives them a universal character.

Conference programming commitment is derived from the evinced problems that occur primarily at the corporate levels of different activities and different countries, and can be seen from the following:

- Shows that the new technology is mainly applied in the developed countries, while the same did not find their application in countries in developing and countries in transition.
- It is evident that the production technology applied in the production - processing sector, while their use is marginalized in tertiary sector, which today is the biggest part of the economy of developed countries.
- New technologies have been applied mainly in the operational executive, production and service processes, while their lack of application is shown in the management.
- New technologies are the most applied to the lowest level of management, or in the manager, brigadier, manager, supervisors and managers in other names,
- As more stairs is in a hierarchical pyramid, the application of new, first of all the information and organizational technology is less, to the level of top management was largely marginalized.

Specified directly reflects on the reduction of corporate performance. In other words, companies that apply new technologies in their work are usually competitive and achieve greater corporate performance. It is concluded that the problem of insufficient use of new technologies, especially information, often is not in the financial resources, but in the resistance to newspapers and novelties. This is especially true in countries in transition, where there is no professionalized, but ideologically management which usually does not have certificates for management of business and other systems.

The aim of the conference is to emphasize the necessity of application of new technologies primarily in the management profession in the corporate-type organizations. Companies must understand that no matter what the job is dealing with, that will depend on the speed and quality of information, and that the information as a third required component of the organization may be the implementation of the new, especially information technologies. These technologies provide a quick transfer, storage and use of information.

Bearing in mind, works in the Proceedings of International Conference entitled: "Application of new technologies in management" is to clarify the problems and propose solutions to the problems and controversy is

successfully resolved. In the above must bear in mind that the introduction of new, especially information technology, strategic changes that need to be followed by organizational changes in terms of organization reengineering and establishment of new relations and connections between parts within the system, but also between the system and environment.

Shows that the corporate organization and after the introduction of the Internet still remains deeply structured, with a strong hierarchical divisions and a high level of determinism that makes life and work in the conditions of the so-called "revolutionary" changes. This led and leads to the paradox that the information technology, and after their introduction does not give satisfactory results, due to restrictions imposed classic organizational structure.

The first international conference entitled "Application of new technologies in management" is the initial step in the research in this area which creates a basis for further consideration of this issue in the developed, but primarily in the transition countries, which have specific social and economic environment. However, in the above, special emphasis will be given to Serbia as a country in transition.

Faculty for Education of the Executives in Novi Sad has formed a research team, which should round research on the topic of "Holistic system concept - the new paradigm in business organization." We believe that the results of this research contribute to the clearing issues that are considered the first international conference.

This year's First International Conference in its Proceedings publishes over 110 scientific and professional papers on the topic of the Conference.

**Vrnjačka Banja, February, 2009.**

CHAIRMAN OF SCIENTIFIC COMMITTEE

  
**Prof. Dr Života Radosavljević**

CHAIRMAN OF ORGANIZING COMMITTEE

  
**Predrag Dašić, prof.**

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## **NEW CHALLENGES AND RESPONSES OF CORPORATIVE MANAGEMENT IN INFORMATION ERA**

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***Summary:** Every work which has ambitions to become a scientific work naturally has to start from the definitions of objects and goals of the research. It has been proven that a precise definition of the subject is a condition of successful analysis and research, and the latter is a condition for mastering, i.e. an efficient and effective management. Science of management has proved that only that which is well defined may be subject to quality management and mastering. Naturally, lack of problem definition in a field of research often leads to giving the correct answer to the wrong question. This may be more dangerous than if there is not any answer. The given statements apply to this work as well, which imposes the need for defining the framework of research and analysis. The starting hypothesis is that the new potentials, and above all information technology are not adequately used and that corporate management in modern conditions has been faced with new challenges, which should be given appropriate solutions and answers. It is shown that classical organization and management represent the limiting factor for the application of new technologies, especially information technology and that it is necessary to radically and fundamentally change the corporate design, in order to achieve higher performance. The aim of this paper is to point to the new challenges in the modern corporate management and the possible answers in terms of high-level turbulence and application of information technology.*

***Key words:** New challenges, answers, information technology*

### **1. "NEW CHALLENGES": A PHRASE OR REALITY**

If you observe the history of human civilization, it can be concluded that man had challenges in every time. However, in practice, there is often abuse of the term "challenge". In the organization and management practice, it is evident that the term "new challenges" is often used when there is no fundamental reason. In other words, inflation of such titles often leads to a loss of criteria used to assess a certain situation, process, or opinion. Terms "revolutionary," "radical", etc. make sense only if used individually, and occasionally when they are used to assess a truly exceptional, unique and fundamental problem, the phenomenon or a goal which an individual or a corporation wish to achieve. Otherwise, the inflation of big words often loses sense of devaluates epochal works and discoveries. So, when everything becomes a "challenge", it is difficult to define a real challenge. Practice shows that a large number of books and research papers and projects are entitled "new challenges", and that an accurate analysis often leads to the conclusion that it is the "old wine in new packaging." In the conditions of revolutionary changes, many things, processes and phenomena get old very fast, so these terms should be used carefully. However, any work that strives to inform interested parties about new concepts, technology and philosophy, must be directed to the reviewing of existing, and (or) determining new settings and concepts. In this way, civilization, and corporate management have permanently developed and improved. On the other hand, using the prefix "challenges", corporate management is trying to show through practical action the dramatic changes that occur and what will occur in the future. In this way, through the creation of fear in the employees, management is trying to achieve the seriousness, in order to force them to certain actions, or non-actions. Creating fear is a bad implementation of "new challenges", and poor preparation for the introduction of corporate change and innovation. Increase in severity, and especially the entrance of fear into organization, often leads to the blocking of creative potential in people, which is in the sphere of change and introduction of innovation most important, which causes the opposite effect. This also applies to the introduction of technological innovations, such as information technology and the Internet, because it shows that the Internet is not an ordinary, but a fundamental and strategic change.

Introduction of information technology radically changes the organizational design, but often the organizational culture and behavior of employees, and management process. So, after the introduction of information technology, nothing can be as it used to be. Technological change leads to the inevitable changes and organizational design, and philosophy and functioning of corporate organization type. We should not forget that the Internet brought into question many of the classic organizational types without which we could not imagine life and work, such as mail, railways, traditional banking, travel agencies, traditional shops, etc. In line with the above, the Internet has brought into question the survival of many professions. Postmen, cashiers, tax collectors, operators, printers, typing machine and mathematical machine servicemen, etc. have less work, with a tendency to completely lose their professions, or be transformed into new professions, brought by the Internet revolution. Without entering the wider context of the problem, and considering that the key words of this work are "new challenges", it can be noted that this is an analysis which should partially clarify the problem that good modern organizations are faced with in the implementation of information technology in management, as well as the changes that take place in the world of business. Therefore, it is really a kind of challenge to which one should give a quick and quality response. The challenge is certainly greater, when we know that changes do not come only from one direction, that they are not linear and predictable and that each contribution to a good answer given to the revolutionary changes is a significant contribution to the theory and practice of management and organization.

New challenges in the corporate management are in an iterative relation to the changes that occur in the world of business. It is clear that it should be reacted quickly and properly to the turbulent changes. The direction of movement of companies in the future is best expressed by Andry Grove, Chairman of the Intel Corporation Board: "Companies that in the next five years do not become Internet companies, will not exist" [1]. Therefore the essence of the new challenges of corporate management and the role of information technology in this process will be explained further.

## **2. NEW CHALLENGES OF CORPORATE MANAGEMENT**

New challenges should be understood in the sense that the majority of contemporary events will receive their increased dynamics or intensity, and others will change the direction of movement, while the third will be transformed, and will really represent a new quality. Regardless of the diversity of approaches, it seems that most of the challenges in the period to come will spring from human resources, i.e. people and changes that occur at the global level. These changes will follow information technology as well. Bearing in mind a large number of challenges, extra attention will be paid to the following:

- Increase of human needs and reduction of natural resources,
- Moving from national states to the networks-of-networks,
- Acceleration of the changes and increased turbulence,
- Increased demands and dissatisfaction of interest groups.

The structure of the mentioned challenges is different and can be seen from different points of view, which would lead to different conclusions. The listed challenges are interrelated and have cause-and-effect relationship. They exhibit a direct or indirect impact on corporate management, which requires a broader explanation.

### **2.1. Increase in human needs and the reduction of natural resources**

More serious research shows that man had greater and greater demands and needs in every new time. When one would be fulfilled, there would usually be a new one, usually higher. It is in the nature of man as a conscious being. So, man is never satisfied with the existing needs, but permanently reveals new needs that he seeks to satisfy, or more goals to realize.

In order to satisfy all the larger and greater needs, man had to be permanently successful, and successful in every new time dimension. As a result, man managed to survive and win over a number of animal species. If he had not done that, man would have remained to the present day at the level of animal, which is natural, because man has no power, nor the powerful claws, strong jaws, and high speed, in order to win other animal species. He survived and will continue to exist if he increases performance of joint work, and increase organizational efficiency of tools and technologies used in performing his activities.

Naturally, the problem of permanent increase in human needs would not represent a special difficulty if it were not for completely opposite tendencies on the other side, permanently reducing natural and nonrenewable or difficult to renew resources. So, if it was not for the phenomenon of permanent increase in the needs of man on the one hand, and shrinking natural resources that can satisfy those needs on the other hand, there would be no problems in the sphere of management, or they would be marginal.

Since needs are not a static phenomenon and that in the future they will develop more quickly and resources consumed faster, competent and highly professionalized management has to respond to good management

decisions, so as to reduce the gap between the needs and their satisfaction. They must organize quality management of natural and other resources, so as to achieve good effects with smaller economic victims. It turns out that the economic dimension is final and permanent in every business and organization. Final, because every business must strive to meet growing needs with smaller costs. Permanent, because this dimension will never disappear from human activities. So, it will be more and more important in the future, and will be used to determine the level of performance.

From the above, it can be concluded that a permanent increase in the needs on one hand and a permanent reduction of resources on the other hand, impose the need for increased personal and corporate performance. In other words, performance can be increased by the application of new technologies and improvement of the competence of corporate organization type. Due to the above, individuals and organizations are forced to lifelong learning, and permanent improvement of technology.

## **2.2. Movement of national states to the network-network**

For many years there was a dominant view that national states dominated the world's economic scene. States have long been the largest employer, i.e. the subject which had decisive influence in all aspects of economic activities. Corporate and other organizations, through various taxes filled state budget, a state, through the allocation of funds, invested and directed money to a particular area.

Eventually, the state lost its primacy, or it was significantly reduced. Their role is taken by transnational and multinational companies. They have enormous financial and human resources and express a great impact on the national and global level. In other words, there was an inversion of traditional relations between states and companies. Namely, companies now became the primary subject, and states became services, which permanently check the "pulse" of companies and strive to be in their function. This understanding is still dominant. Some of the big companies earn more assets than the national income of some smaller countries in the world [2].

In the newly established conditions, new challenges arise that require redefining the concept of multinational. Today there are companies that have a large value of joint ventures in dozens of countries in the world. These companies have several dozen employees, no building, or large property, have a well-designed website, and use information technology in business and communication. They work in cooperative relations with other organizations sub-specialized, which also work as well as the previous business. These are new multinationals with a different capital structure, which basically changed the definition of size, location rendered insignificant, unlike traditional businesses, and time more real.

Therefore, the phenomenon of "global" has introduced a new concept of size. It can be seen that today there are large networks, and not large central units. The largest among them is certainly the Internet, and that is a large number of computers and individuals who are connected and networked. It is clear that the network does not have the main administration, and control. The well-known fact is shown, that the Internet can not be commanded, limiting the activities of users, etc. In order for a network to work, everyone needs to feel an important part of the whole and to feel that he is in the center. Then the network is powerful. It has contributed to the existence of a world of large decentralized business units, where the power of the networks. Society is moving from the national state and praising the traditional corporations to networks-of-networks.

Owing to the Internet, there is a new mantra of our time. The earlier phrase "think globally, act locally" has become its opposite: "think locally, act globally". In the information age the world becomes more global, with a tendency to become a global village. General tendency is to preserve national culture at a global level, and recognize diversity as great wealth of this world. In other words, the more we renounce part of our identity through language, because of economic dependence and so on, the more we stick to what makes the rest of the national or personal identity, such as culture, history, religion, customs, etc. New leaders in the Internet business are facilitators. They sort out what is tribal, and what is universal, striving not to oppose one another.

Far the most important thing that is happening today in the Internet era is the modernization of Asia. This fact is important, not only for Asians, but also for the whole world. In "The Megatrends of Asia", there are eight chapters on the eight major changes in Asia. The most important is the change of the national state to a network. Of course, the understanding that we are moving from national states has become clear to everyone, but what is important is the change of Asia as a region which is dominated by Japan to the region dominated by a Chinese network from abroad. It is a network of about 57 million Chinese who live outside the country and 54 million of them in Asia, and they are autonomous entrepreneurs and entrepreneurial families. Each family is a network of companies and these networks are inter-related. They do a lot of things together, as part of a network system, but at the same time they work as individuals and as very effective units [3]. One of the reasons of dynamic economic development in China in the modern economy lies in the above practice.

Having in mind the above, it can be claimed that the national state, no matter what the size, will not dominate on the continent, but that networks will. In other words, China will not dominate Asia, no matter what level of economic prosperity it had, but the Chinese network will. It can be concluded that it does not matter who will

join China (Hong Kong, Taiwan, or a third country), but which parts of China and outside of China will join the Chinese network.

However, a more detailed analysis shows that Asian states operate independently, autonomously, as nationalist states, but now for the first time they cooperate and re-connect. And this creates a Commonwealth of Asian countries based on economic symbiosis. What you see is a kind of Asian raising awareness, and real sense of Asia. It can be called the "asianisation" of Asia.

So, all that is happening in Asia is by far the most important thing that happens on the planet. This is a kind of Asian Renaissance. It seems that nothing can compare to it. All that I mentioned may be clearer in several years, and it is already clear to a large number of Asians. It seems that it is not clear to the West, and that the modernization of Asia will reshape the whole world and establish a new form of domination, but also bring the classic model of country in danger. In other words, the Internet will terminate the state in the classical sense, because the elimination of the location and boundaries destroys the foundation on which the classic state functions. This will happen through the reduced possibility of the state to collect taxes, fees, duties, to support its own bureaucracy, because the basis for the mentioned was the location and boundaries. In accordance with the above, the world will formally be ruled by politicians and political structures, and essentially by IT experts, who create more and more functional and effective networks-of-networks.

### **2.3. Acceleration of changes and increased turbulence**

The time of revolutionary changes in the world opened many processes. The future will belong to those organizations that are able to constantly change, at least at the speed of the change of environment. If the specified is not achieved, individuals and organizations are left behind. The basis of the change is knowledge understood in the broader sense, i.e. as theoretical and fundamental, but also as concrete knowledge, which consists of technology, tools and accessories. The most significant change that is more or less going on at different levels, is indicated as the end of the conditions called "peaceful water" and entrance into the "turbulent rapids" [4].

#### **2.3.1. Business in the conditions of "peaceful waters"**

The phenomenon of "peaceful waters" means the stable situation in which the changes were small and slow, or took place step by step. The main task of management was to envisage future scenarios, based on the past, with the introduction of corrective factors. The comparison of the situation with calm waters starts from the organization as a large ship floating in calm waters. Ship captain and crew know exactly the destination that you need to go, the way you should go and any problems that may occur on the road. Each ship route was planned on the basis of more or less well-known facts. Navigation performance is dependent on the planner, forecasts and navigator.

If it comes to atmospheric and other problems and changes, it is the result of occasional storm, a short interference, but the trip is usually peaceful and predictable. Such circumstances are predicted and defined as "extraordinary". The crew knows in advance what to do in such situations and to which is stated in the rules of travel. The ship crew is always the same and must have the same number. In the event that one member of the crew is absent, the ship can not sail. Each crew member is familiar with their tasks in terms of storm, and ship captain would oversee and make some small adjustments. So, the analogy of "peaceful waters" from ship rules can be transferred to corporate business. In such circumstances, business did not present any challenge, because everything was more or less known, could be planned and predicted, and even in emergency situations, as well as acting in such situations, the outcome was more or less known. One should bear in mind that in the modern business world, there is no situation of "peaceful waters" in which the individuals or organizations are sure of their survival, growth or development. On the contrary, it is the time of revolutionary changes, which lead to "turbulent rapids".

#### **2.3.2. Business in the conditions "turbulent rapids"**

In the metaphor "turbulent rapids" the terms of corporate business are completely contrary to the previous. A rapid is characterized by large turbulence. It flows down the river full of rapids. Any planning is pointless here. Each prediction of routes or potential problems is almost impossible, because of maelstroms and permanent turbulence. Instead of ships, rafts are more suitable for the "rapids". On the float, there are often people who have never worked together, who do not know the route, not sure of the security of the river on which they float. They only know that they must get to the aim, which is the name of profit, while all other elements of navigation are unknown and uncertain.

In the metaphor "turbulent rapids", it is evident that the raft can be run by the crew, where each member will have navigation skills. They must have the necessary skills for maneuvering through questionable and



continuous rapids. More and more navigators accept that their primary task is to manage the raft in the turbulent river and to create change, as a law of eternal survival.

Stability and predictability of the peaceful waters metaphor does not exist in the modern corporate business. Cutoffs in the balance are not occasional and temporary, and will not return in the calm water. Many managers do not get out from the rapids. They are faced with constant changes. This is the state that is called organized chaos. In the rapids, there is a rule that "everything is variable, and that only changes are permanent" and that "nothing is more durable than temporary solutions." So, modern corporations operate in real time. "For what we needed three years and three months, and three days and three hours and three minutes, now takes three seconds. Hundredths of a second are now also introduced, and the tendency is to perform more activities and be closer to zero. In the real time economy, the prices are determined from the second to second, and the situation is the same for services, where companies race to create a new service, and better satisfy the functional and other customer needs. In short, in the real-time world, we live live."

It is clear that in modern conditions not all managers are in fast and turbulent waters, or rapids. However, the fact is that their number is constantly growing. Managers in the services industries, such as telecommunications, computer software and programming have long opposed the world of "rapids". Their managers sometimes envied their colleagues in banking, utility services, oil research, publishing and air transport, where the business environment was stable and predictable in the long period of time. However, the days of stability and predictability have long been gone in these activities, or companies.

Today, every organization which treats changes as periodic disturbances in the otherwise peaceful and stable world is at great risk. There are too many rapid changes in order to make managers happy. Managers must be ready to efficiently and effectively manage the changes which their organizations are facing, or their working conditions in the area of rapids. Metaphor of a "rapid" is consistent in our consideration of an unpredictable dynamic business environment. It is also consistent in the world in which information, ideas and knowledge dominate more and more.

#### **2.4. Increased demands and dissatisfaction among all stakeholders**

The fact is that in its history man has never lived better than today. Man never worked less than today. This is reflected in the quality and length of life. However, it is shown that man in such conditions has problems with pleasure. All major interest groups, more or less become dissatisfied and exhibit all the higher requirements to the management. Appetites are increased with the owners, or shareholders, and customers, i.e. consumers.

Business analysis shows that owners permanently exhibit greater and greater demands from management, when it comes to business performance and profitability. They never satisfied with the existing profit, measured through working capital, or by other criteria. Requirements and increased appetite occur even when there is strong competition, which is every day stronger and stronger, and where the problem of marketing products and services is getting worse. Stakeholders have become merciless and guided by logic of quantification and metrics, which reflect on the uncertainty of management, and the life and work under permanent pressure.

The situation with customers is similar. The grown economic power of society which is manifested through the purchasing power, led to the sophistication of consumers' requirements, especially in terms of increased production and market competitiveness. Observing the behavior of customers in the last few decades, it can be said that the trends of increased customer demands were permanent. What is a new challenge is that the customers and consumers today want high quality services, if possible, more than expected, at a lower price.

Namely, in the past, there was an attitude that the one who wants high quality products or services, had to pay a higher price. Marketing as a science pointed out the need for market segmentation by some target groups, so that to conceptualize a product for individual target groups. Companies often understood a product or a service in one way for a foreign and another for domestic market. Therefore, services were differentiated according to the buying force of clients and other criteria. Analysis shows that even some commercial institutions were designed according to the level of service and were personalized for individual target groups [7].

Contemporary business shows that the previous practice is being abandoned, which creates a new challenge, and a new radical change. Customers and consumers today require a high level of service at a low price, and optionally a price that exceeds their expectations. So, they do not want "either-or", i.e. either lower price or lower quality, but they want low price with the highest quality. Up to now, it has never happened in practice, and anyone who has tried in the past to think that way was outside the real business world. In this sense, we can talk about total competition, about the society in which the consumer dominates, and the understanding that today consumers have become dictators. "In a society of abundance, consumer is the king - customer is dictator of all dictators. This time for real. When the consumer speaks, everyone is immediately leaping to their feet, easily and quickly. The consumer wants the product in orange color with purple dots. He wants it now. He wants it high quality. He wants it cheap. We have to satisfy him, because otherwise the company will remain without a job, and workers without pay. Therefore, the savior IBM states: "Control is implicitly transferred into the hands of tens of millions, and soon, hundreds of millions of users all over the world .... So there has been a

metamorphosis of consumers in the past 40 years: "From a squealing mouse to a lion, which is proudly roaring, from fine, stupid and modest to wicked, smart and demanding" [8].

This means that today quality matters. It is often defined by standards, even in the service sector. The quality can not be discussed, because it is considered that only the best is good enough. Each service in the sphere of banking, trade, traffic, health, tourist hotels and other organizations must be not only quality, but also high quality and usually better than the competition. What is discussed in the modern business is the price, payment methods, terms, etc.

In accordance to the above, it can be noted that the modern world is much different from the industrial world in which the classical, industrial organization and business philosophy was dominant. Commercial business in the future will change even more rapidly, and more changes will be un-programmed and unscientific, which will require new answers from corporate management and business organizations.

### **3. THE POSSIBLE ANSWERS OF MANAGEMENT TO THE NEW CHALLENGES**

Bearing in mind the previous context, corporations must proactively respond to the challenges. In that sense, there are different procedures and scenarios that may help management to answer, no matter if it is the elimination of causes of certain problems, or the changes and risks, i.e. reducing the consequences that result from the changes. It should immediately be noted that there is no universal answer to them, not there can be. However, on the basis of what has happened up to now and evaluation of future events in the business, it is possible to conceptualize a system of response, which would be more or less related to the following:

- Further increase of economy,
- The necessity of CEO transformation,
- Introduction of holistic system technology in the corporate business,
- Paying greater attention to human resources,
- Expansion of corporate social responsibility,
- Increased use of information technology, especially the Internet,

Management of the corporation may understand the challenges in different ways, and apply different answers to them. This is natural, because a corporate management organization of developed countries will have different answers in relation to the developing countries. In developing countries, it is necessary to ensure greater participation of the state through the creation of a favorable legal environment of business, as well as financial participation and incentives, especially when it comes to the introduction and use of information technology.

#### **3.1. Further increase economy of operations**

It has already been pointed out that it is in the nature of man to permanently increase his needs, as well as the way of their satisfaction. It is also noted that on the other side we have resources which help man meet his needs in each new time dimension, and which are smaller and smaller. These diametrically opposed tendencies impose the need for a permanent increase in corporate business economy, primarily through improved productivity.

The constant on the need for a permanent increase in productivity of work was, is, and there will be in the future. What changes over time, are the ways of realizing productivity. In accordance to the above, the new response of management to the new tendencies will be to increase productivity in highly specialized workers (knowledge workers) and their own productivity. In other words, the productivity of the executive and less qualified workers is achieved through mechanized work, so that this productivity cannot increase, and even where it is possible, the same does not result in strategic advantages. Therefore, the solution is to increase work productivity, of highly professional and specialized workers, who in the modern economy take characteristics of "knowledge workers".

While the realization of the productivity of knowledge workers is probable and realistic, the productivity of management is the most difficult, which is logical, because "to cross your own threshold is the longest part of the road." The biggest problem is in the classical understanding of the management profession that is still dominant in modern business. This management survives, thanks to the success of corporate organization, but the performance is realized due to some other circumstances (monopolies, increasing organic composition of capital, at the expense of the environment, etc.). Numerous analyses show that the management formulated by Fayol and Taylor is unacceptable in modern business and that there should be some radical changes. In other words, the "technologies of the Information Age can not experience rise if it is impeded by the organizational structure of industrial society" [9]. This rule will be manifested in the future, because the future problems will certainly not be dealt with successfully with today's knowledge and technologies.

Increasing productivity should not be understood as a goal, but as an instrument for achieving the appropriate goals and to respond to the challenges presented. In the last 120 years, productivity in the production and trade of goods - in manufacturing, agriculture, mining, construction and transport - in the developed countries, grew at annual levels of 3 to 4 percent. All in all, there was a forty-five times growth. In this explosive growth we can

find the strong effects which these countries and their population enjoy: a huge increase in available income and purchasing power, wide access to education and health care, and the availability of free time. The above has been available only to aristocrats and "rotting rich" before 1914, when all other layers of society worked at least three thousand hours per year. Today even the Japanese have no more than two thousand working hours per year, while an average American has 1,800 annual working hours, and a German 1650 hours of work [10].

These benefits were achieved, but not because there was a decrease in the productivity of the design and trade of goods. Opposite to the common opinion, the productivity in these areas continued to grow at almost the same pace. And this growth is the same in the United States and Japan and Germany. In fact, increasing productivity in American factories during the 1980's of some 3, 9 percent a year, was in reality bigger in the absolute numbers than the corresponding annual increase in Japan and Germany, while the annual growth of 4-5 percent in U.S. agricultural productivity is far greater than the highest growth achieved anywhere in the world.

The increased productivity of a company will show impact in its competitive ability in the next few decades. However, it will have the most important influence on the very structure of society, standard of living and ultimately the length of life of people. So, we come to the conclusion that those corporations which have greater productivity have a better standard of living, and better standard of living provides longer life. Countries that are behind on this issue have a smaller standard of living, and worse health status, and that inevitably leads to short life, which may be shown by the following comparative data:

Countries with the longest average life expectancy:

- Japan 82.5 years,
- San Marino 82.0 years,
- Switzerland, Monaco, Australia 81.5 years,
- Sweden, Canada, Iceland, Italy 81.0 years,
- Spain, Andorra, France 80.5 years.

The main reason for relatively long life in these countries lies in the technological and economic forces, which is the result of productivity and economy of operations. These countries are able to provide quality working conditions, a good standard of living and increased spending on health and social care, better availability and cheaper drugs.

Countries with the shortest average life expectancy:

- Swaziland 37.5 years,
- Sierra Leone 38.5 years,
- Zambia 40.0 years,
- Niger, Botswana, Lesotho 41.5 years,
- Afghanistan 42 years.

We arrive to the conclusion that it is reasonable to introduce technological novelties, because they increase the productivity of work. This investment is returns manifold, especially through the quality of health and length of life, as the largest value of every man. Mass increase in productivity is the only exit from this "quicksand". This increase can come only through what Taylor called "work less, but smarter". Simply, it means working much more productively, without working any harder or longer. The difference between what Taylor and the current situation is that he meant manual work and workers, while in the present time, the emphasis is given to knowledge and knowledge workers.

This suggests that adequate responses to the challenges in the future of corporate organizations can be found by increasing the productivity of work, and when knowledge workers, the management team, are at the service sector in developing countries. These structures have the largest reserves. States which realize the challenges and respond to them right way will economically dominate the twenty-first century. As long as the challenge is not adequately answered, the global, as well as the developed world will be faced with social tensions, class society, increased radicalization, and possibly even class conflicts and wars.

### **3.2. Transformation of CEO**

It is evident that the business environment of corporate organization has changed and that companies, faced with new challenges, need to respond to them. In the above, top management or CEO has a key role, which should ensure the survival, growth and development in a turbulent environment, which is permanently changing. To respond to new challenges, management must redefine its tasks, and to transform itself.

Regardless of the diversity of approaches, the fact is that CEO in the Internet age must orient primarily on defining goals and creating a favorable business environment. In order to obtain it, it is necessary to attract employees, and other components which directly or indirectly participate in the corporate effects. In this sense, CEO's willingness is important to abandon the goals that give no effects, or show as useless. This is pointed out in Jack Wash's statement: "My most important business decisions were not to enter a business, but to quit one." This indicates that the future CEO will not be able to manage companies on the basis of charisma in a linear manner, but only by team operations and putting them in the center, first of all human resource companies.

Thanks to increased competition, there is a tendency of worsening relations between management and employees on the one hand, and the relationships between interest groups that directly or indirectly have interest in the organization. In such circumstances, violations of interpersonal relations occur, as key factors for corporate success. This proves the rule that management has decisive influence on the creation of bad interpersonal relationships, primarily because of poor communication, or hard, or autocratic style of management.

In the future we can expect greater involvement of CEO on the development of good interpersonal relations. Trust and respect between management and employees will get more and more important. The greatest number companies failed because they fired high-quality staff. There was no sufficient trust between management and employees, as well as partnership between different interest groups. Accordingly, the key to the success of future CEO will be staff, respect and trust. However, respect and confidence in the corporate organization is not made overnight, but using a personal example of CEO. In this sense, it is most important that the management understand the interest of employees living creatures, who are ready to sacrifice for the interests of the company only if the sacrifice is means of achieving their interest. So, we should bear in mind that the realization of personal interests of the individual, higher salaries and corporate interests, profit, in the wider context there is no conflict. For owners and management value those who have high income, considering that they have the greatest impact on the achievement of business success. In other words, what is useful for individuals, it is useful for the company, but also for the country and the world as a whole. And vice versa.

In accordance with the above, more and more the work of CEO will be directed encouragement, and not ordering. However, the attitude towards the problems of employees must be radically changed. Namely, the classical notion that the personal problems of employees should not bother management has done. It is shown that every personal problem is at the same time a corporate problem, because it reduces business performance. Hence the need to engage management in preventing, eliminating or personal problems, so that it could have a "whole man" at the workplace. The former was linked with the introduction of a softer style of management that will eliminate ordering, introducing a style where people gain ideas for the implementation of management. In other words, the modern CEO has to work on the principle of orchestra conductor. "Here there are stars which can not be direct, there are people and specialists who work behind the scene, the audience that enjoys, but also evaluates the performance of the show and CEO. Each group is different. Although the quality of performance depends on all groups, the conductor is the one who collects the results and after whom the orchestra is named. However, for all the bad things about quality, individuals from the orchestra are usually not held responsible, but the conductor. Analogously, CEO is a leader in corporate organizations that collects the results, and bears full responsibility for the failure." Therefore, in the case of failure, one should change the coach or management, not employees.

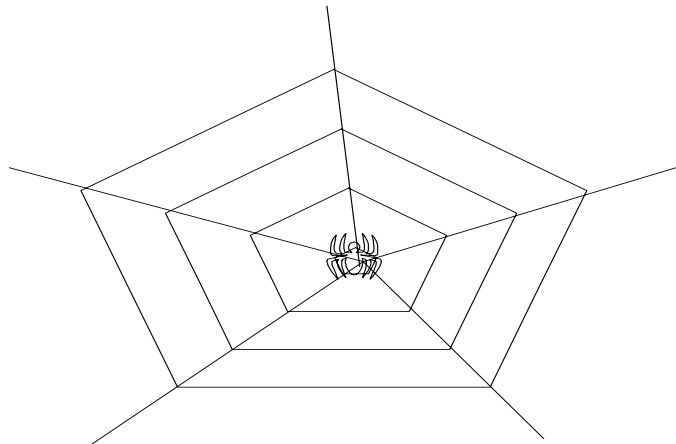
In corporate organizations, the most important CEO task is to gather highly specialized and professional staff, create team spirit and work on recruiting people for the making, and then the implementation of ideas. This is not about highlighting his personality and charisma, but to be different from the old bureaucratic structure in which the CEO managed by "stick and carrot". This is also not about a restraint of CEO to give orders, or exercise control, but that you should know when to apply ordering, and when to acquire individuals or partners in the business.

Not entering in the analysis of previous changes, which are somewhere cosmetic, and in other corporate organizations radical fundamental, you should expect that the strategic management in the coming period will be more professional. The traditional division of management processes to those which make management decisions of the highest rank - the General meeting of shareholders and board of directors, and those who need to carry them out - and they are managers, disappears.

### **3.2.1. The breakdown of so-called "Spider web"**

Introduction of information technology changed the style of management. Internet abolished traditional management, which is based on the autocratic style of management. In the era of information, the amount of live work had been reduced in companies, but a large number of jobs can be done outside the company, from a distance, etc. It has reduced the concentration of work in one place, and consequently the ability of management to command using "stick and carrot". Bearing in mind that every organization operates for an interest, that means that business organization in the modern economy cannot be successful, if you change the attitude towards the employees and not treat the employees as most valuable capital, or not eliminate bureaucratic style of management, which is embodied in the so-called "spider web".

This system of design and operation can be displayed in figure 1 [11]:



**Figure 1:**

As it can be seen in the illustration, "spider" in this case is the director and general manager, president of the company, or manager of another rank. Director is in the center of all events, actions and reactions. As a spider, he creates a web, but destroys it as well, and he has absolute authority and responsibility for all events and is trying to do everything by himself. He does not delegate authority to anyone, he is striving to do everything alone, which reflects all the characteristics of autocratic organization, which has the conditions to be transformed into the dictatorial organization.

"The spider" in this concept has absolute control and influence on all trends in the institution, not realizing that striving for absolute control leads to increasing entropy and threatens to destroy the system. All information from the environment, as well as those in the current service system goes exclusively through the "main spider". Every disagreement with the followers of "the main spider" is considered as intrusion in the web which should be resolved by elimination, or marginalization. "The main spider" is usually conceited. Practice shows that in the conditions of transition and politicized management, he is especially afraid of influence outside the web, primarily political environment.

In the "spider web", those who are near the spider are the luckiest. Information comes to them, while at the end of the web information does not exist, or if there is some, it is irrelevant, or often delayed. The concept of "web" is unacceptable in the modern, and especially in the intellectual and international organizations. Since the "spider" think that he is the most important and that he is the central point in the organization, he sooner or later becomes trapped by the web, which is difficult to redeem without damaging it, and his generic being.

The concept of "web" is dangerous for the introduction of information technology and the Internet. This is partly shown in the insufficiently democratic countries dominated by bureaucracy that is not interested in using modern technologies and the Internet, and if it is introduced, bureaucracy is trying to control it. The fact is that the introduction of the Internet annihilated the "spider web", for the Internet crosses borders and barriers, abolishes the traditional center and all the parts are equally important. It broke the national borders, customs checkpoints, the tax base, classic dining, traditional banking and trade, etc. and thus brought into question the need for numerous professions and occupations. Therefore, the management will not terminate, because while there is common work, there needs to be management, but it will certainly change radically.

#### *The necessity of introducing transformational management*

Bearing in mind the foregoing, a modern organization must abandon the concept of management through the "spider web" and take a flexible and less formalized organization, so-called transformational management. This modern management does not work out of pity, or because of their radical change, but because transformational management increases corporate business performance.

In accordance with the above, there have been changes in the direction of the impact of the management of employees, especially when it comes to the style of acquiring new people. The aim of gaining people is to encourage a huge creative potential in the creation of new ideas and value system. Research has shown that human creative potential remained at the level of minimum usage of about 3% of its opportunities, because of inadequate management style. Estimates are that the minimum shift in this field can significantly increase corporate performance [12].

Transformational management is a better way of directing the joint work than the classical ways. Their common characteristic is more or less to put emphasis on encouraging employees to master difficulties and obstacles that occur in everyday business tasks. This encouragement of employees connects leaders and followers in the cooperative system, which usually leads to an improvement of relations and finding innovative ways of solving non-systemic and non-programmed problems.

Transformational management puts emphasis on vocational and professional training of employees, where they stimulate the learning, acquiring new knowledge and skills. A transformational manager finds the reason for the above in the fact that employees are not only designers, but also the managers of changes. This management approach, especially in the intensive work and intellectual system, is comprehensive and can be used to exercise influence on the whole system, and to create the organizational environment that may be in the function of higher performance [13].

Transformational management increases the homogeneity of the organization, especially relationship between leaders and followers. It is shown that in conditions when the leader encourages employees, the employees tend to be mutually helpful. In this way, they believe that nobody in the organization cannot work all by himself and can not achieve a satisfactory impact, but that through cooperation and help they can do much more when it comes to the use of human, organizational and other resources.

Transform management individualizes the needs of subordinates, and is directed to the personal development and advancement of individuals, groups or entire organizations. So, the key thing is to exchange, where the subordinate obtain a set of values, primarily in the possibility of manifestation of their generic values, which are coupled in a positive feedback effect on the performance of budget organizations.

Bearing this in mind, it can be stated that transformational management has higher potential than classical management. We say "has", but potential does not have to be used. Namely, any form of management can be successful, depending on whether it followers accept it or reject it. Therefore, none of the types can get a seal of approval, which means that there is no universally best method and style of management, but the best situation in which the style should be applied. However, research has shown that transformational management of an organization often leads to expectations that go beyond mediocrity, or as Bass says: "Transformational leaders help followers to exceed their own capabilities and interests for the benefit of the group, or organization" [14].

### **3.3. Setting corporate social responsibility**

Business world is radically different now than two decades ago. The nature of competitive struggle has changed. Traditional criteria in the assessment of competitiveness were based on natural resources, primarily the state monopoly, cheap labor force, benefit of contractual relations and contracts etc. Companies were trying to produce a standardized product with lower cost price and sales price, while they were trying to reduce the sales price of their products, or services, often irrationally used of natural non-renewable, or difficult to renew resources. Companies often become profitable at the expense of employees, or other interest groups, postponement of their life interests, etc.

In these circumstances, there was the attitude of the Nobel Prize winner M. Friedman, which is still present in the classic corporate business. Namely, Friedman formulated that management is solely responsible for the performance of corporations, shareholders and outside of this responsibility there is no other responsibility.

It was proved that that Friedman's position on social responsibility was unacceptable. In response to the increasing power expressed by the transnational and multinational companies around the world on one side and weakening the influence of national states in solving the general social problems on the other, there is corporate social responsibility as a new business paradigm.

The essence of corporate social responsibility is in the creation of such mechanism and philosophy in which, through interaction and corporate agreement, a code of corporate responsibility of companies will be formulated, for the preservation of natural and other resources and respect for universal values that are verified at the international level, or through the United Nations. These codes are adopted on voluntary basis, which is a new quality, because it shows that legal solutions can be legally valid, but just defective, and that the power of voluntary is much stronger than forces of coercion.

Corporate social responsibility encompasses far broader range of issues, from theft embezzlement, bribes, corruption, etc. Here, we are dealing with the responsibilities of management towards natural resources, but also towards employees, suppliers, customers, local government bodies, business associations, humanitarian organizations, etc. However, corporate social responsibility is dynamic, which means that it changes your priorities and introduces new components.

In other words, corporate management by this concept, in addition to responsibility for the performance of the functioning of the company, and responsibility to stakeholders as the most important interest group, has to express responsibility for the environment in which companies operate. This responsibility applies to the provision of sustainable development, environment, and rational use of natural and other resources, in order to ensure the successful functioning of the organization, but also to practically demonstrate responsibility to future generations, as their survival would not be called into question.

Regarding the employees, management must take into account the principles which are made on the international level, through which the universal rights and values of individuals are protected. It is about respecting the dignity of individuals and prohibition of any kind of discrimination based on: national, religious, gender, age, ethical and other components. This commitment will be more important in future business.

In practical implementation of the stated preferences, you should expect a higher level of cooperation between management and trade unions, i.e. synergic trying to provide additional effects, i.e. those effects that could not be performed as the simple sum of individual actions. This requirement is natural, because it shows that management and union in the concept of corporate social responsibility are not opposed, but have the same goals, the improvement of living and working conditions, and a better standard of living of employees, who will in conjunction further motivate employees to make greater efforts and spend their intellectual potential to achieve higher corporate performance.

Accordingly, one should be aware that corporate social responsibility was developed and is insisted on especially in the developed countries, which are by all odds the most responsible for violations of balance between corporate success and sustainable natural and social development. Analyses show that European culture prefers these social values in relation to the American culture, which is more based on traditional social values. Practice shows that in terms of diversity, the European culture is cooperative and softer, that it prefers agreements and consensus, in relation to the U.S. which is based on the individualization and hierarchical dominance. Therefore, the European business and other organizations solve disputes mainly through arbitration, which are agreed by each side, while in the United States disputes are resolved at courts. It is clear that the arbitration is a more preferable decision than courts, which is logical, if we know that the courts have authority to enforce laws enacted by the political options of the government and that they may significantly deviate from the principle of justice and righteousness.

However, it is evident that U.S. corporations recognize the new values, and they become members of European associations that promote corporate social responsibility and ethics in business, believing that customers want to buy from a socially responsible company, even in conditions of increased prices. You must understand this endeavor because the assessment of U.S. companies to ignore corporate social responsibility on European market would violate their functioning and performance.

The introduction of information technology organizations in the corporate type of changes the content of corporate social responsibility, which means that it should be regarded as a dynamic system. Here the emphasis is given to the responsibility of corporate management to care for the protection of privacy of clients, disabling identity theft, Internet fraud prevention, and prevention of all forms of sophisticated crime. Accordingly, in the information era it is necessary to establish a new code of social responsibility and ethical business, in order to respond to new requirements imposed by business.

Countries in transition did not pay enough attention to the establishment of corporate social responsibility in business organizations. It turns out that this is primarily the problem of the state, which through different mechanisms brings these postulates into question, and which is the factor of irresponsibility in creating a favorable business environment, but which is able to promote and establish a system of corporate social responsibility. European Union, through the accession process, conditions the countries in transition to achieve the standard on this issue and include the respect of values, established at the level of Europe.

The system of corporate management and corporate social responsibility must become alive in Serbia. Of course, Serbia must accept the European system of values, which is natural, because it is in Europe and is a part of the European culture. Therefore it must, taking into account the trends that occur in Europe, study and implement the principles of creative imitation in their national, cultural, religious and customary practice. The mitigating circumstance is that the European Union, on the issue of corporate social responsibility and business ethics, has a progressive attitude and a more acceptable style in its implementation. On the other hand, Serbia has to make its own contribution to the European culture in the building, and promotion of its own social values, in order to be understood better by world. Benchmarking is an inevitable instrument and technology of searching the best practice on these issues in the countries that have a culture of responsibility.

In the future, you should expect a greater presence of corporate management and corporate social responsibility in all spheres of life and work. This evaluation is real, having in mind the tendency of increased turbulence, uncertainty and increased demands and expectations of all stakeholders. In such circumstances, the establishment of corporate social responsibility and ethics is one of the instruments to increase the performance on the corporate as well as at the national and global level.

### **3.3. The necessity of introducing holistic system technology in management**

Einstein stated that current problems cannot be solved by the current way of thinking, because the current problems are a result of this way of thinking. They must be solved tomorrow, by future thinking. Taking into account this statement, it can be concluded that an attempt of corporate-type organizations to solve modern business problems and overcome the old concepts will not lead to business success. This will not be possible by mere cosmetic polishing of previous concepts.

And hence the necessity of leaving the traditional organization and management that is based on the classic scientific method, whose basis is the philosophy of mechanisms and determinism, and the creation of the hierarchical system in which the domination and subordination is the key in the management of organizational

systems. Holistic system concept is one of the modern management technologies that can increase the performance of corporate organizations [15].

Holistic system approach is compatible with the application of information technology and the Internet. Namely, the Internet, as a network of all networks, is beyond feudalization or partiality and works at the global level. This is especially true for services like the Internet, where it is difficult to determine where the service begins, where it ends when and why, and service should be viewed as a whole. In this way, the traditional center disappears, because all participants in the network are equally important, which is different from the classical approach to this problem.

Namely, modern companies are characterized by decentralization as a contemporary form of organizational design. However, decentralization naturally leads to the increase of entropy, which suggests a need for the decentralized parts to re-connect and integrate. So we come to the phenomenon of integrated decentralization, which is used to achieve a significant synergic effect. In these circumstances, the Internet allows all decentralized, or dispersed parts to be mutually connected, to share information and be informed on the status of phenomena and processes that occur at the level of the whole corporation. Accordingly, the introduction of information technology reduces the entropy of partial decision-making, and increases corporate performance at the level of the whole.

However, the application of holistic system technology in corporate organizations has expressed certain difficulties. It turned out that holistics is no cure for all diseases, but that its application can eliminate many causes that lead to corporate problems. Internet has enabled and encouraged decentralization, and brought into question the direct communication of man with man, which could lead to alienation of man as a conscious human being. There are difficulties in the implementation of the Internet when large multi service organizations are concerned, because of the extensiveness and complexity of business, and inability to lead the debate on the level of the whole. One should bear in mind that cultural, religious, and custom features can improve, or complicate, the implementation of holistics, because it is evident that Japanese culture works on the principles of the group and collectivity, and the whole, while individuality is a characteristic of American civilization.

However, systemic thinking and holistics as philosophy in the business enable organizations to have a collective mind, passing through the system as a whole, according to the principles of rugby. Internet allows selected teams to work together from the beginning of an idea to its implementation, regardless of the location where team members are located, and through synergetic action they have greater performance. This allows expert knowledge to give place to the collective, or organizational knowledge and to allow non-professionals to participate in solving problems, since those who are not burdened with the problem can be carefree and provide ideas on how to solve a problem.

### **3.4. The influence of information technology on man**

The fact is that corporate problems are getting more complicated and their diagnostics is becoming increasingly difficult. Management is more and more forced to increase its efforts and working time in order to address the new challenges imposed by competition. However, in such circumstances, the capacity and efficiency of man can not be significantly increased. It is shown that the number of neurons in the human brain, or the speed of their movement cannot significantly increase. It is only possible for a man to increase the capacity of synapse and use new technologies, especially information technology. Relieving the brain from irrelevant facts and the ability to forget what is irrelevant, and abandoning old habits is possible using information technology. Information technology has reached such a level of development that what a man has registered in the course of the day can easily be transferred on the hard disk, creating in this way the space for the acceptance of new and quality facts.

So, the Internet and other information technologies have the ability to relieve man from manual, trivial and routine tasks and enable him to be successful in business tasks, but also enable the relief of everyday life and work [16]. We can see this everyday, the ordinary shopping in the supermarket when you pay by card, in banks when we take money from ATM, a hotel where the reception lost its traditional importance etc. We can often conclude that many things are done technologically without the presence of man and that man is not necessary in many aspects of the business process. In other words, with increased use of information technology, especially the Internet, the place and role of man is often ignored, with a tendency to lead man to the level that was in the last century.

In order to avoid specified, or reduce the negative impact of the Internet, developed countries in the Internet era pay special attention to human resources, often shifting them to create ideas, and rarely to do the executive and operational tasks. In other words, with the increased use of information technology, man will not lose his place in the organization, but will make it even more important. Thus, computerization imposes the need for the creation of a new type of management, and this is the Internet, or electronic management. It must have the ability to think of how to do something, and not just to do so. Practice shows that it is much easier to teach professional managers how to use computers in management activities, then the programmers to learn people management.



Bearing this in mind, the OECD, at the beginning of the last decade of the twentieth century, has accented three indisputable rules when it comes to human resources: [17]

- The more knowledge and human skills are built into any product or service, and less natural and financial resources, the more the product or service is competitive in the world market,
- Creative human resources development is the only resource without limitation, and is situated in the cortex of large brain (cortex cerebri),
- If one wants to achieve critical mass of knowledge, skills and abilities, either in the family, company, region, or state, then the human resources can not be political, or family based (as it is still case with us), but based on the labor market. This is the condition for the utilization of general principles of general competence, i.e., it is imperative for the country to capture the development of rhythm, a condition of survival for companies, for the families a chance of penetration in the world of business and prestige.

It is clear that the aforementioned implies movement towards more intensive use of knowledge and therefore it is necessary to invest into the development of human potential. OECD is right when it warns "that human knowledge has replaced machinery and factories, that knowledge is the main initiator of increasing productivity, and when necessary knowledge is missing, then production suffers, regardless of how the funds and hardware are provided.

Introduction of information technology and Internet management leads to changes in the staffing process, but also in the organizational structure, authority, power and content of business, as well as career planning of employees, especially management. Naturally, in Internet management, the mobility of labor is increased. "Today you can go to *techjourney.com* on the Web and learn how you can be paid for work in the United States. Using video conference interviews and intelligent agents in search of jobs and new employees is likely to increase turnover of employees." [18]

It is shown that no machine, not even the computer, can replace man in giving ideas. This rule is applied once, and is relevant today and will be relevant in the future. However, in order to come to the idea, it is necessary to trigger mechanisms of encouragement, and stimulation and reward innovators and those who seek new and more efficient ways of performing business activities. Therefore, the role of management in the future will come as motivating employees and creating favorable conditions for the development of innovation.

#### 4. SUMMARY

Every period of human civilization has been accompanied by appropriate challenges. This rule is relevant today and will be relevant in the future. Challenges are mainly used to point to the new paradigms and radical changes that are expected. They can be used for the intimidation or raising the seriousness of employees in the anticipation of turbulent changes. It is shown that the use of challenges for these purposes is bad and does not increase performance, especially when it comes to introducing radical and fundamental changes in corporate service organizations.

The increase of human needs on one and the reduction of natural resources on the other side is already a reality that will in the coming period be more important and which imposes the need for the introduction of new technologies in the management. It should be added that there is increased turbulence and the tendency of the so-called "calm waters" has disappeared, while "turbulent rapids are the reality, as are the increased demands of interest groups and, above all, the customers - consumers have more sophisticated requests, which further complicates the functioning of the management profession.

The listed and other challenges require appropriate responses. Now we need to say that there is no universal answer, nor there can be. Each kind of corporate management, according to the situation and the circumstances in which the challenges must occur, has to give an answer to a question. Ability to evaluate has a higher importance here than precise planning, which is followed by a high level of determinism.

But solutions and answers are to be found in increased productivity and economy of operations, especially when it comes to knowledge workers. This paper points out that the productivity of executives in the production sector is generally satisfactory, but that it is lagging behind when it comes to managerial structure, especially in the service sector. In this sense, a radical transformation is required, from the traditional management of autocratic and charismatic leaders to the leaders who will keep employees on the basis of trust and mutual respect.

Making corporate social responsibility is a new concept that has received an important role in the value system of the European Union. This concept extends the corporate responsibility of the management outside the borders and in this way brings into question the classical organizations and traditional system of accountability.

Solutions and answers to new challenges are to be found in new approaches to information and the redesign of traditional organization. Internet, as modern technology can therefore be a significant means for the companies for the provision of services in the promotion and coordination of basic functions of marketing sector, for the organization and execution of service and human resources.

Modern information technologies have enabled easier and faster access to information, which can be seen in a large number of different organizations from primary, secondary and tertiary sector, primarily health care, construction, science, culture, etc. However, in the new conditions, it is necessary to make a re-engineering of organizations into the corporate types so that they could cope with large turbulences.

Bearing this in mind, the corporate organization should not allow itself the luxury to ignore the Internet. Therefore, the introduction of the Internet should provide greater transparency, speed and simplicity, flexibility and mobility, and increase information competence, and removal of prejudices that management has towards information technologies and the Internet in the service sector.

The given facts prove that the corporate organizations have been faced with the new challenges. Responses to the challenges are primarily in raising questions, i.e. raising the economy of professional management and administrative management of employees and knowledge workers, the establishment of shallow and flexible and more dynamical corporation and use of information technology, especially in the management process and individual functional areas. Therefore, one should have in mind William Fink's statement, who says: "I do not care if I don't have the latest generation of computer. In a couple of weeks, not to speak a few months, there will be some newer, better and cheaper."

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## **KEY ELEMENTS FOR IMPROVED ORGANIZATION'S PERFORMANCE: QUALITY MANAGEMENT, STATISTICAL TECHNIQUES AND COST OF QUALITY**

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**Summary:** *In order for companies to compete effectively in the global business world, better overall performance is needed so that they can overcome their competitors. The importance of using quality management (QM) standards such as ISO 9000 series of standards and/or models/systems such as total quality management (TQM) is crucial. The long-ranging practice of quality improvement has created and developed many methods using mathematical application for achievement of success; they are associated with the so-called "team" of quality tools. Amongst these tools the statistical process control (SPC) plays a significant, if not a vital, role. Last but not least, the economic component of the organization management system's could not be ignored or underestimated. In order to improve quality, an organization must take into account the costs associated with achieving quality. Therefore, measuring and reporting the cost of quality (CoQ) should be considered an important issue for achieving quality excellence. The scope of this paper is to present a brief overview on these three 'key' and interrelated topics, namely quality management, statistical methods and cost of quality (CoQ) model towards a better understanding of integrated, holistic, management of organizations*

**Keywords:** *quality management system (QMS), statistical process control (SPC), cost of quality (CoQ), ISO 9001.*

### **1. INTRODUCTION**

For many years, European countries have tried to work cooperatively and to form a common economy and market base. These countries came together as a single voice in international commerce. However, in order for companies in these countries to compete effectively in the global business world, better business performance is needed so that they can overcome their competitors. The importance of using quality management standards such as ISO 9000 series of standards and/or models/systems such as total quality management (TQM) therefore cannot be ignored. [1].

Moreover in recent years, requirements of the market have implied to manufacturing firms the necessity of fulfilment of constantly growing, larger requirements of the customers. Pursuit to achieve a high standard quality became one of the basic strategic and operative intentions of modern enterprises. Enterprises, if they want to be among the best, must be competitive in the field of quality management. It concerns: quality of organization, the whole information system, design phases and technological aspects, as well as of personal quality while creating final products in stages, and keeping in realization, the time of order To meet quality requirements of final product, quality should be achieved at every stage of production [2].

The long-ranging practice of quality improvement has created and developed many methods using mathematical application for achievement of success; they are associated with the so-called "team" of quality tools. Amongst these tools the "7 tools" as well as statistical process control (SPC) play a significant, if not a vital, role [3].

If the production is statistically under control the process can continue and there is no need for a change in the process. However, if it is not statistically under control, the assignable causes should be discovered and removed

from the process. Statistical quality control methods apply statistical principles and techniques at every stage of design, manufacturing and service (after sales support).

The economic component of a management system could not be ignored or underestimated. In order to improve quality, an organization must take into account the costs associated with achieving quality. Therefore, measuring and reporting the cost of quality (CoQ) should be considered an important issue for achieving quality excellence. To collect quality costs an organization needs to adopt a framework to classify costs. CoQ is usually understood as the sum of conformance plus non-conformance costs, where cost of conformance is the price paid for prevention of poor quality (for example, inspection and quality appraisal) and cost of non-conformance is the cost of poor quality caused by product and service failure [4].

From a number of researches and reports [ 1, 5-10 ] it is verified that an effective quality management system (based on ISO 9001 certification scheme or on TQM model) and the application of statistical quality control methods at every stage of production linked with an efficient quality costing system are the key enablers for the survival and development of manufacturing firms. Main features of these three topics are briefly presented in the preceding sections.

## 2. QUALITY MANAGEMENT SYSTEMS

Quality Management System (QMS) can be defined as a set of policies, processes and procedures required for planning and execution (production / development / service) in the core business area of an organization. QMS integrates the various internal processes within the organization and intends to provide a process approach for project execution. QMS enables the organizations to identify measure, control and improve the various core business processes that will ultimately lead to improved business performance.

### 2.1. ISO 9000:2001 series

A QMS such as ISO 9001 provides a management framework that gives an organization the necessary controls to address risks and monitor and measure performance in its business. It can also help to enhance image and reputation of the firm and enable the “search” for improvements through internal and external communications. ISO 9000 is a series of guidelines for companies that establish their quality systems by focusing on procedures, control and documentation. ISO 9000 standards are supposed to help companies identify mistakes, streamline their operations, and be able to guarantee a consistent level of quality [11].

ISO 9000:2000 is the latest revision of the standards. It addresses a number of issues in the old standards that created widespread dissatisfaction and criticism. The new standards have a completely new structure and are based on eight principles that emphasize the core values and concepts of TQM. The new revision also incorporates several of the principles underlying the most significant quality excellence awards (MBNQA and/or EFQM); see for details [12]. The eight principles of ISO 9000:2000 series are summarized in Table 1.

**Table 1:** ISO 9000:2000 quality management principles.

<i>Principle 1: Customer focus.</i> Organizations depend on their customers and therefore, should understand current and future customer needs, should meet customer requirements and strive to exceed their expectations
<i>Principle 2: Leadership.</i> Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization’s objectives.
<i>Principle 3: Involvement of people.</i> People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization’s benefit
<i>Principle 4: Process approach.</i> A desired result is achieved more efficiently when activities and related resources are managed as a process
<i>Principle 5: System approach to management.</i> Identifying, understanding and managing interrelated processes as a system contributes to the organization’s effectiveness and efficiency in achieving its objectives.
<i>Principle 6: Continual improvement.</i> Continual improvement of the organization’s overall performance should be a permanent objective of the organization.
<i>Principle 7: Factual approach to decision making.</i> Effective decisions are based on the analysis of data and information.
<i>Principle 8: Mutually beneficial supplier relationships.</i> An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

Some of the most significant aspects of the revised standards include its emphasis on using a process related structure, using information from the system to facilitate quality improvement and including customer satisfaction in improvement activities. The new revision also attempts to address the needs and interests of organizations in specific sectors such as telecommunication and automotive. The “core” of the ISO 9000:2000 series consists of four standards:

- (1) ISO 9000: Quality Management Systems – Fundamentals and Vocabulary
- (2) ISO 9001: Quality Management Systems – Requirements
- (3) ISO 9004: Quality Management Systems – Guidance for Performance Improvement
- (4) ISO 19011: Guidelines on Quality and Environmental Auditing

Since the first publication of ISO 9000 series standards, in 1987, this quality management system gained worldwide attention and the number of certification to ISO 9000 standards increased rapidly, particularly in Western Europe. Statistics in “The ISO survey of ISO 9000 and ISO 14000 Certificates” show that up to and including 31 December 2000, the number of ISO 9000 certificates awarded in Europe increased steadily each year. For the year 2000, there were 220,127 certificates awarded in Europe, which was 29,879 more than the previous year and nearly double the number awarded in 1997 (143,000). These numbers indicate the rapid growth of certification to ISO 9000 standards in Europe, especially in the European Union (EU), and such certification in the region is likely to increase continuously; see [1]. Note that the evolution of ISO 9000 certification in Balkan countries was discussed in [12]

Worth mentioning also, that both EN ISO 9000:2000 and EN ISO 9001:2000, devote separate points to the most advanced group of quality tools which are statistical methods and the SPC; see section 3.

## **2.2. TQM models**

TQM is both a philosophy and a systematic approach. TQM is a philosophy of quality management, the earliest conceptions of which were derived from Deming’s doctrinations to the Japanese in the 1950s and 1960s. Undoubtedly, TQM was a great success in Japan. Based on TQM, the quality of Japanese products has been regarded as being superior to that of the rest of the world.

Therefore, in the early 1980s, the USA utilized TQM concepts as tools to compete with Japan. Subsequently, Europe also recognized the need for a keener focus on quality and in the 1990s, TQM concepts spread to Europe. However, making the “road” towards TQM was much more difficult than expected, since there was widespread confusion about the elements of TQM and how they could be implemented. This was because TQM was a rather abstract philosophy and did not have clear guidelines on its implementation.

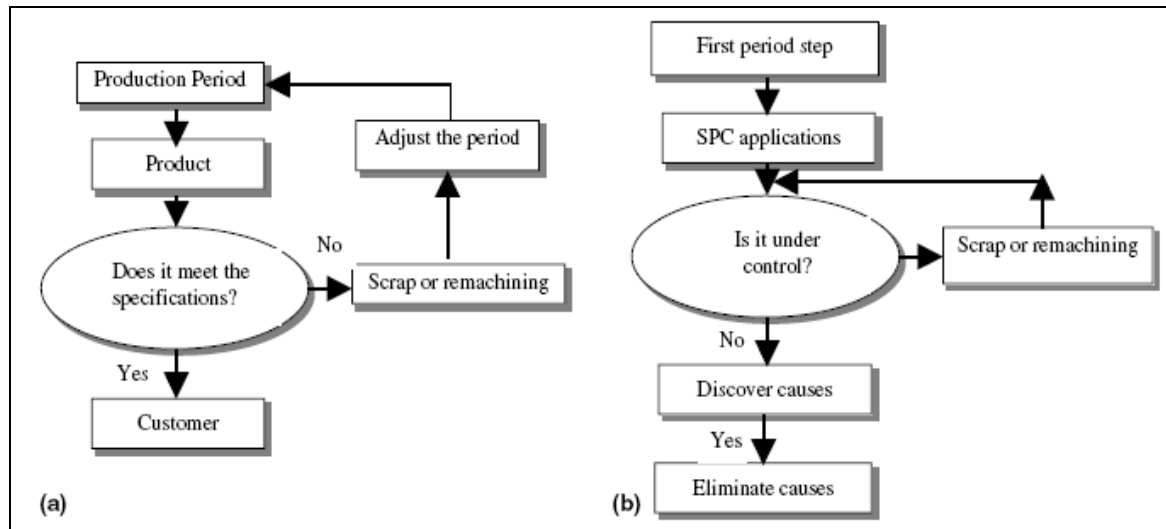
The problem became easier to solve as TQM elements were more clearly understood through the development and the worldwide acceptance of quality award models; see [1, 12]. Actually, TQM is a systems approach to management that aims to enhance value to customer by designing and continually improving organizational processes and systems. It provides a new vision for management leadership. It places customers as principal focal point and redefines quality as customer satisfaction. The emphasis is on continuous improvement of processes through employee involvement and empowerment. TQM relies on fact-based decision-making [12].

## **3. STATISTICAL METHODS AND SPC**

Statistical quality control methods apply statistical principles and techniques at all stages of the life-cycle of a product, i.e., “from cradle to grave”. Statistical Process Control (SPC) is an effective method of monitoring a process through the use of control charts. Control charts enable the use of objective criteria for distinguishing background variation from events of significance based on statistical techniques. Much of its power lies in the ability to monitor both process center and its variation about that center. By collecting data from samples at various points within the process, variations in the process that may affect the quality of the end product or service can be detected and corrected, thus reducing waste as well as the likelihood that problems will be passed on to the customer. With its emphasis on early detection and prevention of problems, SPC has a distinct advantage over quality methods, such as inspection, that apply resources to detecting and correcting problems in the end product or service [13].

Statistical quality control methods are quite different from traditional methods and they have made great contribution to improvements in companies dealing with mass production. This difference is illustrated schematically in Figs 1(a) and (b). In traditional methods, the product is manufactured first and then it is checked to determine whether it meets the quality requirements. The product that does not meet the quality requirements is rejected and sent back to the machines for remachining or correction otherwise it is thrown away as scrap. If faulty products are too much, in order to eliminate the assignable causes or the problem necessary corrections are made by examining production period (Fig. 1a). Thus, statistical quality control is the vital part of production. Instead of checking the finished product after production, it is applied at every period of production. If this

period is under control, the next period is considered; otherwise the assignable causes are discovered and corrected (Fig. 1b); see also [2, 13].



**Figure 1:** Quality control methods: (a) traditional method; (b) statistical quality control method [2].

As it is noted in section 2.2, ISO 9000 series of standards devote certain articles/paragraphs to the most advanced group of quality tools which are statistical methods. These standards underline their supporting role in relation to the proquality operations undertaken [8]. In particular, EN ISO 9001:2000 pays definite importance to their usage in control and monitoring of productive process [14]:

“... The organization shall apply suitable methods for monitoring and, where applicable, measurement of the quality management system processes. These methods shall demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction action shall be taken, as appropriate, to ensure conformity of the product. ...”

“... The organization shall monitor and measure the characteristic of the product to verify that product requirements have been met. ... This shall be carried out at appropriate stages of the product realization process in accordance with the planned arrangements. Evidence of conformity with the acceptance criteria shall be maintained. Records shall indicate the person authorizing release of product. Product release and service delivery shall not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant, where applicable, by the customer. ...”

“Control of nonconforming product: The organization shall ensure that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product shall be defined in a documented procedure. ...”

The most valuable tool of SPC is control charts. These charts give a graphical appearance of the process giving the ability to any manager with or without the knowledge of statistics to immediately understand if the process is under control or not. The wide use and popularity of control charts is a result of many reasons. First of all their proven ability to improve productivity, because the reduction of scrap and rework results in an increase of productivity, increase in production capacity measured in the number of good parts per hour and decrease in cost. Their effective prevention of defect items is also valuable. The use of control charts helps to keep the process under control. Finally, the diagnostic information of control charts is significant as it allows for changes in the process by experienced operators or engineers. [3, 13]

It should be noted that although, in general, knowledge on statistical tools is increasing, the implementation of SPC is not an easy task. Frequently, the blind use of SPC tools causes more perplexity than value; see [15].

#### 4. REVIEW OF COST OF QUALITY MODELS

Since Juran [16] discussed the cost of quality, many researchers have proposed various approaches to measuring CoQ. Reviews of CoQ literature can be found in [4, 17]. In this section, we will briefly review the approaches to measuring CoQ. In agreement with the majority of previous researchers, present work classifies CoQ models into five discrete generic groups which are: P-A-F or Crosby's model, opportunity cost models, process cost models and ABC models. These models are summarized in Table 2. Obviously, models within one group are not identical; see comments in [4, 18].

**Table 2:** Generic CoQ models and cost categories

Generic model	Cost/activity categories
P-A-F models	Prevention + appraisal + failure
Crosby's model	Prevention + appraisal + failure + opportunity
Opportunity or intangible cost models	Conformance + non-conformance Conformance + non-conformance + opportunity Tangibles + intangibles P-A-F (failure cost includes opportunity cost)
Process cost models	Conformance + non-conformance
ABC models	Value-added + non-value-added

Three models merits particular attention; P-A-F, processes cost model and the various ABC techniques; these models are briefly discussed below.

#### 4.1. PAF approach

After Feigenbaum [19] categorized quality costs into prevention-appraisal-failure (P-A-F), the PAF scheme has been almost universally accepted for quality costing. The failure costs in this scheme can be further classified into two subcategories: internal failure and external failure costs. In general, these costs are described as follows:

- *Prevention costs:* These costs are associated with the design, implementation and maintenance of the total quality management system. Prevention costs are planned and are incurred before actual operation.
- *Appraisal costs:* These costs are associated with the supplier's and customer's evaluation of purchased materials, processes, intermediates, products and services to assure conformance with the specified requirements.
- *Internal failure costs:* These costs occur when the results of work fail to reach designed quality standards and are detected before transfer to customer takes place.
- *External failure costs:* These costs occur when products or services fail to reach design quality standards but are not detected until after transfer to the customer.

The basic suppositions of the P-A-F model are that investment in prevention and appraisal activities will reduce failure costs, and that further investment in prevention activities will reduce appraisal costs [17]. The objective of a CoQ system is to find the level of quality that minimizes total CoQ; see also [4]. Feigenbaum's and Juran's P-A-F scheme has been adopted by the American Society for Quality Control in 1970 [20] and the British Standard Institute (BS 6143 pt.2) [21], and it is employed by most of the companies which use quality costing [4, 22].

#### 4.2. Process cost model

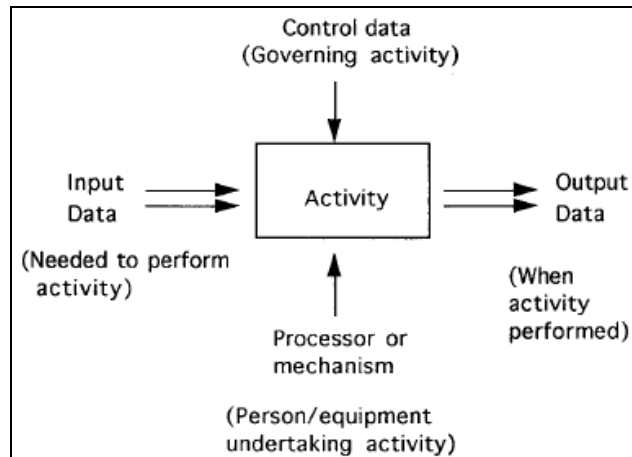
In view of a number of drawbacks of the P-A-F model [23], the process cost approach, described in the revised BS 6143: Part 1 [24], can be used as an alternative. This approach recognizes the importance of process cost measurement and ownership. The process cost is the total of the cost of conformance (CoC) and the cost of nonconformance (CoNC) for a particular process. The CoC is the actual process cost of providing products or services to the required standards, first time and every time, by a given specified process. The CoNC is the failure cost associated with a process not being operated to the required standard [22]. According to this definition, we know that the content of this categorization (CoC and CoNC) is different from that of Crosby's (PoC and PoNC) mentioned elsewhere [4].

The process cost model can be developed for any process within an organization. It will identify all the activities and parameters within the process to be monitored by flowcharting the process. Then, the flowcharted activities are allocated as CoC or CoNC, and the cost of quality at each stage (i.e. CoC + CoNC) are calculated or estimated. Finally, key areas for process improvement are identified and improved by investing in prevention activities and process redesign to reduce the CoNC and the excessive CoC respectively [22]. It is believed that this will help to extend the concept of quality costing to all functions of an enterprise and to non-manufacturing organizations, and that it also gets people to consider in more detail the processes being carried out within the organization. The structure of the process cost model is schematically presented in Figure 2.

The use of a process cost model is suggested as a preferred method for quality costing within TQM as it recognizes the importance of process cost measurement and ownership, and presents a more integrated approach to quality than a P-A-F model.

The process cost model pursues a continuous improvement policy on key processes within the organization and innovates where appropriate, which in itself reflects both the kaizen approach and Deming's (1986) plan-do-check-act (PDCA) cycle [25]. It can be applied to both service and manufacturing industries, and can be used to

improve a process stage with either a high non-conformance cost by increasing preventative costs or with excessive conformance costs. Quality problems and their causes can be determined more quickly than with the PAF model. However, a complete accurate analysis of a company's activities into interlinked processes without duplication may be more time consuming than with the PAF model; see [4].

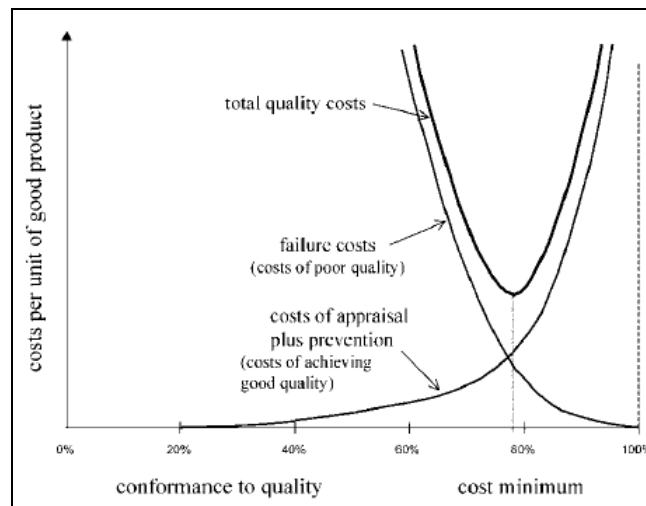


**Figure 2:** The structure of the process cost model

#### 4.3. The old and the new CoQ models

Traditionally, aspects and opinions briefly presented above are summarized in the so-called old CoQ model. This model was firstly proposed by Juran [16] and had been applied extensively till the 90's. This model which is presented in Figure 3 suggests that the costs of poor quality (internal and external failure costs) decrease with higher quality levels, while the costs of achieving good quality (appraisal and prevention costs) increase. The total cost function, representing the sum of both cost categories, has a parabolic shape. According to Juran's interpretation, the resulting cost minimum represents the economically optimal level of quality. The model's inherent quality–cost trade-off has widely shaped the perception that the optimal level of quality must be somewhere below perfection. Therefore the objective of any quality improvement program should be to find the level of quality (defect rate) that minimizes the total cost of quality.

The old COQ model might have gained its wide acceptance because it coincides with an often observed “inspection mentality” of management. However, the view of old CoQ is in conflict with current trends in industry to strive for best possible quality, as the successful quality concept of six sigma demonstrates [26].



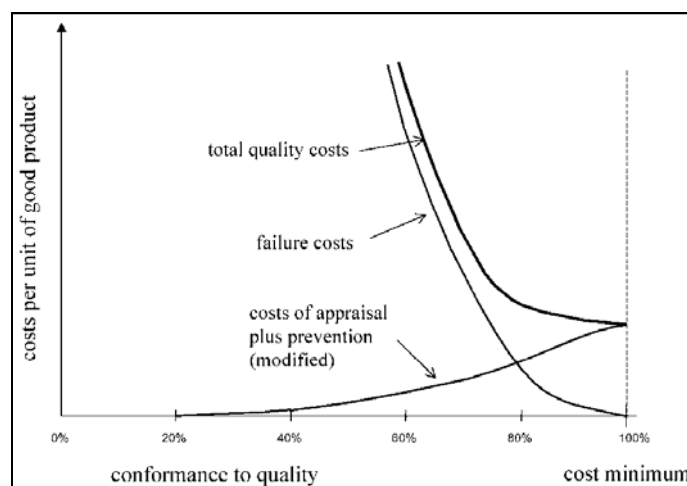
**Figure 3:** The old CoQ model

To explain the discrepancy between the old CoQ model and current findings in industry, four points must be considered. First, the model obviously presupposes a company with a poor quality level, and does not consider that companies might already have a considerable high quality level when they engage into quality improvement.



Second, the model is a spotlight on the technological proficiency of the time it was constructed. The prevention of defects has since become more feasible due to technological advances, which benefits both the finding of feasible remedies and the methods of process monitoring. Third, the model makes no reference to the duration for which a company has been engaged in quality improvement. Fourth, the unit cost consideration makes a strong point that the exponential shape of the ‘costs of achieving good quality’ curve is unrealistic. At higher quality levels, more good products are available to bear the costs of both prevention and appraisal.

The so-called new CoQ model which is more in agreement with empirical findings from industry is presented in Figure 4. It exhibits a weaker increase in appraisal and prevention costs, accounting for a higher prioritization of prevention and new technological solutions that reduce the failure rate and make process monitoring feasible. The total cost curve is negatively sloped and the cost optimum shifts to the perfect quality level. In fact, the new COQ model reflects Deming’s viewpoint that we do not need a CoQ model to determine an optimal level of quality. Deming [25] asserts that the costs of selling defective products is so high that quality costs will only be minimized when there is 100% conformance, or zero defects. Consequently, he thinks that there is no reason to measure quality costs since the only sensible strategy is to be sure that no defective products are produced at all.



**Figure 4:** The new CoQ model

In general, it is accepted that the new COQ model presents a much more rounded perspective on quality costs and seems to reflect business reality much closer than the old model, at least for “world-class” organizations. However, there is also a criticism that both models are of a limited value; see the analyses presented in [26].

#### 4.4. ABC models

Prevention-appraisal-failure (P-A-F) approach (both old and new) and process cost approach are the two main approaches to measuring CoQ. However, these approaches still cannot provide appropriate methods to include overhead costs in CoQ systems [27].

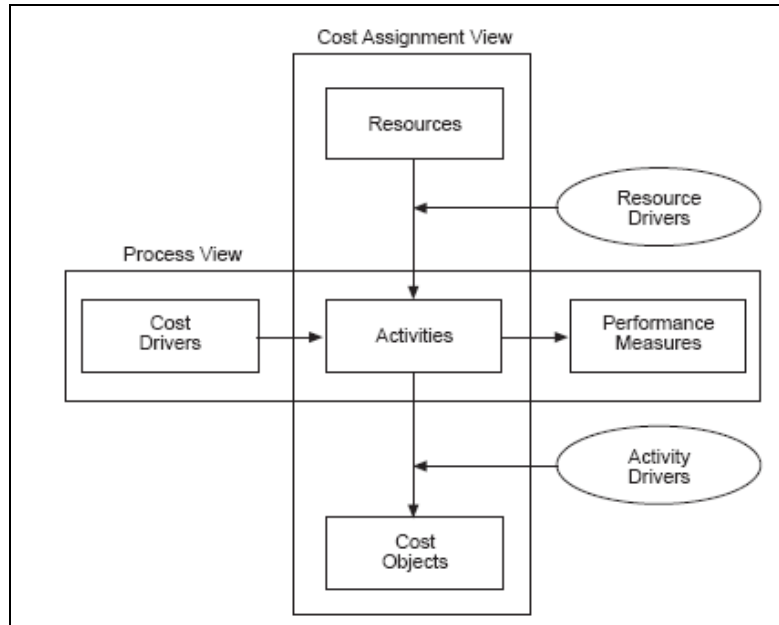
These deficiencies could be overcome under activity-based costing (ABC) developed by Cooper and Kaplan of Harvard Business School [28, 29]. ABC uses the two-stage procedure to achieve the accurate costs of various cost objects (such as departments, products, customers, and channels), tracing resource costs (including overhead costs) to activities, and then tracing the costs of activities to cost objects. ABC uses the two-stage procedure to achieve the accurate costs of various cost objects (such as departments, products, customers, and channels), tracing resource costs (including overhead costs) to activities, and then tracing the costs of activities to cost objects.

The main shortcoming of traditional cost accounting is to distribute overhead costs over products by using volume-related allocation bases such as direct labor hours, direct labor costs, direct material costs, machine hours, etc. It will not seriously distort the product cost in the conventional manufacturing environment where overheads are just a small portion of product cost. In the modern manufacturing environment, however, the overheads will grow rapidly as manufacturers increasingly promote the level of automation and computerization, and the cost distortion of traditional cost accounting will be significant. In general, traditional cost accounting overcosts high volume products and undercosts low-volume products.

In view of this, the application of ABC methodology was proposed, in order to improve the accuracy of product costs [28, 29]. Early ABC systems focus on the accurate assignment of overhead costs to products. They do not provide direct information about activities and do not consider the costs outside the plant. Thus, a two-dimensional model of ABC was proposed in [27]. This ABC model was characterized by two dimensions: cost

assignment view and process view. A detailed analysis of these two sub-systems is not presented due to space restrictions but a schematic overview is given in Figure 5, whilst in Table 3 a comparison between the main CoQ models and the ABC quality costing is presented; see also [4, 17].

It can be easily concluded that the PAF approach of CoQ is activity-oriented, the process cost approach of CoQ is process-oriented, and ABC is activity-oriented for the cost assignment view and process-oriented for the process view.



**Figure 5:** Two-dimensional model of ABC [27]

## 5. CONCLUDING REMARKS

- An effective quality management system (based on ISO 9001 certification scheme or on TQM model) and the application of statistical quality control methods at every stage of production linked with an efficient quality costing system are the key enablers for the survival and development of a production organization.
- A QMS such as ISO 9001 provides a management framework that gives an organization the necessary controls to address risks and monitor and measure performance in its business. It can also help to enhance image and reputation of the firm and enable the “search” for improvements through internal and external communications.
- ISO 9000 series of standards devote definite articles to the most advanced group of quality tools which are statistical methods. These standards underline their supporting role in relation to the proquality operations undertaken. In particular, ISO 9001:2000 pays definite importance to their usage in control and monitoring of productive process.
- Total Quality Management (TQM) focuses on process improvement and the elimination of all forms of waste. A realistic estimation of quality costs is an essential element of any TQM initiative.
- In order to improve quality an organization must take into account the costs associated with achieving quality since the objective of continuous improvement programs is not only to meet customer requirements, but also to do it at the lowest cost. However, in spite of the extensive literature on the importance and principles of quality costing, only a minority of organizations implements CoQ models and uses formal quality costing methods.
- The P-A-F model is the most recognized internationally approach for quality costing. However, the P-A-F model is mainly a cost categorization scheme and it has serious limitations. A TQM system requires a process approach and the P-A-F model generally fails in this area. A promising alternative for quality costing is the family of process cost models. These models focus on key processes within the organization and attempt to quantify the cost of conformance and the cost of non-conformance. This approach can be a driving force to process improvement in itself and is totally compatible with a TQM holistic model. All CoQ systems should contain good feedback metrics (indices) as well as a mixture of global and detailed metrics.
- Models based on the activity based costing (ABC) methodology, which are activity-oriented for the cost assignment view and process-oriented for the process view could be also applied for quality costing; however, their implementation is not widespread

**Table 3:** Comparison between main COQ approaches and ABC (adapted from [4, 27])

Aspect of comparison	CoQ		ABC
	PAF approach	Process cost model	
Orientation	Activity-oriented	Process-oriented	Activity-oriented (cost assignment view) Process-oriented (process view)
Activity/cost categories	Prevention Appraisal Internal failure External failure	Conformance Non-conformance	Value-added Non-value-added
Treatment of overhead	No consensus method to allocate overhead to CoQ elements under current CoQ measurement systems and traditional cost accounting		Assigning overhead to activities by using resource drivers in the first stage of ABC cost assignment view
Tracing costs to their sources?	No adequate method to trace quality costs to their sources		Tracing activity costs to cost objects by using activity drivers in the second stage of ABC cost assignment view
Improvement objects	CoQ-related activities	Processes activities	Processes/activities
Tools for improvement	Quality circle Brainstorming Nominal group technique Cause and effect analysis Force-field analysis		Process/activity value analysis Performance measurement Benchmarking Cost driver analysis
Information outputs	The cost elements of PAF categories Total quality cost and the costs of PAF categories and their percentages of various bases	The CoC and CoNC elements of the processes investigated Total process cost, CoC and CoNC of the processes investigated and their percentages of various bases	The costs of activities and processes The costs of value-added and non-value-added activities and their percentages of various bases Accurate costs of various cost objects (product, departments and customers) Activity-based performance measures Cost drivers of activities

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## **MODEL OF TRANSSHIPMENT PORT CHOICE: NORTH-EAST ASIA REGION**

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**Summary:** *This paper presents the formulation of a transshipment port choice model in North-East Asia. The North-East Asia ports' (Busan, Shanghai, Ningbo, Hong Kong, Kaosiung and Yokohama) have been the competitive in relation to terms of transshipment attraction. In the context of competition, Busan port authority has carried out the volume incentive policy to increase the transshipment cargo since the year of 2003, amounting to more than US\$ 10 million annually.*

**Keywords:** *North-East Asia region, Transshipment port choice model, Model validation*

### **1. INTRODUCTION**

The main scope of this paper is to present the factors for the purpose of clarifying why the transshipment increase happened in Busan port. In order to gain the research objective, several steps are designed. First step is to select quantitative model for explaining real phenomena about transshipment cargo share. Second step is to define dependent and independent variables for multiple regressions after the test of variable significance. In addition, data collection and the accuracy validation have been done by direct interview with the experienced official in shipping company in domestic and foreign country. As Northeast cargo markets have separate structures, the transshipment cargo from China, Japan or Southeast countries, individual market is to be considered independently. Third step is to validate the model using collected data, in order to reveal which variables explain the model in a good fit.

Recently, some models for port choice were been proposed. Chou (2005) discussed comparison methodology and output results of three models for port choice (the Stackelberg model, the Equilibrium model and the fuzzy multiple criteria decision-making model). The purpose of this paper has been comparing the fitness of several models for port choice ("Port choice" is an important issue in the present international trade container transportation market). Ohashi (2005) studied the choice problem of air cargo transshipment airport in Northeast Asia. Based on a unique data set of 760 air cargo transshipment routings to/from the Northeast Asian region in 2000, this paper applies an aggregate form of a multinomial Logit Model to identify the critical factors influencing air cargo transshipment route choice decisions. The analysis focuses on the trade-off between monetary cost and time cost while considering other variables relevant for choice of transshipment airport. The estimation method considers the presence of unobserved attributes, and corrects for resulting endogeneity via a two-stage least-squares estimation using instrumental variables. The empirical results show that choice of the air cargo transshipment hub is more sensitive to time cost than the monetary costs such as landing fees and line-haul price. Park et al. (2006) developed a game theoretic investment model for an oligopoly transshipment container market of competitive assets between two ports and apply it by benchmarking possible actions, game parameters and payoffs based on a competition between Busan and Shanghai. Specifically, they: 1) Identified development plans at Busan and Shanghai, and how each plans to defend its existing market share from development by the other port; 2) Developed a game theoretic model of competition between two container ports and 3) Applied the game theoretic model by determining the available development and market defence actions available to each port, and determining the payoffs to each port from each possible combination of actions. Veldman and

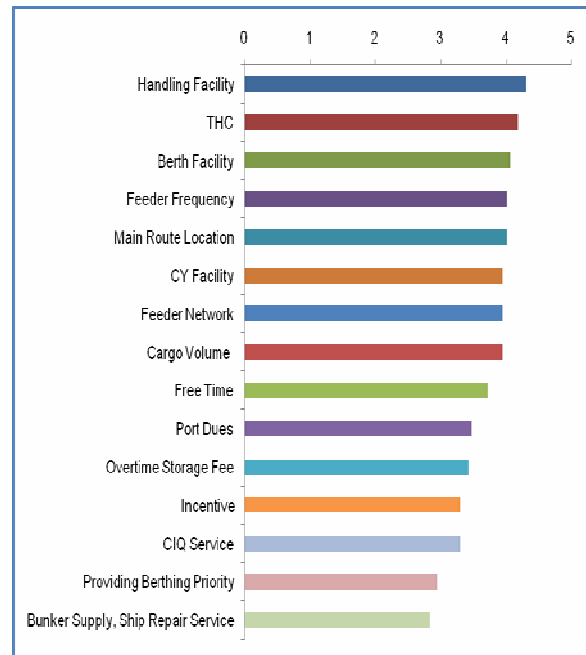
Bückmann (2003) analyzed earlier with respect to container port competition in Northwest Europe. They estimated demand functions for both the continental and the overseas hinterland of the West European major container ports and assessed the demand function for a port expansion project for the port of Rotterdam. Veldman and Vroomen (2007) studied to search significant factors for understanding the competitive position of transshipment ports and port choice elasticities in the market of the Mediterranean. Statistical tests are applied using a 10-year time series of aggregate transshipment flows between 15 transshipment ports and 9 feeder regions. Tests of Logit Models with regression analysis show that variables such as feeder costs, mainline port access costs and Mohring effects are statistically significant. Yap et al. (2006) focused to find, through evidences from container shipping services connecting the region to major markets and trade routes between 1995 and 2001, that Mainland Chinese ports are increasingly attractive as direct ports of call for mainline services. Giannopoulos et al. (2008) presented the formulation of a disaggregate port choice model which the authors have built in order to estimate the potential attraction (in terms of number of containers per year) of a new transshipment port in Crete, the southernmost island of Greece which also is the largest island of the country and very strategically situated in the middle of the South-Eastern Mediterranean basin almost in conjunction with the routes followed by the large container ships coming from the Suez canal and linking Europe with the far East. The rest of this paper is organized as follows. A transshipment port choice model is proposed in Section 2. The input data for model are data based analysis in Section 3. The results of model test for port choice are given in Section 4. In Section 5 we conclude by summarizing the results of this paper.

## 2. MODEL OF TRANSSHIPMENT PORT CHOICE

Prior to suggesting port choice model, the factors are to be selected from expert who is responsible to design the shipping liner route. The 15 items to be surveyed are collected from the published papers. The collected items are questioned for measuring importance degree with 5 score from senior managers of major container shipping liners. The way of collecting questionnaire has been performed by direct interview with a responsible person in a shipping company, or visiting or through explanation of the purpose in front of a group of responsible officers in shipping companies. The questionnaires are sent to 43 container shipping liners including both domestic and foreign companies. The response rate is 40% of planned responses. The result of the analysis of the answer of the questionnaire reveals that the most important factor is cargo handling capacity such as handling moves per ship per hour. Second important factor is terminal handling charge. The sequence of priority is listed in Table 1 and Figure 1. Among these factors, qualitative service factors such as container handling capability, berth facility capability, feeder frequency, feeder network, free time, overtime storage fee etc., can be represented as a proxy variable.

**Table 1:** Score of transshipment port deciding factors

Item	Response	Mean	SD
Handling Capability	17	4.294	0.686
THC	17	4.176	0.809
Berth Facility	17	4.059	0.748
Feeder Frequency	16	4.000	0.632
Main Route Location	16	4.000	0.632
CY Facility	17	3.941	0.748
Feeder Network	17	3.941	0.966
Cargo Volume	15	3.933	0.961
Free Time	17	3.706	0.985
Port Dues	17	3.471	1.007
Overtime Storage Fee	17	3.412	0.87
Incentive	17	3.294	0.92
CIQ Service	17	3.294	0.985
Providing Berthing Priority	16	2.938	0.929
Bunker Supply, Ship Repair Service	17	2.824	1.074



**Figure 1:** Transshipment deciding factors

The probability that a shipping company in region ( $r$ ) select transshipment port ( $p$ ) can be expressed as (Veldman and Vroomen, 2007):

$$P_p^r = \frac{e^{U_p^r}}{\sum_{p=1}^{p=P} e^{U_p^r}}, (p=1,2,...,P) \quad (1)$$

$U$  is the “utility” attached to transshipment port ( $p$ ) by shipping liner in region ( $r$ ) and  $p$  is the index of the transshipment port in a total of  $P$  ports.

Considering this model (Veldman and Vroomen, 2007) and the factors to be surveyed, the utility function is modified as:

$$U_p^r = \alpha_1 CT_{pr} + \alpha_2 CI_{pr} + \alpha_3 CD_{pr} + \alpha_4 CL_{pr} \quad (2)$$

where

$CT_{pr}$  - sum of feeder cost  $CF_{pr}$  and mother ship access cost  $CM_{pr}$ ;

$CF$  - feeder transport cost (incurred between transshipment port and feeder port ( $p,r$ ) in  $r$  region);

$CM$  - mainline access cost to transshipment port;

$CI$  - incentive between transshipment port and competition port ( $p,p^*r$ );

$CD_{pr}$  - deviation cost between transshipment hub port and feeder port;

$CL_{pr}$  - attraction of a port given its volume of local cargoes.

This is a part of Mohring-effects (Mohring, H.,1972; van Reeve, 2008) and expressed as a function of the level of port throughput. As feeder calling frequencies increase, wait times of cargo decrease, demand increases, and transit frequencies can increase again. This effect can be used as substitution variable of port service. The Greek symbols  $\alpha_1, \alpha_2, \alpha_3$ , and  $\alpha_4$  are the coefficients of the utility function.

By taking for each region ( $r$ ) the ratio of the market share of transshipment port ( $p$ ) and of an arbitrarily chosen basic port ( $p^*$ ), it follows from (1):

$$\left( \frac{P_p^r}{P_{p^*}^r} \right) = \frac{e^{U_p^r}}{e^{U_{p^*}^r}} = e^{U_p^r - U_{p^*}^r} \quad (3)$$

Combination of equations (2) and (3) and taking of logarithms leads to:

$$\ln \left( \frac{P_p^r}{P_{p^*}^r} \right) = \alpha_1 (CT_{pr} - CT_{p^*r}) + \alpha_2 (CI_{pr} - CI_{p^*r}) + \alpha_3 (CD_{pr} - CD_{p^*r}) + \alpha_4 (L_p - L_{p^*}) \quad (4)$$

### Variable Description

Accordingly with previous notations we have:

### Dependent Variable

$\ln \left( \frac{P_p^r}{P_{p^*}^r} \right)$  is the share of transshipment in the port of Busan among total transshipment in the region;

### Independent variables

Selecting independent variables is dependent on research outputs on the topic. Researchers insist that deciding transshipment port is influenced by cost, location, service factors like productivity and incentive system etc. In view of this,

- $(CT_{pr} - CT_{pr'})$  - total cost difference between the port of Busan and Shanghai port for moving containers from origin to destination in North east region. This cost is composed of operation cost, running cost and logistics cost.
- $(C_{lpr} - C_{lp'})$  - incentive difference between the port of Busan and the port of Shanghai, where *THC* of deepsea volume is discounted with some percentage or where compensation for the growth of transshipment compared with a previous year throughput is paid to shipping company.
- $(CD_{pr} - CD_{p'})$  - means the difference of deviation cost from main line route to the port of Busan or the port of Shanghai. In Northeast Asia, traditionally, main trunk route towards USA is established via Singapore, Hon Kong, Kaosiung, Busan and Yokohama to Los Angeles (Figure 1).
- $(L_{pr} - L_{p'})$  can be obtained by the ratio of local cargo of Busan and the region. This is proxy variable representing Mohring effect.

The used variable for regression analysis is named as Y, X1, X2, X3 and X4 as follows in Table 2.

**Table 2:** Variable definition of model

Variable	Definition	Unit
Dependent Variable (Y)	Ratio of Transshipment of Busan among Region Transshipment	Ratio
Independent Variable X1	Ratio of Local Container of Busan among Region Local Container	Ratio
X2	Difference of Mother Vessel Deviation Cost of Transshipment	US \$
X3	Difference of Incentive Payment of Transshipment	US \$
X4	Total Transshipment Cost of Mother and Feeder	US \$
X5	Total Transshipment Cost of Mother and Feeder including Incentive	US \$

### 3. INPUT DATA FOR MODEL TEST

In the context, there is a controversial issue concerning the scope of region. Container transports covered by the survey are illustrated in Figure 2. The criteria of research scope are trade direction such as USA or Europe bound. The other criteria are drawn from the relationship between the feeder sub region and competition transshipment port. In this study, the potential hinterland of Busan port covers four major ports in the region. In the quantitative model research, North-East Asia region and North America trade will be examined together. In the context, the mother value of dependent variable is defined transshipment containers in the Northern China ports such as the port of Dalian, the port of Tianjin, the port of Qingdao including the port of Shanghai and Busan port. The child part value of dependent variable is transshipment container in the port of Busan for 10 years.



**Figure 2:** North-East Asia region (Selected ports)



In the ship operation, different types of cost are occurred on supply chain steps. Ship cost is composed of voyage cost and running cost. Ship voyage cost is composed of fueling cost and port dues.

#### **Ship's characteristics**

All of ship's characteristics are presented in Table 3.

**Table 3:** Mother and feeder ship's specification for quantitative model

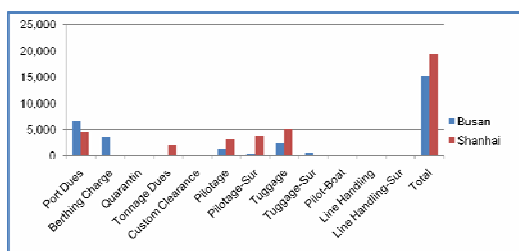
	<b>Mother ships</b>	<b>Feeder Ships</b>
Gross Tonnage	51,836GT	6,764 GT
Net Tonnage :	22,101NT	3,958 NT
DWT	61,153DWT	9,981DWT
Draft	13.6 meters	7.9 meters
TEU Capacity	4,400TEU	576TEU
Unloading containers	600TEU (120TEU, 240FEU)	225 TEU (75TEU, 75FEU)
Loading containers	600TEU (120TEU, 240FEU)	225 TEU (75TEU, 75FEU)
Total handling containers (Assumed full containers)	720BOX	300 BOX
Ratio of local and transshipment	62.6:37.	62.6:37.
Berthing time	24 hours	8 hours
Handling times	12 hours	5 hours
Bunker C Consumption	27 ton per day	19 ton per day
Bunker A Consumption	2-3 ton per day	2 ton per day

#### **Ship voyage cost**

Variable cost includes expenses related to a specific voyage. Port cost and logistics cost such as THC, lashing, shuttling, tally cost and cargo wharfage, fuel consumption cost, are included into voyage cost category.

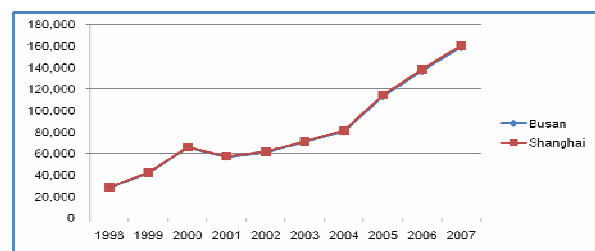
#### **Port dues**

When a mother ship calls at a port, she has to pay for various kind of charge to Port Authority, Terminal Operator, pilot, tug company and related company for providing port service. The charge comparison of the port of Busan and the port of Shanghai is presented in Figure 3.



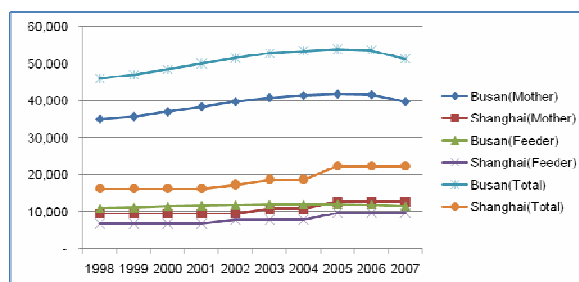
Source, Hanjin Shipping and Sinokor

**Figure 3:** Port Dues of Busan and Shanghai Port, unit US\$



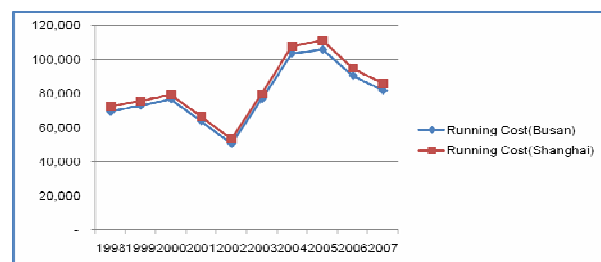
Source: RIM data

**Figure 4:** Fuel Cost for Navigation



Source: By Authors' Interview with PA and Hanjin Shipping

**Figure 5:** Port Logistics Costs of Transshipment in Busan and Shanghai



Source: Drewry, 2006 and 2007

**Figure 6:** Running Cost of Mother vessel and feeder of Busan and Shanghai

## Fuel cost for mother ship access

Fuel consumption cost for transportation is calculated by distance from origin to destination and daily bunker consumption. In calculating fuel consumption, the distance difference of two cases is considered from Hongkong to Shanghai or from Hongkong to Busan. Tracking historic data for 10 years, RIM data is used as bunker C and A price, see Figure 4.

## Port logistics cost

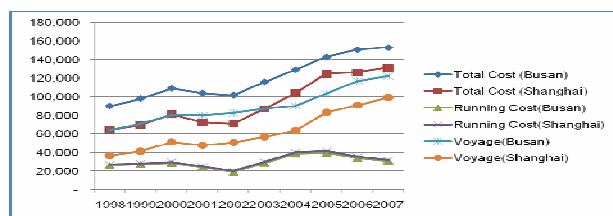
Within scope of port logistics cost, THC, lashing cost, shuttle cost, wharfage, tally cost are included in the category. Even though Port Authority used to announce THC tariff, most of terminal operators have private contract with a shipping company about real tariff according to promised volume. In case of Shanghai port, if a shipping company pays THC, the other cost such as lashing fee, storage charge in CY, shuttle fee in same terminal are included in THC. In comparison, the port of Busan charges the elements of port disbursements separately. On this reason, it is not fair to list difference of individual cost one by one. Consequently, Port Logistics Costs of Transshipment in Busan and Shanghai are given in Figure 5.

## Ship Running Cost

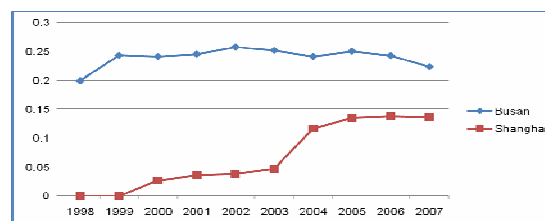
Running cost is calculated with capital and operating expenses according to period of voyage. Capital cost begin with a fixed item, i.e. the purchase price of the ship, whether acquired s a new building or on the second market. Deposit, repayment of loan principal and interest are part of capital cost. Within the overall ship cost, it is operation cost category where ship owner have the greatest influence over the choices made out. The difficulty that owners face is that suppliers of services to ships operate within their markets. The core operating cost elements are manning costs, insurance costs, repair cost, the cost of stores and supplies, and management and administration (Drewry, Ship Operating Cost, 2006). As this cost depends on market price, it is not easy task to track for 10 years. On this point, Drewry suggested ship cost and charter type relationship as proxy value of running cost. Based on the relationship, daily time charter rate is used for calculating running cost from origin to transshipment port including capital cost and operating cost. Running Cost of Mother vessel and feeder of Busan and Shanghai is illustrated in Figure 6.

## Sum of Ship Cost

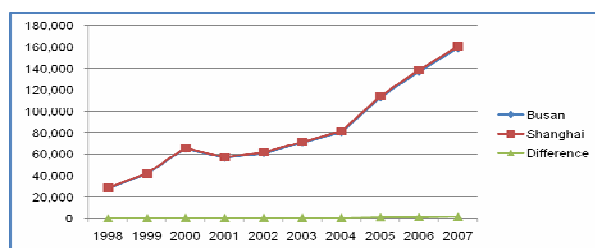
Ship costs including fueling cost, running cost and port charges from origin to destination is summed for comparison between Busan port and Shanghai port. All of them are presented in Figure 7.



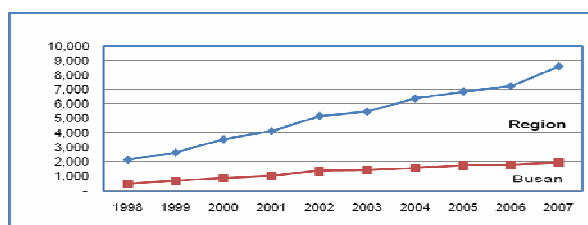
**Figure 7:** Voyage, Running and Total Cost of Busan and Shanghai



**Figure 8:** The ratio of local cargo of Busan and Shanghai on regions



**Figure 9:** Deviation cost of Busan and Shanghai



Source: Port MIS ; Con. Inter. (2007); OSC Report (2004 and 2007)

**Figure 10:** Transshipment of Busan with China and Northeast Region

## Data for measuring Mohring effect

Mohring effect is defined the ratio of captive cargo of Busan port by total captive cargo in the region. Busan's captive container is obtained from PORT-MIS, the region data is from OSC report (OSC, Container Port Strategy, 2007). The ratio of local cargo of Busan and Shanghai on regions is presented in Figure 7.

## Deviation Cost

Due to recent change of route pattern, defining deviation is complex and variable. The mainline deviation distance is measured as the extra distance needed to call at a transshipment port compared to the distance of the shortest navigation course between the Hong Kong, Shanghai, Yokohama and Hong Kong, Busan to Yokohama. The remaining distance to North America is not considered because of same distance to USA. Deviation cost of Busan and Shanghai is given in Figure 8. On the other hand, transshipment of Busan with China and North-East Region is presented in Figure 9.

## 4. THE RESULT OF MODEL TEST

A multiple regression model is tested with 10 years data. The author's selected one observation per year, therefore the number of data is 10. The reason why just 10 data is selected is caused by the attribute of dependent variable and independent variables. If we increase the number of observation by quarterly or monthly, the result of analysis shows the anomaly, i.e. the significant probability of most of independent variables is under 5 %. The regression model has been tested in 2 steps.

### 4.1 Model Test - Step 1

In the beginning, 4 variables are selected as independent variables similar as (Veldman and Vroomen, 2007). The result shows that X1 (Mohring effect) and X4 (total cost) are accepted, and X2 (deviation cost) and X3 (incentive payment) is rejected under 5% significance level. As the adjusted R square is 0.986, this means the model shows high explanation of phenomena:

R	R Square	Adjusted R Square	Standard Error	Durbin-Watson
0.996	0.992	0.986	0.0073813	2.339

As the result of ANOVA, the regression model has effective meaning because significant probability is less than 5%:

	Sum of Square	Degree of Freedom	Mean Square	F	significant probability
Model	0.034	4	0.009	156.075	.000***
Residual	0.000	5	0.000		
Sum	0.034	9			

\* p<.1, \*\* p<.05, \*\*\* p<.01

The coefficient of regression model is as follows:

Variable	Non Standard Coefficient		Standard Coefficient	t	Significance Probability VIF Variance Inflation Factor	Multicollinearity	
	B	S.E	Beta			Tolerance	VIF Variance Inflation Factor
A	0.268000	0.06		4.436	0.007		
X1	0.640000	0.079	0.912	8.09	0.000***	0.125	8.005
X2	0.000031	0.000	0.043	0.647	0.546	0.364	2.746
X3	-0.0000258	0.000	-0.205	-1.358	0.233	0.07	14.284
X4	0.0000033	0.000	0.189	2.532	0.052*	0.285	3.513

\* p<.1, \*\* p<.05, \*\*\* p<.01

In this result of analysis, the authors point out that the sign of cost factor is positive. The cost value used in the analysis is the difference of the total cost of Shanghai and Busan port. This means, if the cost of Shanghai is higher than Busan, the transshipment ratio of Busan will be increased.

#### 4.2. Model Test - Step 2

According to step 1 test, the model to be tested is modified. The independent variables to be selected are X1 (Mohring Effect) and X5 (Total cost – Incentive). The reason why the new independent total cost including incentive is introduced is that shipping company considers incentive as cost reducing factor. The result of test is that adjusted R square is 0.985:

R	R Square	Adjusted R Square	Standard Error	Durbin-Watson
0.994	0.988	0.985	0.007549	2.305

According to ANOVA, significance probability is 0 and this indicate effective model. Furthermore, the fact that correlation indicator, VIF (Variance Inflation Factor), is less than 10 means any dependence does not exist in between independent variables. The coefficient of model is  $Y = 0.207 + 0.735 X1 + 0.000 X5$ . This expression will be used for sensitivity analysis.

	Sum of Square	Degree of Freedom	Mean Square	F	significant probability
Model	0.034	2	0.017	297.320	0.000***
Residual	0.000	7	0.000		
Sum	0.034	9			

Variable	Non Standard Coefficient		Standard Coefficient	t	Significance Probability	Multicollinearity	
	B	S.E	Beta			Tolerance	VIF Variance Inflation Factor
A	0.2066923	0.023		8.894	0.000		
X1	0.7353868	0.032	1.049	22.747	0.000***	0.782	1.279
X5	0.0000027	0.000	0.132	2.859	0.024**	0.782	1.279

\* p<.1, \*\* p<.05, \*\*\* p<.01

#### 5. CONCLUSION

In North-East Asia region, keeping hub port position is the vital issue of Korea, China and Japan. Due to great leap of China economy, the share of local cargo among total region local cargo is moved from Korea and Japan to China and in a result, traditional route become changed. This consequence makes it alerted and tries to increase transshipment cargo, the port of Busan which has competition relationship with Shanghai.

Both container ship and terminal operators have rushed into an endless competition of scale expansion. Consequently, Busan and Shanghai, two of the world busiest ports, have emerged in this region, attracting the container demand around the neighboring countries by extending their feeder service network so as to cover one of the world's key manufacturing centres. As a network structure combining major container routes with 4,400 TEU-class ships and regional feeder routes with around 500 TEU-class ships has been gradually evolving, regional feeder routes have excessively concentrated in such mega-ports. As a result, detour transport through

transshipment became inevitable even on feeder shipping between the neighboring countries such as Korea and China.

We also tried to evaluate trade-off relation between transshipment risk and sea transport cost by using the estimation result. This paper tries to find out the core factors attracting transshipment cargo under competitive position. Through 2 step model test, at end, we find significant explanation variables, Mohring Effect and total cost. For model test, 10 years data of both Busan and Shanghai are collected or estimated using time series forecasting technique. Initially, we assume 4 variables would be effective independence variables. However, initial assumption hit mark and 2 variables are left out of explanation variables.

Hereafter the SD (System Dynamics) model using transshipment demand and factors relation will be developed for suggesting sensitivity analysis. The output from SD model is to make the policy controllable and visualized by adjusting input values. This paper primarily focused on historical trends of cargo movement, Fuel Cost for Navigation, Port Logistics Costs of Transshipment in Busan and Shanghai, Running Cost of Mother vessel and feeder of Busan and Shanghai, Deviation cost of Busan and Shanghai and resulting patterns of the feeder container network structure in the Busan - Shanghai region. There exists a certain volume of Korea-China container cargo transported through transshipment service linking Korea-China feeder routes.

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## **INTEGRATION OF ERA, ERIA AND EHEA**

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**Summary:** Positive changes in creation of knowledge society can be achieved only by development of own methodology and through permanent and constant processes of education, which are adjusted to our country or even local environment, having in sight our cultural, psychological and natural characteristics. Modern knowledge society is a society of knowledge specialists – experts. It must function in teams (assembly of colleagues - collaborators), on bases of equal.

**Keywords:** Knowledge Society (KS), European Research Area (ERA),

### **1. INTRODUCTION**

Changes in knowledge dynamics over time brings to faster changes and development of different concepts of scientific-technological process. In today's development of society, that is, scientific-technical progress, application of knowledge on different areas of human work has led to revolutionary changes, so four different concepts are differed in society development [8-10]:

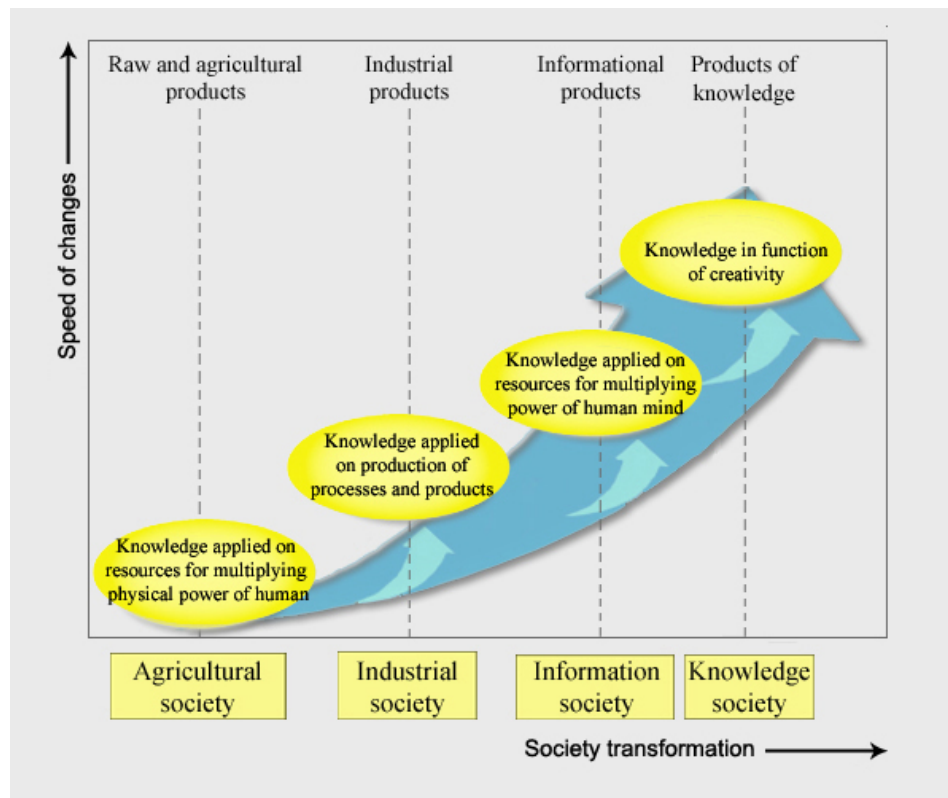
- **I concept of society development – agricultural society** (knowledge applied on means for enhancing physical strength of men),
- **II concept of society development – industry society** (knowledge applied on manufacturing processes and products),
- **III concept of society development – information society** (knowledge applied on knowledge, that is, on means for multiplication of power of human mind) and
- **IV concept of society development – knowledge society** (knowledge in function of creativity).

Phase development of society observed according to concrete data in time dimension of space, in last 300 year, now goes to a new wave Knowledge Society (KS) or Knowledge-Based Society (KBS).

Foundation of knowledge society will be development of technologies on bases of renewable sources of energy and way on which a man will better use knowledge – fortune that is most important and widely spread. In that society man will be able to return to himself, to science, culture and spiritual growth more then ever. Science-technological progress directed to Knowledge Society puts personality in center of activities and its knowledge with application of information technologies, especially Informatics-Expert Systems (IES), computer networks an Internet. Knowledge society has new approaches from various aspects: knowledge, products, quality, technology, informatics-expert systems, time, space etc.

Positive changes in creation of knowledge society can be achieved only by development of own methodology and through permanent and constant processes of education, which are adjusted to our country or even local environment, having in sight our cultural, psychological and natural characteristics.

The one that is the basic of scientific-technological progress is sight of global developing aspects of new technologies. This fact confirms Draker, 1996, where in his book: "Innovations and management" says that new technologies are not only new materials, processes or technologies but that they are new knowledge of manufacturing processes and new company management. On figure 1 is shown the transformation of society in every period of human life.



**Figure 1:** Development of society in every period of human life [10]

In order for a country to have success and to manufacture in the future in new knowledge society it must have to [10]:

- Transform production of activity based on work power in activity which is based on knowledge, and by that on **Knowledge-Based Systems (KBS)** and
- To have a base of experts and a base of knowledge.

Modern knowledge society is a society of knowledge specialists – experts. It must function in teams (assembly of colleagues - collaborators), on bases of equal. Position of every expert in team who possesses knowledge is determined by contribution that he gives to common work, rather than to any other internal overpowers or subjection. Knowledge society is not so called "bosses" and "subjected", it must be organized as a team of experts collaborators.

European Union (EU) aims to create European Information Society and knowledge society through various research-development programmes which are based on two columns:

- **European Research Area (ERA),**
- **European Research & Innovation Area (ERIA) and**
- **European Higher Education Area (EHEA).**

European commission (EC) in December 1999 for needs of European research area (ERA) has launched an initiative under the name "*e-Europe: An Information Society for All*", available on Web address: [http://ec.europa.eu/information\\_society/eeurope/](http://ec.europa.eu/information_society/eeurope/), which suggests a goal to bring a benefit to information society (IS) inside the space of all Europeans. Initiative focuses on ten priority areas, from education to transport and health to invalidity. She has launched also an initiative for upcoming period called i2010 (*European Information Society in 2010*), available on Web address: [http://ec.europa.eu/information\\_society/eeurope/2010/index\\_en.html](http://ec.europa.eu/information_society/eeurope/2010/index_en.html). While **Knowledge Society (KS)** in European community represents newest European initiative, which rules European commission (EC) available on Web address: [http://ec.europa.eu/employment\\_social/knowledge\\_society/index\\_en.html](http://ec.europa.eu/employment_social/knowledge_society/index_en.html).

## 2. EUROPEAN RESEARCH AREA (ERA)

Concept that includes research area of European Union (EU), was established in March 2000 year (within the framework of FP5), with the aim of better organization and coordination of research and development programs and projects of the EU. This is actually the vision for future research in Europe and the internal market for



science and technology. The basic motto of ERA space is to merge personnel, material and financial resources and to eliminate barriers to scientific cooperation among European countries, in order not to come to the duplication of research among research institutions and teams, and with intent to firms (especially SMEs) to help to simpler, faster and cheaper use innovation and research results for the solution of their problems. European Union (EU) through a large number of research-development and educational projects and programs tends to create of a European information society and knowledge society is based on the ERA and the EHEA space. For basis of ERA space is established a database on current research and development projects of the EU, under the name of CORDIS. Additional information is available on Web address: <http://cordis.europa.eu/era/> and [http://ec.europa.eu/research/era/index\\_en.html](http://ec.europa.eu/research/era/index_en.html), for whose basics is established database about actual research and developing projects of EU under the name **Community Research and Development Information (CORDIS)**, available on Web address: <http://cordis.europa.eu.int/>.

European Research and Technological Development (RTD) mission (<http://cordis.europa.eu/era/> and <http://ec.europa.eu/research/era/>) is being realized by:

- Framework Programme (FP), which are being realized in time period of 5 years and
- global programmes and projects (BRITE-EURAM, COST, ESPRIT, EURATOM, EUREKA, GRID, GEANT, IST, NMP, TEN etc.), which are being realized on longer time period.

For accurate and in time information about European programmes and projects, an information center is established who contains a database of actual research and development projects of EU under the name of **Community Research and Development Information Service (CORDIS)**, available on Web address: <http://cordis.europa.eu.int/>. It serves as an base for publication of express weekly briefings, that is, short instructions, about what is new in European research and innovations and about significant modern research and developing projects (RTD) of EU. Office of CORDIS information service is in Luxemburg.

Frame programmes and global projects are main instrument for creating so called **European Research Area (ERA)**, available on Web address: <http://cordis.europa.eu/era/> and [http://ec.europa.eu/research/era/index\\_en.html](http://ec.europa.eu/research/era/index_en.html). **European Research Area (ERA)** was established in March 2000 in course of realization of 5<sup>th</sup> frame programme (FP5).

Goal of **European Research Area (ERA)** was to provide working, material and financial resources and to break barriers for scientific cooperation among countries of Europe, in order not to come to duplication between research institutions and teams. Intention of ERA was to help to simplify, speed up and lower the cost of innovation usage and research results for solving their own problems. FP6 programme was a main instrument of EU for realization of ERA.

While the main goal of **European Research Area (ERA)** was to give countries of **European Union (EU)** a construction of **Knowledge Society (KS)** as a new scientific-technological progress. There for, the **European Commision (EC)**, in 1997, has defined a concept of **Information Society (IS)** construction in Europe [3], and in 2002 concept of construction of knowledge society in Europe [4]. With new programme of eEurope 2005 [13] action were established for "reengineering of skills for knowledge society in society economy".

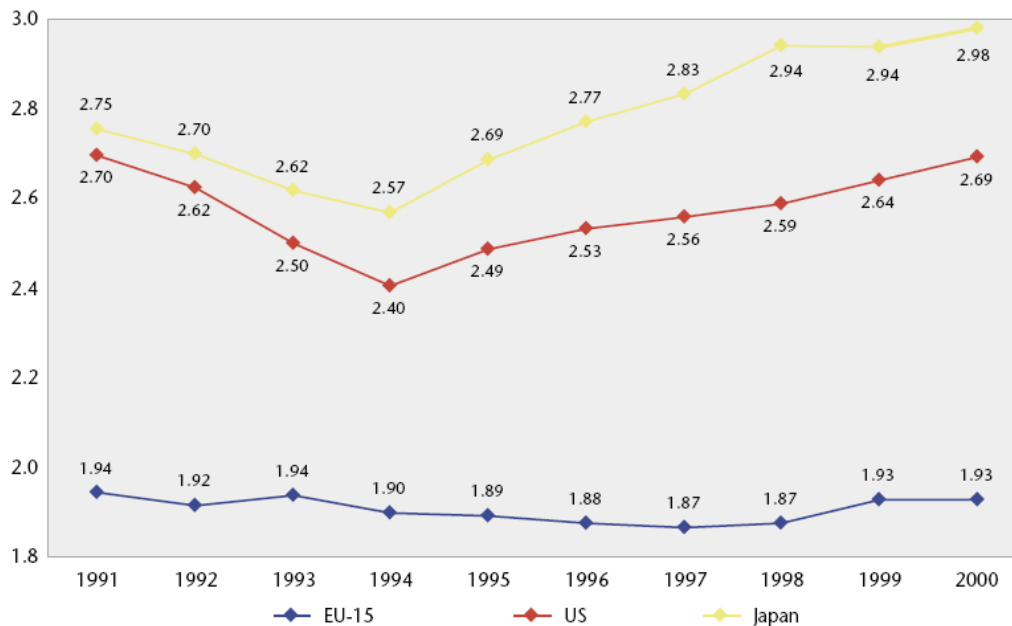
For accomplishing this cause or joining to **Knowledge Society (KS)** **European Union (EU)** has planned to increase budget for science and research. According to official data of EU at the moment this budget is over 1,9 % (figure 1) of **Gross Domestic Product (GDP)** for science and research, and it is planned to increase by the end of 2010 to 3% [20]. From figure2 it can be seen that the percentage of budget for science is a lot smaller then in USA and Japan (they have the largest percentage for science research in the world), but significantly or multiple times larger then most of the countries in development or transition. According to some authors our country has less then 0,3% of GDP in last few years, and that percentage is in trend of lowering.

## 2.1. European Framework Programme (FP)

**Framework Programme (FP)** is the main tools of EU for research funds in Europe. FP is suggested from the part of European commission (EC) and is accepted by Europe Council and European Parliament following procedure of co-decision. FP contains a time period of 5 years in which the last year of one FP is same as first year of next FP. FP started to implement in 1984 and since then six FP have been realized from which actual are FP4, FP5 and last FP6, which is currently being realized, while FP7 is in planning of realization.

Explanation of RTD terms and last four FP programmes is available on Web address: <http://europa.eu.int/comm/research/why.htm>.





**Figure 2:** Graphical preview of percentage for RTD in EU-15, USA and Japan for period from 1991-2000. year [20]

FP has begun to implement in 1984 and since then five FP have been realized, sixth is in progress and seventh is planned [7,19,21]:

- FP1 (*1st Framework Programme*), realized in period from 1984-1987;
- FP2 (*2nd Framework Programme*), realized in period from 1988-1991;
- FP3 (*3rd Framework Programme*), realized in period from 1991-1994;
- FP4 (*4th Framework Programme*), realized in period from 1994-1998 is available on Web address: <http://cordis.europa.eu/guidance/fp4.htm> or <http://ec.europa.eu/research/specpr.html>;
- FP5 (*5th Framework Programme*), realized in period from 1998-2002 and available on Web address: <http://cordis.europa.eu/fp5/> or <http://ec.europa.eu.int/research/fp5.html>;
- FP6 (*6th Framework Programme*), realized in period from 2002-2006 is available on Web address: <http://cordis.europa.eu/fp6/> or <http://ec.europa.eu.int/research/nfp.html>;
- FP7 (*7th Framework Programme*), will be realized in period from 2007-2013 is available on Web address: <http://cordis.europa.eu/fp7/> or [http://ec.europa.eu.int/research/future/index\\_en.cfm](http://ec.europa.eu.int/research/future/index_en.cfm).

Evolution and budget (in billions of Euro) by now realized FP programmes is graphically shown on figure 3 [7,21], by which, for the next period is planned a large increase of that budget.

Evolution of priorities in FP programmes for different RTD areas is graphically shown on figure 4 [21].

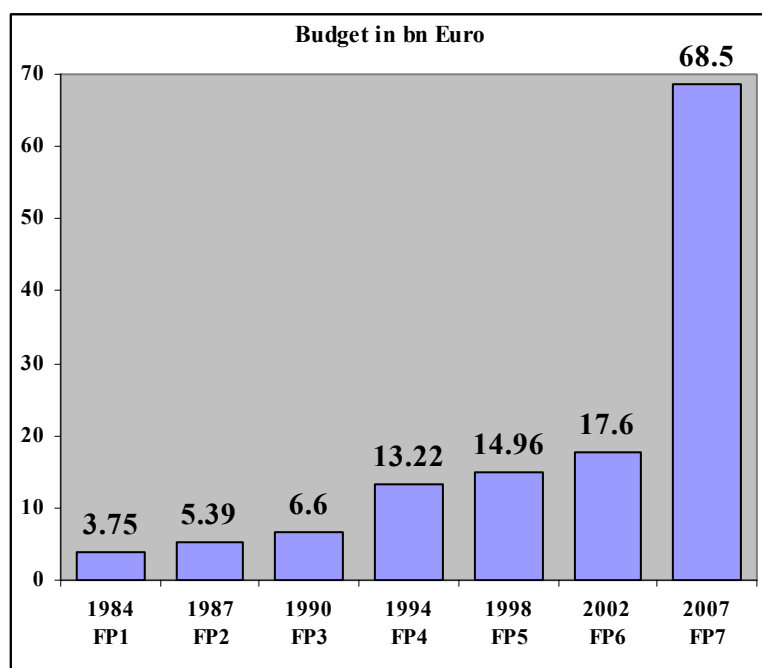
Rules and basic principles of participation in FP programmes are (available on Web address: <http://cordis.europa.eu/fp6/participationrules/>):

- There are no "national quota" that is, number of applications for one country is not limited;
- Projects must have more participants from multiple countries, that is, projects must be international;
- Calls for application are published multiple times in one FP cycle;
- Projects must satisfy criteria shown in "call for application", without considering from which country the project was proposed, institutions or researches;
- Quality and technological relevancy of project estimate independent outer experts, that is, in average 5 experts monitors every project;
- Application of project can be realized on-line over **Electronic Proposal Submission System (EPSS)**, is available on Web address: <http://www.epss-fp6.org/> i
- During application of projects there are different sorts of project instruments, which is available on Web address: <http://cordis.europa.eu/fp6/instruments.htm>.

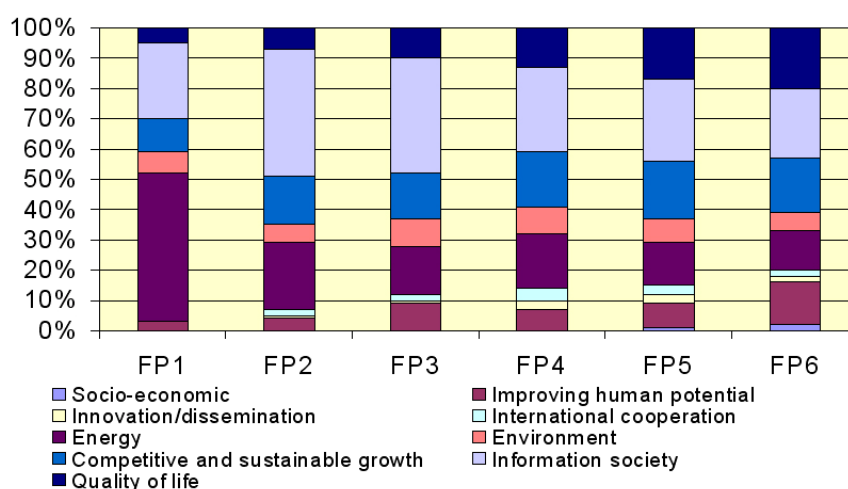
Phases of processes for participation application in FP programmes are:

- It is published "call for application" multiple times in process of one FP cycle in "Official herald EU" and on Web address CORDIS database about actual research and developing projects of EU, available on Web address: <http://cordis.europa.eu/fp6/calls.cfm>;
- An application is submitted in frame of special information package which for every "call for application" contains documents, explanations and forms necessary for application preparation;

- It is also offered special electronic project system submission (*EPSS*);
- Applications are being checked by independent outer experts (in average 5 experts evaluate every project) and
- For approved applications a contract is signed between European Commission (EC) and participants in project.



**Figure 3:** Graphical preview of evolution and budget by now realized FP programmes



**Figures 4:** Graphical preview of priority in FP programmes for different RTD areas

European Union (EU) has in frame of FP6 attached amount of (about 2% from total budget) for so called "associated measures" by which is organized training of professionals into so called National Contact Points (NCP), available on Web address: <http://cordis.europa.eu/fp6/ncp.htm>. With those means seminars are organized for training NCP's who will further help those who want to apply for FP6 programme in order to make a quality applications.

In frame of FP programme any legal or juridical subject can take part, who is directed towards national, international or EU laws, and those are mostly: research group on university or university institute, company that goes to innovations, Small and Medium-Sized Enterprise (SME), public administration, (which is practicing research politics or management of public research) and others (scholarships and scientific development). It can be persons from members of EU, country candidates, associated countries and countries of west Balkan, Russia, Ukraine, Mediterranean countries and countries in development. Participants have to be from multiple countries, not less then 3 members of EU or candidate countries.

## 2.2. FP7 programme

Seventh in turn EU programme which is defined for future period from 2007 to 2013, for defining and financing of programme and projects for solving actual problems. EC has published propositions for participation in FP7 in April 2005.

Proposed FP7 programme will be organized in four programmes of correspondence for four basic research themes and components of European research (available on web address: <http://cordis.europa.eu/fp7/themes.htm>), those are:

- *Cooperation* (available on web address: <http://cordis.europa.eu/fp7/cooperation.htm>), which imply realization of cooperate research projects which will be organized in compliance with defined theme areas continually with FP6 programme, which are industry led and organized in four sub-programmes: cooperate research or European excellence, Joint Technology Initiatives (JTI) and technological platforms, coordination between national research programmes an international cooperation;
- *Ideas* (available on Web address: <http://cordis.europa.eu/fp7/ideas.htm>), who will monitor *European Research Council* (ERC) stimulating creativity and excellence of basic and boundary research from part of competent organized and/or individual teams with goal to increase dynamics, creativity and excellence of European research as basic and boundary knowledge in all scientific and technological areas, including engineering, social-economic and humanitarian sciences;
- *People or Researchers* (available on Web address: <http://cordis.europa.eu/fp7/people.htm>), which will strengthen existing "Marie Curie actions" for quality and quantity strengthen of human resources in research and technology in Europe through support of individual researches for all research themes, focused on better key aspects of knowledge and increased development, higher mobility between university and industry and strengthen connections with national systems;
- *Capacities* (available on Web address: <http://cordis.europa.eu/fp7/capacities.htm>), which predicts activities for helping research infrastructure, research for SME's and research potentials of European regions (regions of knowledge) for creation of new infrastructure for preparation of strategic map for Europe in area of research infrastructure for upcoming 10 to 20 years, which will stimulate realization of complete research potentials (convergence regions) for increasing union and construction of efficient and democratic knowledge society.

In addition of these four components there will be specific programme for JRC (nonuclear activities) and Euratom (nuclear research and training activities).

For financing FP7 programme EU has planned a budget of 68 billion and 500 million Euro, from which largest portion will be for component cooperation, over 39 billion and 730 million Euro (Figure 5).

From figure 5 can be observed that the biggest percentage of planned budget of FP7 programme is in area of cooperative research projects (58 %), ideas (15 %) etc.

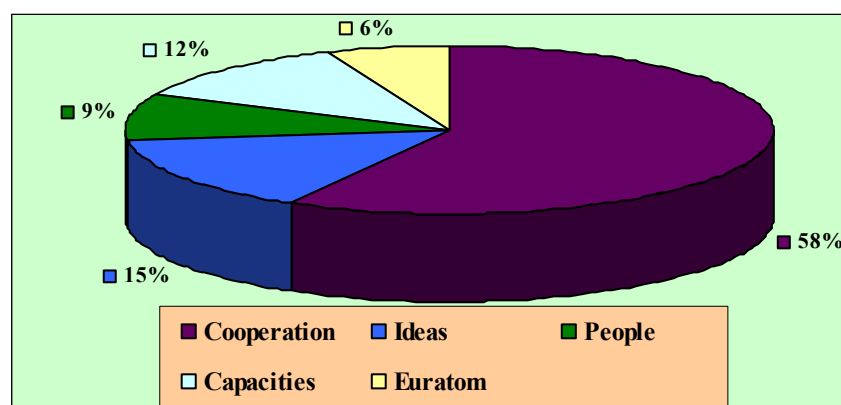


Figure 5: Analysis of budget proposition between basic FP7 programmes

## 2.3. European RTD Projects and Programmes in Area of New Technologies

Some of realized and actual RTD programmes and projects of EU in area of new technologies are [1,2,5,6,8,10-18,29,32]:

- ACTS (*Advanced Communications Technologies and Services*), available on web address: <http://cordis.europa.eu/acts/>;

- BRITE-EURAM (*Basic Research in Industrial Technologies for Europe – European Research on Advanced Materials*) as IMT (*Industrial Materials Technologies*) initiative, available on web address: <http://cordis.europa.eu/brite-euram/>;
- COST (*European Co-operation in the Field of Scientific and Technical Research*), available on web address: <http://cost.esf.org/> and <http://cordis.europa.eu/cost/>;
- COST-TIST (*European Co-operation in the Field of Scientific and Technical Research – Telecommunications, Information Science and Technology*), available on web address: <http://cost.esf.org/> or <http://cordis.europa.eu/cost/>;
- DataGrid (*International Data Grid*), available on web address: <http://www.eu-datagrid.org/>;
- DEISA (*Distributed European Infrastructure for Supercomputing Applications*), available on web address: <http://www.deisa.org/>;
- eContent, available on web address: <http://cordis.europa.eu/econtent/>;
- EDG (*European Data Grid*), available on web address: <http://www.edg.org/>;
- EGEE (*Enabling Grid for E-Science*), available on web address: <http://www.eu-egee.org/>; <http://www.cern.ch/egee/> and <http://egee-intranet.Web.cern.ch/egee-intranet/gateway.html>;
- ESPRIT (*European Strategic Programme for Research & Development in Information Technology*), available on web address: <http://cordis.europa.eu/esprit/>;
- eTEN (*Electronic Trans-European Networks*), available on web address: [http://ec.europa.eu/information\\_society/activities/eten/](http://ec.europa.eu/information_society/activities/eten/);
- EUMEDCONNECT (*Europe and Mediterranean Interconnect*), available on web address: <http://cordis.europa.eu/ist/rn/eumedconnect.htm> and <http://www.dante.net/eumedconnect/>;
- EURATOM (*European Atomic Energy Community*), available on web address: <http://cordis.europa.eu/fp6-euratom/>;
- EUREKA (*European Research Coordination Agency*), available on web address: <http://www.eureka.be/>;
- EuroGRID (*European Grid Computing*), available on web address: <http://www.eurogrid.org/>;
- GEANT (*Gigabit European Academic Network*), available on web address: <http://www.geant.net> and <http://www.dante.net/geant/>;
- GN2 (*GEANT Network 2*), available on web address: <http://www.geant2.net/>;
- GRID, available on web address: <http://www.cordis.lu/ist/rn/grids.htm>;
- IMS (*Intelligent Manufacturing Systems*), available on web address: <http://www.ims.org/> and <http://cordis.europa.eu/ims/>;
- IMT (*Innovation Management Techniques*), available on web address: <http://cordis.europa.eu/imt/>;
- InfoSec (*Information Security*), available on web address: <http://cordis.europa.eu/infosec/>;
- IST (*Information Society Technologies*), available on web address: <http://cordis.europa.eu/ist/>;
- NEST (*New and Emerging Science and Technology*), available on web address: <http://cordis.europa.eu/nest/>;
- NMP (*Nanotechnologies and Nano-sciences, Knowledge-Based Multifunctional Materials, New Production Processes and Devices*), available on web address: <http://cordis.europa.eu/nmp/>;
- SEE-GRID (*South-Eastern European Grid Enabled eInfrastructure Development*), available on web address: <http://www.see-grid.org/>;
- SEE-I (*South-Eastern European Innovation*), available on web address: <http://www.edrustvoscg.org.yu/seeinno.htm>;
- SEEREN (*South-East European Research and Education Network*), available on web address: <http://www.seeren.org/> and <http://seeren.ebusiness.uoc.gr/>;
- SMT (*Standards, Measurements and Testing*), available on web address: <http://cordis.europa.eu/smt/>;
- SustDev (*Sustainable Development, Global Change and Ecosystems*), available on web address: <http://cordis.europa.eu/sustdev/>;
- TEN (*Trans-European Networks*), available on web address: <http://ec.europa.eu/ten/>;
- TEN-Telecom (*Trans-European Networks Telecom*), available on web address: <http://www.ten-telecom.org/>;
- TMR (*Training and Mobility of Researchers*), available on web address: <http://cordis.europa.eu/tmr/> etc.

**ESPRIT** [8,10] (*European Strategic Programme for Research & Development in Information Technology*) is an integral and specific European RTD programme or an assembly of developing projects, started in 1984, for areas of science and technologies, with special look around to information technologies (*Information Technology* - IS) and its boundary areas, which includes several European companies, research laboratories and government agencies. By now 30.000 projects have been realized in frame of ESPRIT programmes.

ESPRIT programme available on web address: <http://cordis.europa.eu/esprit/>.

**EUREKA** [8,10] (*European Research Coordination Agency*) is a complex European programme or assembly of projects, started in 1985, for different areas of European programme for high technological research and development. Programme EUREKA has been designed with a purpose to, through exploitation of advanced technologies, enable orientation of market, global concurrency, strengthen concurrent position of European companies on World market and to improve quality of life. Network of EUREKA programme consists of

industries and research institutions from 27 European countries and countries of EU. EUREKA programme is being governed by **European Research Coordination Agency** with office in Brussels (Belgium), by which name some consider that this abbreviation appeared. By now it has been realized over 2.000 projects in frame of EUREKA programme.

EUREKA programme is available on web address: <http://www.eureka.be/>.

**GRID** [8,10] is a European project started in the beginning of the new millennium, with the goal to create hardware and software infrastructure and association of computer strength of scientific institutions from all over the world for solving most complicated problems in science. GRID project is being governed by CERN institution, while network infrastructure consists of computer centers in scientific institutions in Prague, Lion, Karlsruhe, Budapest, Bologna, Krakow, Moscow, Barcelona, and in Tokyo and in Taiwan, two centers in United Kingdom and several in USA. Using networks of high-speed and vast power of computers GRID shares data and computer resources in frame of centers, and in near future it will be available to the public. Based on that it is predicted that GRID will be the new network technology instead of Internet. First phase of GRID project is called LCG-1 (*LHC Computing Grid - I*).

GRID project is available on web address: <http://www.cordis.lu/ist/rn/grids.htm>.

In frame of IMS programme was established and awarded one years prize for accomplishment from this area.

**IST** [8,10] (*Information Society Technologies*) is a programme and more important themes of research and technological development in frame of RTD frame programmes (FP) of EU, for area of Information technologies (IS). For needs of IST programme realization it is formed and **IST Advisory Group (ISTAG)** and **IST Committee (ISTC)**. In frame of IST programme it is formed **European IST Prize (EISTP)**. It is the most recognized European award for innovational products and services in area of Information Society Technologies (*IST*), which is firstly awarded in 1996, and since then it is given every year. Informations about this prize are available on web address: <http://www.ist-prize.org/> and [http://europa.eu/information\\_society/istevent/\\_2004/eistp/index-en.htm/](http://europa.eu/information_society/istevent/_2004/eistp/index-en.htm/). By now a large number of projects have been realized in frame of IST programme.

IST programme is available on web address: <http://cordis.europa.eu/ist/>.

### 3. EUROPEAN RESEARCH & INNOVATION AREA (ERIA)

The creation of a European Research and Innovation Area (ERIA) is a key component of the strategy defined at the Lisbon European Council in March 2000, which aims to make the European Union by the year 2010, the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion. The European Commission has long been a proponent of using science and technology policy as a means of promoting economic development, quality of life and cohesion by upgrading the capacity of less-developed regions, allowing these regions to participate in top-class research on the basis of excellence rather than simply on the basis of geographic location.

The ERIA is envisaged as a tool to overcome Europe's main weaknesses compared to its competitors (mainly the USA and Japan) namely:

- Insufficient funding - the average research effort in the EU is only 1.9% of GDP, compared with 2.8% in the USA and 3% in Japan;
- The European 'paradox' - while European research laboratories perform relatively highly in publications and citations, there is a lack of an environment that stimulates innovation and exploits results;
- Fragmented activities and dispersed resources. [20]

### 4. EUROPEAN HIGHER EDUCATION AREA (EHEA)

Concept which includes the area of higher education the European Union (EU), which was established in October 1999, and should be implemented to the 2010 year. EHEA (European Higher Education Area) area is known as "Bologna Process" which is the basis of the Bologna Declaration signed in October 1999 on the "Board Meeting 37" set in Cyprus. In the "Bologna process" many of the universities of Central, Eastern and Southeastern Europe should reach EU standards of the university, with the provision of quality of all university activities. For the purposes of EHEA space, there are two new concepts of transfer of credit points for students, they are: ECTS and ECTAS. European Union (EU) through a large number of research-development and educational projects and programs tends to creation of a European information society and knowledge society is based on the ERA and the EHEA space. For basis of EHEA space is established the Web portal on learning opportunities in all European named PLOTEUS.

One part is being realized in frame of "Bologna process" whose base is Bologna declaration signed in 1999, for whose need a Web portal is established on **Learning Opportunities Throughout the European (PLOTEUS)**, available on Web address: <http://europa.eu.int/ploteus/portal/home.jsp>.



<http://www.bologna-bergen2005.no/>

For the purposes of EHEA space, there are two new concepts of transfer of credit points for students, they are:

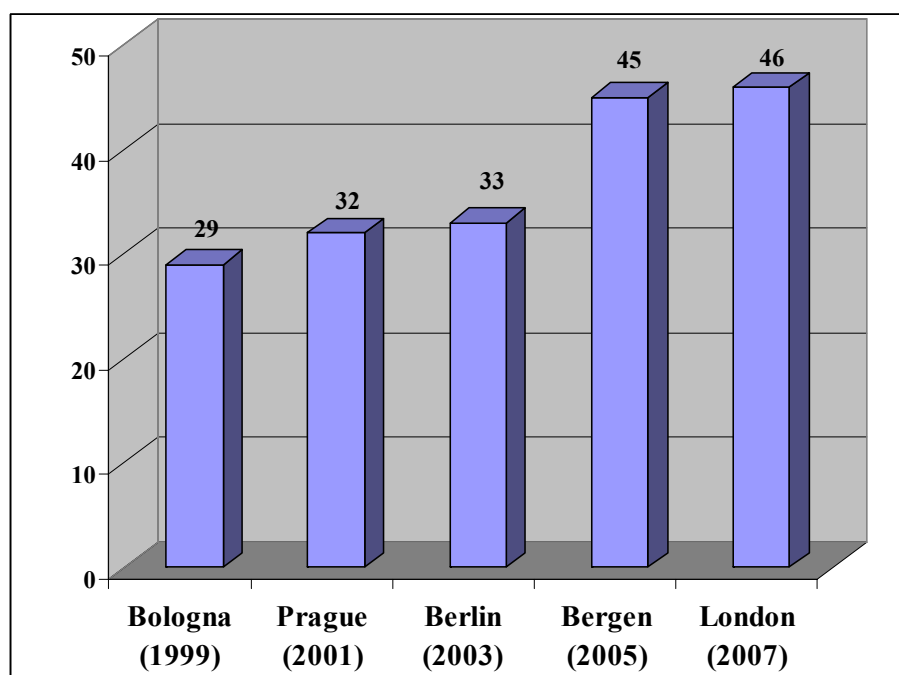
- ECTS (*European Credit Transfer System* - European system of points transfer -ESPB) i
- ECTAS (*European Credit Transfer and Accumulation System*)

ECTS (European Credit Transfer System) is a unique system for determining the guidelines and course for credit system of points transfer for students, implemented as part of the European ERASMUS program. ECTS system is based on the points that represent the difficulty of studying of students during a program of study (60 points for the academic year, 30 for the semester and 20 for trimester). It enables easy recognition and comparison of different educational programs at universities and other higher educational institutions in the countries of Europe. Application of ECTS system contributes to the mobility of students and building of a unique European Higher Education Area (EHEA), with the possibility of transfer and accumulation (for ECTAS system) points obtained in different institutions and, therefore, is the basis of high quality inter-university cooperation and student and teachers. Implemented through the so-called "Bologna process", which is the basis of "Bologna Declaration", signed in 1999.

It is available on the Web sites: [http://europa.eu.int/comm/educations/programs/Socrates/ECTS/index\\_en.html](http://europa.eu.int/comm/educations/programs/Socrates/ECTS/index_en.html)

ECTAS (European Credit Transfer and Accumulation System) is an extended ECTS transfer system and accumulation of points during the study. In contrast to the ECTS system, this system allows the transfer and the accumulation of points gained in different institutions and, therefore, is the basis of high quality inter-university cooperation and student and teachers. Application of ECTAS system contributes to the mobility of students and building a unique European Higher Education Area (EHEA).

The Bologna process started in 1988 to celebrate the 900th anniversary of the University of Bologna. It was adopted as a political instrument by some EU Nation States in 1998 when there was considerable concern over the economically unsustainable, grossly inefficient higher education systems in Europe. Historical actions in Bologna process is given on table 1. The Bologna process of three cycles of Higher Education has received widespread agreement across now 48 nation states (figure 6).



**Figure 6:** Number of countries in the Bologna Process

## 5. INTEGRATION OF ERA, ERIA AND EHEA

Integration of ERA, ERIA and EHEA educational area is shown on figure 7 [17] and it is intended to create in Europe a targeted environment encouraging and motivating higher education, research and innovation, and promoting a wide-range cooperation of higher education and research institutions and facilitating creation of quality assurance systems at both institutional and national levels, as well as in the region as a whole.

The integration of the stated three educational areas follows the principal objective of supporting the knowledge-based society on a European scale – the so-called "Europe of Knowledge".

**Table 1: Historical actions in Bologna process**

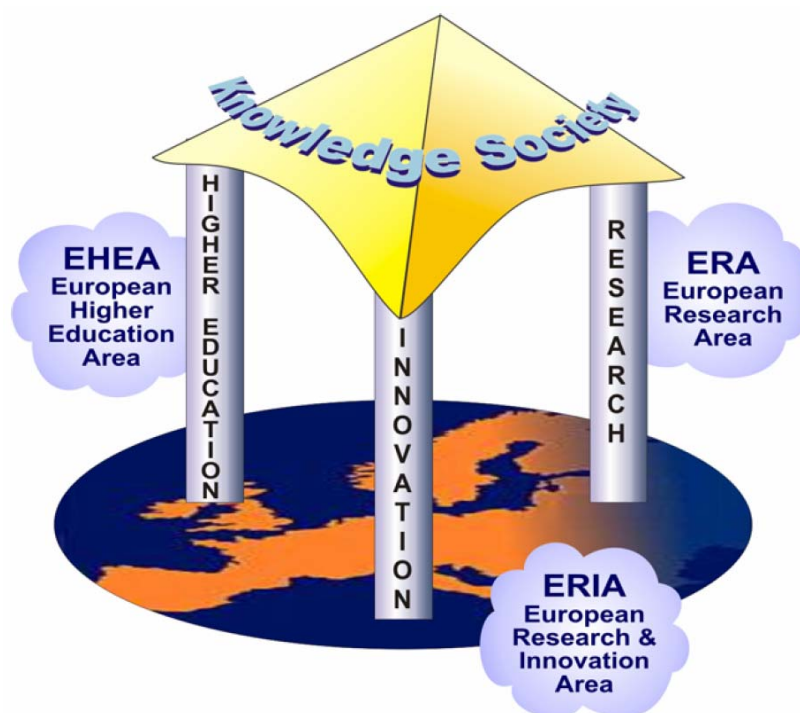
Year	Title	Description
1987	Erasmus Programme	Established education programme from European Community
1988	Magna Charta Universitatum	which originated at the University of Bologna to celebrate the 900th anniversary of that university, the oldest in Europe [30]. The charter simply called for an open, transparent, European HE system.
1995	Socrates Programme	Established education programme from European Community
1998	Sorbonne Declaration	This covered the harmonisation of European Higher Education, and was signed by France, Italy, Germany and the UK [24].
1999	Bologna Declaration	Most people think this was the start of the process because at that time the Declaration was signed by 29 nation states [26,27]. Declaration on the European space for higher education.
2001	Prague Summit	This reaffirmed Bologna, and the Commission ‘appreciated’ role of the European Universities Association, which is the association of Rectors of European Universities (in the UK the equivalent body is Universities UK, known as UUK) [31]. Towards the European Higher Education Area.
2003	Berlin Summit	This included the role of quality assurance in the Bologna process. It officially adopted the two-cycle degree process, and included the recognition of degrees and periods of study as defined by the European Credit Transfer System (ECTS) [23]. Realising the European Higher Education Area”.
2005	Bergen Summit	This reaffirmed Berlin, and added a third cycle of degrees which are exclusively PhDs. It did not embrace EngD’s etc, known as the ‘professional doctorates’. In Europe there are no equivalents of the UK’s ‘professional doctorates’, and their place in the Bologna process is still undecided. Bergen also included the notion of the ‘Integration of the European Higher Education Area and the European Research Area’, and posited the Bologna Process as the ‘instrument to achieve the integration of the EHEA and the ERA’ [23,27]. The European Higher Education Area – Achieving the Goals.
2005	Glasgow Declaration	This was largely concerned with ‘refocusing the Bologna process midway to 2010’. Its banner headline was ‘Strong universities for a stronger Europe’, based on ‘the knowledge society through higher education and research’. The manipulation of the Bologna process was thus to enhance research and innovation within Europe [28].
2007	London Summit	The UK held the presidency, Communiqué contained the statement by Bill Rammell (Minister for Higher Education) : engage with Bologna follow Imperial’s lead” [25]. Towards the European Higher Education Area: responding to challenges in a globalised world.
2009	Final Bologna conference	The “final” Bologna conference will be hosted by the BENELUX states [22].
2009	Leuven	Conference of European Ministers Responsible for Higher Education.

## 6. CONCLUSION

According to official data the largest percentage of investment for RTD have Japan and USA. While 15 countries of EU have something more than 1,9 % from BNP, but the plan is to increase the percentage to 3% by the end of 2010 from BNP.

RTD trends in new millennium for production provides new possibilities for developing new manufacturing technologies on bases of informational technologies as (micro and nanotechnology, laser finishing, vibro-finishing etc) and new manufacturing and technological systems (FMS, IMS, RMS, AMS etc.), e-production and virtual companies.

Frame Programmes (FP) and global programmes and projects (BRITE-EURAM, COST, ESPRIT, EURATOM, EUREKA, GRID, GEANT, IST, NMP, TEN etc.) are the main instrument for creating so called European Research Society, which is established in March 2000 year in process of realization 5<sup>th</sup> frame programme (FP5). Main goal of European Research Society (ERA) is to give countries of EU construction of knowledge society, as a new scientific-technological progress.



**Figure 7:** Integration of ERA, ERIA and EHEA educational areas [17]

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## **THE BUSINESS IMPACT OF SOCIAL COMPUTING**

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*Social computing is about enabling, encouraging and capturing the often unstructured interactions between individuals. These interactions and the individuals involved are the essence of communities — and their diversity; depth and reach are the measure of how vibrant and dynamic those communities are. Humans need to communicate, to socialize, to belong to communities, and to be recognized and respected by other community members. These desires are well understood and documented (and are encapsulated in Maslow's "Hierarchy of Needs," published in the 1940s). The arrival of affordable computing power, communications and the Internet has enabled communities to break the previous constraints of geography and become global in their reach and influence. The concept of social computing is therefore emerging from the confluence of a desire to harness the interactions of groups of individuals along with the availability of technology platforms that support large-scale collaboration in virtual environments.*

*Such environments can create a new social dimension or extend social interaction among loosely connected participants, provide the means for interaction and information sharing, and allow social patterns to emerge and evolve. They are enabling the growth of communities with unprecedented reach and influence, often without easily identifiable leaders. Successfully leveraging these communities represents a great opportunity for enterprises, although it poses many challenges.*

**Keywords:** *hierarchy of Abraham Maslow, social computing, wikis*

### **1. INTRODUCTION**

Within the enterprise, social computing facilitates many interpersonal functions with business implications, such as internal teaming, problem solving, collaboration, and knowledge management and transfer. Such interactions lie at the core of meeting growing business demands to improve communications, enhance collaboration and encourage innovation throughout the organization.

Externally, social computing supports deeper, more mutually supportive enterprise relationships by involving customers and suppliers in similar ways at every stage of a business life cycle — from design, through development and production, to marketing and sales, to customer service and support. As businesses increasingly seek to strengthen their level of engagement with prospects and customers, understanding the power of communities, the multiple personas of their members, their expectations, their aspirations and how to interact with them will become essential skills for business in the 21<sup>st</sup> century. Stronger customer relationships increase loyalty and brand recognition, and ultimately drive enhanced revenue.

However, social applications, the key to harnessing the growing community, are quickly rising to the "Peak of Inflated Expectations" and are often being deployed without mutual balanced purpose. Every successful social computing project will need mutual purpose, from the customer, employee, citizen or persona side (motivation for participating) and the business side.

Social computing represents almost unknown territory for most enterprises, used to many years (even decades) of tight, top-down hierarchical control, and many significant challenges lie ahead for business leadership. With a culture that depends on control and security to protect information, the freedom inherent in social computing will be especially challenging to information security officers and others inside the enterprise responsible for sensitive information or compliance. Balancing the conflicting demands of freedom and innovation against the necessary controls and restraint will be the key to successful social computing deployment for enterprises. The continuing democratization of IT (a broader perspective describing the growing impact of the consumerization of IT on enterprises) and the increasing use of mobile devices will be magnified by social computing to affect

both platforms and use. This will have significant implications for IT operations and corporate infrastructure as well as for internal processes and platforms.

Social computing is the way people use technology to interact and create communities, and although we believe that these behavioral trends will affect all elements of society and all enterprises (public and private) in all geographies and markets, cultural, historical, geographical and industry norms and behaviors will influence the extent, manifestation and speed of change.

The impact of communities is an irreversible and increasing trend that will affect all organizations in all regions and industries. The democratization of IT is accelerating and globalizing the opportunities for interaction between individuals. Social computing is intricately linked to the emergence of Web 2.0 to help meet the demand of individuals to engage more effectively, and as these tools develop, they are entering the enterprise environment via a multitude of formal and informal routes. This is a trend that is in its early stages, will develop quickly and evolve substantially. But it will not go away. Business and IT leaders should take careful note of the detailed perspectives in this report and consider how it will affect their own organizations at all levels.

## **2. SEVEN WAYS TO SUCCEED WITH WIKIS AND SOCIAL SOFTWARE**

Many deployments of blogs and wikis have failed, been ignored or have slowly become irrelevant. Success requires focusing on appropriate uses and implementing an environment that accentuates the virtues of social software.

### **2.1. Key Findings**

- Many deployments have not succeeded because they were aimed at inappropriate goals or lacked some of the elements necessary for success.
- Blogs are appropriate for the dissemination and discussion of opinions and ideas from a personal perspective.
- Wikis are appropriate for the creation of content by a group of people, particularly if the content, the group and the creation process are open-ended.

### **2.2. Recommendations**

- Identify which work activities would be likely to benefit from an open collaborative environment. It works best for novel tasks where the outcome or process is not clear.
- Encourage participant diversity when setting up an open collaboration project supported by a wiki.
- People need some guidance to get started, but make sure the environment stays freeform and user-controlled.
- Be explicit about governance.

### **2.3. What you need to know**

Users look to the IT organization for guidance on how to implement blogs, wikis and other kinds of social software. Many early deployments have failed, been ignored or slowly withered because they focused on inappropriate goals and did not create the right environment. Blogs and wikis have the longest track records, so what they are good for — and not good for — are clear.

Deployments should incorporate several elements, including ease of use, identifying the right context, exposing connections, appealing to self interest and gaining management recognition. Before investing in social software, IT managers should understand where it fits in the context of existing workplace applications and practices.

### **2.4. Strategic planning assumptions**

By 2009, only 20% of the data and functions of enterprise collaboration applications will be open and free-form (0.8 probability). Through 2009, fewer than 30% of Fortune 1000 companies will provide enterprise wide social software platforms due to concerns with security, technology maturity and compliance (0.6 probability). By 2009, 70% of successful wiki deployments will owe their success to less than 5% of their users who maintain a wiki because it helps them personally (0.7 probability).

### **2.5. Analysis**

Wikis, blogs and other kinds of enterprise social software expand support for the informal interactions that revolve around the key behaviors of a high-performance workplace (discovering, innovating, collaborating, leading and learning). Social software can also assist with creating documentation, classifying information,

improving search relevancy, exploring ideas and making decisions. However, many deployments have not succeeded because they were aimed at inappropriate goals or lacked some of the elements necessary for success. IT managers in charge of social software should understand what tasks are appropriate for wikis and blogs, and should focus on seven elements in any deployment. IT managers can also get some ideas from companies that have deployed social software effectively.

## **2.6. The Uses of Blogs and Wikis**

Blogs and wikis offer a "conversational" alternative to personal tools, such as e-mail and instant messaging (IM). Blogs and wikis encourage unplanned contact and interaction. Both applications allow for quick and easy creation of rich, hyperlinked Web content. Both encourage feedback and comments. With blogs, comments are added to existing content, while with wikis, people can change existing Web content.

Blogs are appropriate for the dissemination and discussion of opinions and ideas from a personal perspective. For example, a CEO who blogs regularly and in a conversational style can communicate effectively about company strategy and direction. Wikis are appropriate for the creation of content by a group of people, particularly if the content, the group and the creation process are open-ended. For example, a product manufacturer might use an internal wiki to create marketing documentation or product manuals; or an external wiki to improve it with the help of customers.

## **2.7. The Seven Elements of Successful Deployments**

### **2.7.1. Make it open and easy to use**

The environment should be accessible with a simple login, and the content should ideally be in a Web-native format to facilitate linking, syndication (feeds) and alerts for when something changes. It should fit naturally into the working environment of every user so that they find it easy to contribute. The environment should be extensible, promote the reuse of content and, where necessary, it should be easy for users to control access.

### **2.7.2. Expose connections**

Allow users to create their own ways to structure and organize the information they use (for example, using shared bookmarks and social tagging), but also allow them to see the overall structure that emerges from their individual choices. Use "tag clouds" or other mechanisms to reflect the connections and emerging structure of the content, as well as the relationship between different users based on their actual use of the system. This requires the implementation of:

- Rich profiles for every user (so people can see who would be valuable to work with)
- Shared bookmarks and tags
- Engagement metrics and other ways to monitor people's level of attention within the environment

### **2.7.3. Link to e-mail**

E-mail is the simplest way to share information between users. For the vast majority of users, email will remain their primary information exchange tool. Users generally dislike having to go to another environment in order to check for responses or to post a comment. That is why it is difficult to achieve a critical mass of users in collaborative environments that are not well integrated with e-mail. Users should be able to contribute and respond via e-mail as well as be alerted to changes via e-mail or Really Simple Syndication (RSS) and Atom feeds.

### **2.7.3. Identify the right context**

Identifying business activities that play to the strengths of the open participation environment supported by social software is very important. Some of the most common of these activities were discussed in a survey of 168 corporate wiki users by the University of Southern California (see <http://ws2006.wikisym.org>):

**Software development** — technical documentation, client communication, issue tracking, internal workflow, quality and process management, software design, reference information, setup information, configurations, specifications, instructions for installing software, software asset management, and application maintenance and operations.

**E-learning** — Web design, requirement descriptions, testing and training assignments.

**Project management** — creation of deliverables, meeting agendas, status reports, "great ideas" saved for later, and standards and practices.

**Posting of general information** — vacation schedules, how-tos, personal blogs, corporate information, lists of resources on a given topic, best practices, innovative methods and processes, corporate policies and procedures, human resource information, guidelines, insurance information and expense reimbursement.

**Communities of practice and user groups** — self-forming communities of interest.

### 2.7.5. Focus on people

Target activities where a large and diverse number of people may be able to make positive contributions, but where it is difficult to engage them formally. The transparency of open collaboration environments supported by social software encourages self selection (voluntary participation). In addition, identify and train users who are natural collaborators and who can help bring others into a conversation or exert soft social control to steer an activity in the right direction. Do not allow anonymous contributions or open wikis to the public without screening people, because you will likely see bad behavior (see "Cloak and Dagger Collaboration and Publishing, Revisited"). Instead, limit access to those who have already demonstrated reasonable behavior and an interest in your company or product — for example, allow people to participate if they have phoned or written to the company.

### 2.7.6. Provide initial structure

People need a little guidance to get started (but avoid over-engineering). Give them a purpose and objectives, or help them define their goals — either way, users have to buy in to the objectives. Set up initial content, links to external resources, templates and guidelines, but make sure the environment stays free-form and user-controlled. For example, have groups define themselves; allow users to modify and reuse the content, and reshape the categories and structure. Avoid "big bang" deployments on too large a scale or for too ambitious a project. Whatever mode of governance you choose, be explicit about it. Let users know whether the wiki is moderated or not and, if so, who the moderator is. Unclear governance can lead to failure. Define acceptable use in terms of what can be discussed (for example, nothing that is: subject to compliance; confidential; already being discussed or developed in another forum; abusive) and in terms of process (how to change things, how to change them back, who has authority and so on). Managers need to monitor the discussion lightly to make sure it does not spin out of control.

### 2.7.7. Lead by example

Managers can shape perceptions on whether the environment is open, whether it is an important place and whether participation is recognized and rewarded. IT and business managers should participate actively (but not so much that users feel managers are dominating) and reward users with their attention. Recognize key contributions.

## 2.8. Some Examples of Social Software Deployments

**A global media agency** implemented a wiki-centric collaborative environment in early 2006. Employees drive the effort, which helps to share information among 16 offices worldwide. It has become a project-based collaboration site for seven business disciplines, including analytics, strategy, enterprise solutions, technology, media, and creative and user experience. The wiki facilitates an open dialogue between people from different teams who connect via profile pages and user content. In addition to wiki functions, this environment blends other capabilities for discussing, organizing and sharing information. Deep integration with e-mail allows discussion to take place in e-mail, but be persistently organized as blog or wiki pages. The environment also integrates with external resources and services such as Flickr, Digg, del.icio.us and Google Maps.

**A global broadcasting corporation** deployed wikis, blogs and social tagging without any preconceived ideas about the impact. Soon after their introduction, about 200 people were maintaining internal blogs, mainly as a way to communicate with their teams and to bring to the surface tacit knowledge and informal interactions. Thousands of employees are active users.

Social tagging helped to organize internal and external information in a way that makes sense to users. In one case, its head of global news discussed policies and other serious matters in an open and meaningful way. In another case, activities could be organized quickly and transparently with the participation of people who would not otherwise have been involved.

**A semiconductor design firm** had a positive experience with its internal wiki. Initially, it was used by engineers to share data and updates. It then spread throughout the organization and is being used for core technical development, corporate operations, training and product management. The company sees its internal

wiki as a vital tool in technical innovation and improving speed to market. The IT organization started supporting the wiki about two years after it was introduced.

## **2.9. Tactical Guidelines**

- Focus on activities that depend on exploration, innovation, creativity and discovery, and that could benefit from fresh perspectives.
- Appeal to individual motivations when planning a wiki deployment.
- Social software applications, such as wikis and blogs, provide user-friendly and flexible ways to aggregate, organize, share and amplify the value of personal and hidden knowledge.
- Follow a technology planning process that prioritizes openness, usability, flexibility and a focus on people.

## **3. USE SOCIAL SOFTWARE TO FILL THE GAP BETWEEN FORMALITY AND CHAOS**

This research discusses how application managers can use social software to bridge the gap between formal and chaotic collaboration environments.

Collaboration environments that are either too chaotic or too formal both fail to give workers the tools they need to share information, debate ideas and solve problems. Application managers should try to augment established collaboration support with easy-to-use, free-form environments that encourage participants to experiment, communicate and share their work. These environments combine the usability and flexibility of communication mechanisms such as e-mail, with the persistence and organizational properties of formal collaboration support environments. They also use built-in mechanisms that rely on signals from the way users interact with information and with each other to filter and organize the work environment in a way that mirrors the participants' real relationships with each other and with the information they work with.

### **3.1. Pros and Cons of the Formal Collaboration Support Environment**

Many collaboration support environments, shared team workspaces and project repositories have formal requirements about who participates and who has access to the information kept there. They also have formal rules for how participants interact with each other and with any relevant information or documents. A good example is the way a pharmaceutical company works to get its new drug through a government regulatory process. The participants in these environments are preassigned, with certain tasks to perform. People outside the prescribed process have little or no view into the group's activities.

*The pros:* Such environments are a great way to support well-understood processes or transaction-oriented activities. These environments can ensure that a process is implemented correctly and on time. The activities stay focused on the job at hand, the information is secure, and the rules of engagement ensure quality control, consistency and accountability.

*The cons:* Formal collaboration support environments are too rigid for some activities or less understood processes:

- Changes are costly and time-consuming. Information tends to become outdated.
- Many prospective participants are left out. The process itself is isolated from other activities.

### **3.2. The Pros and Cons of Chaotic Direct Communication**

Formal collaboration support environments cover only a fraction of collaborative interactions. Most work still gets done through direct peer-to-peer interactions by e-mail, instant messaging, the telephone and face-to-face conversations.

*The pros:* Informal direct communication among peers works because it is simple enough to do — everyone can be reached by e-mail or the phone. This is also a straightforward mechanism for the sender, ensuring that the communication is received only by the intended recipients.

*The cons:* Heavy reliance on informal direct communication between workers creates two problems:

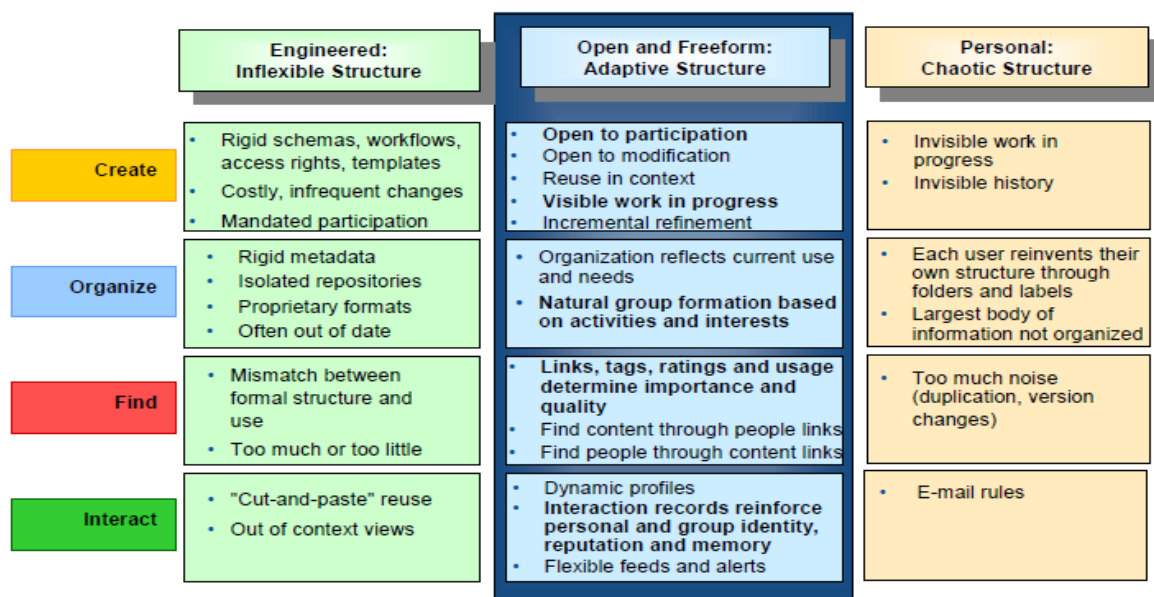
- Engaging the right people in a particular activity is a hit-or-miss affair that depends on whether the right information is passed on to the right people. Someone who may have something to contribute to a particular R&D project or who may have worked with a prospect in a previous role will not be able to participate unless he or she is invited.
- Useful information is hidden. Others who may benefit from this information cannot reuse it. Worse, each worker ends up maintaining a duplicate personal information repository by organizing the same e-mail traffic in folders and documents on their hard drives. This is not only wasteful, but can also lead to missed opportunities, since there is little or no opportunity to learn from peers.

### 3.3. How Social Software Bridges the Gap

Social software can help organizations combine the usability and flexibility of communication mechanisms such as e-mail with the persistence and organizational properties of formal collaboration support environments. Social software is about using opinions, comments, descriptions, labels, preferences, observations, interests, likes/dislikes and predictions as raw material for building valuable information resources. A social software environment brings together a number of capabilities that:

- Stimulate participation through informal interactions.
- Capture and organize these interactions into an emergent structure that reflects the collective attitudes, dispositions and knowledge of the participants.

Application managers can create these kinds of environments with enterprise social software, to bridge the gap between the formal and the chaotic (Figure 1). Note that we are not suggesting that social software should or will replace either of the two extremes. Formal collaboration environments will continue to be relevant as part of automating well-understood processes, while semi-private direct communications should continue to be used to reach specific individuals. Rather than replacing, what we are suggesting is that social software should add to the existing range of collaboration support options.



**Figure 1:** Social Software Fills the Gap Between the Formal and the Chaotic

As the middle column in Figure 1 shows, an enterprise collaboration environment can operate like Wikipedia or del.icio.us but within the internal, secure network. To the extent permitted by security restrictions, the information can be open to those who may benefit from having access to it, along with the option to make changes if appropriate. Changes can be tracked down to each individual, not only for auditing purposes but also to see the history of contribution and the perspective of each participant. There is no fixed relationship structure or formal taxonomy; rather it offers people a free-form method of using the information and interacting with others. Simply put, content creators will make their posts, and others will react, creating a giant soup of content: wikis, blog entries, tags, bookmarks and ratings.

Users might fear that all this content may just amount to an unusable mess, but it is possible to use internal linking and collaborative filtering mechanisms to organize the content. Collaborative filtering may be based on tags, bookmarks, links, searches, visits and ratings. Users can also be clustered into different groups on the basis of common interests and activities. Content structure and groupings can be refined over time — the more people who participate, the better it works.

This environment also allows others to view work in progress, leading groups to form naturally according to interests and expertise, not by decree and selection. These groups can communicate together in a networked environment, and others on the periphery can see what the groups are doing. The software records all this interaction and shows the group's identity and memory, building trust that allows someone to view how the project worked and to attract people for new activities.

### **3.4. Recommendations for Application Managers**

- Use consumer bookmarking, tagging, and social filtering applications to understand the technical possibilities in preparation for using similar technology internally.
- Look at established collaboration tools and environments and investigate the extent to which they can be configured to support and aggregate informal interactions.
- Analyze the consequences of fixing in advance the structure of your existing collaborative environments.

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## **GLOBALIZATION AND ITS IMPACT ON THE SOCIAL STATUS OF WORKERS IN REGION**

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***Summary:** Free flow of world's equities and changes that are ongoing and that will happen indicates that 21st century will be era of multinational companies. Those companies will leave numerous countries and its governments in the shadow. Industrial advancement and free flow of funds is not necessarily always bringing welfare, and globalization process as indispensable fact will not bring fortune to majority of people but starvation and poverty. Globalization process deepens gap between rich and poor ones, and the mass of world's power and richness is still in hands of few people that are "ruling the world". However, globalization process should be analyzed in depth and its privileges should be used in order to enlarge world's capital what for development and transition countries makes an opportunity to ally between themselves, and fight for status where "winner will not be only that benefits, and loser will not lose everything". In this status strong ones should support more weak ones and the process should run towards decreasing of gap between rich and poor ones.*

**Key words:** globalization, social status, social impact

### **1. INTRODUCTION**

Globalization of the world as unavoidable process sets a number of issues and dilemmas that citizens and nations around the world are searching for precise answers. Development of this process is happening at a certain level of development of productive forces to allow only a few decades, enormous progress and possibilities and mutual communication between people. Because of the confusion of significant part of humanity by such expanding all that is called progress and creates a large globalization problem in society, which is primarily a negative effect on the social status of workers.

### **2. WHAT IS GLOBALIZATION?**

New dimension to the functioning of economy gives growing trend of globalization. Globalization is the world current issue with a lot of praise and critics. What is it as good or bad that the one love, and hate the other? To be able to get a comprehensive picture of it, we, first of all, we need to know what globalization is. From different approaches understanding globalization we appreciate the most is the one that is given in the UNDP report for 1998 year, which says: "Globalization is a process that is dispersed in width, and in depth, and that includes the movement of international trade, finance and information on a unique, integral and global market."

Globalization has been enabled by three same-time forces, three democratizations:

#### **Technology democratization**

Discoveries in computerization, telecommunications and digitalization have led to a large increase in computer and communications capabilities with reduced prices. This enabled easier access to technology, worldwide, that is globalization. Millions of people connect and the connection between them led to new products and services.

### **Finance democratization**

Started in the 60's with the development of securities markets. Seventies passed the possibility that almost all the assets with predictable cash flows and connects divided into smaller parts in which individual investors can invest. At the same time occurred democratization investment, which has enabled the reduced currency exchange controls, which has helped investments in foreign countries. During 80's 170 billion private investment is moved to new markets. In a globalized world, the impact of government is reduced and the impact that increased market control centers of economic power.

### **Information democratization**

Globalization TV stations, it became impossible to hide from the public development in the external world. The arrival of the Internet has accelerated this process. This is related to globalization and other forces. One is the lack of suitable products, which was first noticed by the Austrian economist Schumpeter.

What would be the main characteristics of globalization which could signify? No intention to give a comprehensive answer to this question, we appreciate that the basic characteristics of globalization can be expressed through:

**1. Strong activities of transnational companies in the world economic scene.** It is believed that in today's world, about 350 transnational companies holding more than 40% of world trade, and the largest 500 of more than 50%. For example, in the production of durable consumer goods in the five largest transnational companies to participate with 70% in the production of the aircraft 60%, electronics more than 50% of chemical products and about 35%. Or, for example ten transnational companies now control about 70% of sales of computers and almost 90% of electro-communications equipment.

**2. Dynamic movement of international capital to the world market.** Annual turnover in the financial markets of the world is about 100 trillion dollars, of which, for example. only daily turnover on the five most attractive stock exchanges around the world (New York, London, Tokyo, Singapore and Hong Kong) is more than trillion dollars. Financial capital goes in one direction, from developed to underdeveloped countries, which only deepens the gap underdevelopment. Some estimates say that the year outside the boundaries of national economies invest about 150 billion dollars. So since 1992. - 2000. The external debt of developing countries increased from 1340 to 2050 billion dollars.

**3. Strong communication and IT integration of the world economic space.** It is the largest communications integrative media.

**4. Strong development of universal consumer society.** Today an increasing number of products and services have a global character, which monitors global advertising and expansion of tourism. Around 12% of world GNP is implemented in the tourism industry. Today, Coca-Cola drinks throughout the world, Marlboro smoke at all meridians, jeans is worn all the clothes in the world, young and old and men and women, etc. It should be noted that the globalization of world is a restless process flow and who will not be able to stop with oysters, or burning action - which apply anti globalization movement. This is a great river, whose water level is increasing every day, the river that many used for additional irrigation and picking increased yield, but the blue and all those who await unprepared.

How to call a company whose business crosses state borders, linking the two countries through corporate policies and practices. Some of the names used for such companies are:

#### **Multinational Corporations (MNC)**

The fact that companies operating in multiple countries has made experts to adopt the name of "multinational corporation", or MNC. This name is very popular in business journalism and publishing. It seems that this is the most universal name that describes the corporation with operations worldwide. These companies are headquartered in one country and operating in many countries (General Motors, IBM, General Electric, Toyota)

#### **Multinational enterprises (MNE)**

After some international giants in the state owned companies, and not the corporation,' the name of multinational companies'' (MNE) goes into the dictionary of international trade.

#### **Transnational Corporations (TNC)**

Since the company transcends, or your business goes beyond the state border, some experts used the name "transnational corporations", or TNC. The United Nations favors the name and created the Center for Research study of transnational corporations.

#### **Global Corporation**

This name has become popular in the 1990-years of them. First used for a small number of companies whose business developed in more than a hundred countries. Nestle has long been described as "a truly global

corporation," because the framework of its operations covered more than 150 countries around the world. This name is often applied to companies that operate in several parts of the world.

The advantages and challenges of multinational corporations

Multinational corporations can take advantage of business opportunities in many different countries. Around the world can collect money for their operations. Use the words that they are able to establish a production capacity in countries where their products can be produced in the most effective and most effective way. Company with operations worldwide may have access to natural resources and materials which may not always be available to domestic companies. MNC can hire managers and other staff from all over the world.

#### **From multinational towards global or transnational corporations**

From MNC is a shift towards global or transnational corporation that the entire world sees as a market. This means that the corporation also has to adapt to national and even local needs.

Although many companies strive to become global, only some of it succeeded. This requires the development of products keeping in mind the whole world. When making strategic decisions, should take into account the whole world and tactics must be adapted to national and local environment. With companies from countries in which the global companies do not have access, it is necessary to establish strategic alliances. When the management of personnel who do not belong to home nationalities must be provided with opportunities for advancement towards higher management levels.

Transnational companies are treated as the locomotives of economic growth in less developed countries. Solution to the problem of economic growth and development can be seen in attracting transnational companies in undeveloped countries and countries in transition. In the framework of the so-called "Washington consensus" made the rules of the game to allow them to, or preparing the ground for economic ubiquity of transnational companies in countries around the world. It is clear that the national state, which is dependent of transnational companies, the foreign private capital, is able to have their own strategy for economic growth widens the gap between the small group of rich and ever growing group of poor citizens.

When speaking of the transnational companies as engines of economic growth in less developed countries, the proceeds of the following assumptions and the expected positive effects:

1. TNC bring to the country host a new and much-needed capital
2. adopt new technology
3. increase employment
4. contribute to increasing exports and the opening of the country towards the world

Particularly interesting and inaccessible aspect of TNC activities represent transfer prices (the price used for the system within a TNC place of business operations). They may be well above or below the world price. TNC can be each other's internal reason is very easy to show a loss in business, if it suits. It is known that the loss of a tax. One way to avoid tax liabilities in the host country can be "overpricing".

The world market is becoming a freer and more liberal, and thanks to TNC, is becoming a less perfect, and all the more imperfect and operated.

The shift from TNC to the global company requires a lot of organizational changes within the company, of which four have the most impact on employees:

1. comes to changing the relationship between the companies "parents" and "daughter" which are becoming more independent, and the only decision-making becomes decentralized;
2. global companies to lose its national identity, country of origin, as well as the company headquarters location, it becomes irrelevant;
3. go where there is an attractive and well-trained work force, or go for cheap "brains";
4. changes in the internal organization of global companies tend to reduce the hierarchy among the employees, no strict job descriptions, decentralizes the authority; increasing attention is devoted employee motivation.

#### **The basic features of global companies**

Global corporations are very large companies that their activities in new industries (Microsoft, Apple, IBM, Sony, Compaq ...) or in the old industries that have a technological based on information technology (GM, Ford, ABB, Reebok, Nike ...), seeing the whole world as the single market. For global corporations "national boundaries are irrelevant in an effort to find the best source of materials, products are produced by the lowest price".

Even the location and strategic leadership irrelevant, because "if the global corporation performs most operations in East Asia and if the performance of business activities requires the presence of top management there, the global corporations will be without problems dislocate your strategic peak". Global corporations are not only that they lost their national identity, but are enough economically and politically powerful entities that their interest is not articulated concerning to the national interest of your home country.

#### **1. Building global value chain**

Based on the need for various activities to create the value of global companies locate at different points in the world according to available resources and capabilities and possibilities of achieving competitive advantage.

Value chain consists of primary activities (physical creation of products and services, sale and transfer according to consumer), and support activities (procurement of inputs, the development of technologies and products, insurance, human resources and infrastructure).

## **2. Building global competitiveness**

Global competitive strategies are the strategies that companies achieve competitive advantage in the global market, and realize competitive advantages neutralization main competitors. Multinational competitive strategy is based on the strategy of competition work in individual countries, which combines the company as an independent business. Key content of global competition is a competitive interdependence.

## **3. Direct investment**

Foreign direct investment (FDI) occurred when the investor from one country obtain the assets in another country, with intent to manage the assets.

## **4. Global Focus**

Global companies use the global capabilities to the market in sales, and sources of resources. Seeks to achieve market growth and profitability on a global basis, not on the basis of individual countries. Given that the global market strategy of differentiation combined with rationalization in the area of costs, many global companies transferred production of its high differentiated products in Asian countries and other low-cost and thus generate multilayer competitive advantage (highly high cost products and low cost of production).

## **5. Strategic Partnership**

Strategic alliances are alliances of two or more companies that are linked to agreed targets, maintaining the status of independent companies. Partner companies share the effects of cooperation and achieve control of the Covenant in connection with the requisite tasks. Companies that make alliances contribute to the common results through continued cooperation in the defined key strategic areas (product, technology, business systems). Merger and acquisitions and joint investments not form strategic alliances, since they moved from the existing controls on the new entity. Therefore, strategic alliances experiencing an expansion in the global competition, because it does not assume the risks of investment capital and control of the new entity.

## **6. Independence on the size**

Quality business orientation, not size, determines the essence of global companies. Let qualitative characteristics of the global companies are the focus of the world's needs, creating the world's target market segments, focusing on the common characteristics of demand, investment, partnership, or on a global basis as a way of entering the global market So smaller companies can be global.

## **Size and transitionality of global companies**

International companies have been engaged in business transactions that exceed national frameworks. These transactions include the transfer of goods, services, technology, managerial know-how and capital in other countries.

One of the possible forms of cooperation with the host country may be in the form of:

1. exports of goods and services
2. the contract of license for the production of goods in another country
3. contract management
4. joint venture with a company from the host country
5. subsidiaries and branches with production facilities in the host country

Global corporations see the whole world as one market. Locate their operations and resources in different parts of the world. Global corporations offer global products tailored to local needs, and the more difficult achieving leading positions in sales of particular products on the world level. The reason why corporations decide to become global corporations is a desire to be in conditions of strong competition to ensure the leading position in the sale of certain products in the world market.

Many corporations to decide on the application of methods of growth based on integration with other corporations to help achieve a leading position in the world market. The most common forms of entry on the local market were acquisitions (purchase some local companies in the same industry), or direct investment (through joint venture with local companies, or self-investment).

## **3. WHO ARE THE WINNERS AND WHO ARE THE LOSERS OF GLOBALIZATION?**

There is general assessment that the world as a whole should benefit from the globalization process. This profiteer is based on increasing the efficiency of the global economy, a higher rate of return on capital and expansion of world trade. In the more developed profit on account of undeveloped countries. The biggest losers of globalization are the least developed countries. They could lose 600 million dollars annually, while sub-Saharan African countries could lose, and by 1.2 billion dollars annually. The losses of these countries are the result of unequal approach to trade, finance and labor market.

To reflect a little more on the winners and losers.

The globalization is constantly saying that the poor benefit from globalization through the inflow of foreign capital in these countries. But what is not said is that it was the capital can run out from these countries and because of that country can go bankrupt. The case is in east-Asia countries, called tigers.

The market is interested in profit and we do not know the benefit of society. It is a favor the rich and technologically advanced.

Deng Xiaoping (father of four Chinese modernization) said that the truth should be sought only in the facts, but as he says, "not important whether the cat black or white, it is important to catch mice."

Nelson Mandela was asked? "Does globalization should bring benefit only to powerful and wealthy, speculators, investors and traders? Does it mean that it will not offer nothing to men, women and children on the streets? When they say that the system is unfair, they are not always wrong."

To quote Mike Moore (Director of the WTO) from the year 2000 (The Economist) "Sometimes I would join those children on the streets". When they say that the system is unfair, they are not always wrong."

We live in a world where power is very weak arguments, and arguments of force are very strong. Rich and mighty completely rule the world. They will give you only what you need to get what they want - but will give very little. Too many people believe that the ultimate selfishness virtue, that greed is virtue, that the enlightened care and compassion a weakness, and that the selflessness and sacrifice for the common good mental illness.

The paradox of globalization is more than obvious. If globalization involves the integration of all countries into a single global entity, which means free movement of labor and capital, why is it only the free movement of capital and capitalist across borders. Why is that workers, especially those unemployed, should also be able to freely cross the border and employment where there are opportunities. So capital from developed a free flow of movement in the undeveloped and developing countries, but the surplus of unemployed workers from underdeveloped countries have no freedom of movement in developed countries. Through the developed profit and underdeveloped lose.

#### **4. WHAT AND HOW TO CONTINUE?**

We must accept and welcome globalization, but we can not accept a dictate. Accept globalization process that will bring us benefit, not harm. There must be cause for careful and smart moves.

When opened by globalization, we need to take into account the fact that if we open the window of his apartment exactly that will come in fresh air, but it will come with him and also flies. Need to leave the windows open but that the grills protect flies from entering. If you open the windows and doors are run at by pack of wolves, then you may need to open windows and doors on the first floor and one on the ground floor of a good lock.

When we talk about how to engage in the process of globalization, we must bear in mind its five challenges as follows:

1. The first and most basic challenge of independent thought, thinking their own head. It's not just the globalization easy, given that the rich have so many kind people who are very happy that I can think of us and that is so agitated when their "lower" creatures like us trying to think of his head.
2. Another challenge is the challenge of truth. That's not easy to achieve if we live in a world which does not have too many facts about globalization. Not so easy to see things clearly when it is around us so that corporate giants are laughing, and so skilfully concealing his ambition to swallow us all.
3. The third challenge is the challenge of equity and justice. Specifically, how can we ensure the new world order of globalization, which is not only new, but that should be more rightness and fairer than the present. Why pressure everywhere is made one man one vote except in the IMF and the IBRD that was sacred "one dollar, one vote".

4. The fourth challenge is the challenge to get - profit. How to ensure and to overcome the current situation of globalization, expressed a strong "sasfrapançi" and nonlinearity in grabbing profits, where the deepening gap between the developed and undeveloped.

Example: 1960. The total income 20% of humanity was 30 times higher than total revenues 20% poorer population in the world. Today, with this amazing relationship that globalization is 85 times higher. It just speaks to the great concentration of wealth in a small number of the richest. Or 20% of world population in developed countries has a 83% global income, while the poorest 20% has only 1.4% of that income. UN estimated that "the property two hundred richest people in the world is bigger than the total income 41% of the population of the world." This means that the 200 richest people the world possesses assets equal the total wealth of 2.5 billion people. How many meals a day, how many clothes, how many pairs of shoes, how many houses and the like should be the fist full than two hundred people in order to survive. You do not need them much more than ordinary people, but they want more and more, and the world must satisfy their appetite.

5. The fifth challenge is to create a compassionate and caring world. This should be a world where the winner does not take all, loser and not lose everything, where a large part of the success must be on the side of strong

and competitive, but that in doing so weak and non-concurrent not have to live in hell. This means that economic efficiency may not be the only and most important goal of economic policy states. If you have millions of unemployed workers in a poor country, is it fair in the interest of economic efficiency accept automated factory products from the rich world which does not employ any of the workers. Should million unemployed starve in the interest of efficiency, which, unfortunately, used a small circle of people. If so, then the things we set will get an answer to the question whether globalization is an instrument of development of humanity as a whole, or vice versa?

## **5. LOOSERS IN UNDEVELOPED COUNTRIES LOOSE THEIR WORK, AND IN POOR COUNTRIES STARVE**

There is no wonder that the 58% of Americans against globalization.

Financial crises in East Asia has clearly shown that the global processes of the world, as we have already pointed out, produce a certain crisis situation in the economies of individual countries, but also even greater deepening of the gap between developed and undeveloped. Such a state of the situation in the world economy provides a lot of arguments anti globalist that opposing and attacking the current globalization process. From the pen of more Advisor Inter-American Development Bank, Nore Lustig, in preparing the document World Development Report for 2000/01 and warned of the alarming situation in the globalization in the sphere of deepening divide between rich and poor. Several remarks about speaking clearly. For example, GDP per head of the twenty richest countries in the world in 1960 year was 18 times higher than in 20 most poorer. The gap in 1995 increased almost 40 times. According to the information paper about the World, which was held in Rio de Janeiro 1992 warned that the world has 157 billionaires (U.S. dollars), 2 million millioners, and more than 1.1 billion people in the world with a daily income is only one dollar, or even less. In the U.S. the number of billionaires since 1992 was increased from 13 to 149 in 1996 year. Assets such as the Walton family have the same gross national income as Bangladesh with 120 million inhabitants. In the transition economies of Europe and Central Asia, the number of people living on less than one dollar a day rose to a million people in 1987 year to 24 million in 1998 year. Ethnic and racial minorities face with growing poverty in many societies, and even that does not show signs of improvement. For example, in Peru in 1994 year was 40% likely to be members of a small group be poorer than other people, and 1997 year it was 50% likely.

For many workers in the world, which affects most of the industry, past the normal working relationship has become a much weaker employment quality. For others, employment has changed in the relationship market, where workers take precarious jobs, and much less social benefits that are reflected on the workers and to society.

These and other arguments do not provide enough space to defenders of globalization. One of these is also a professor with the Massachusetts Institute of Technology in Cambridge, Paul Krugman, who is your defender attitude globalization expressed in articles published in "Slate" Magazine 20th March 1997. was entitled "In Praise of Cheap Labor: Bad Jobs at Bad Wages are better than No Jobs at All" (cheap labor for the compliment: better to have bad jobs with low wages, but no jobs). The essence of his attitude is acquittal of globalization through increased employment in the less developed countries. He pointed out that despite the fact that thick capitalist get great benefits from globalization, the biggest benefit of working-class gets third world countries. Foreign companies in these countries open up new jobs, thus the number of unemployed in these countries fall. Increased demand for employment is to increase wages (South Korea and Thailand have reached the level of salary that corresponds to the level of wages in the U.S. minor McDonalds). Krugman to evaluate the positive process and stresses that it is not realistic to ask the American multi-corporation to pay workers in Indonesia at the level of American wages, because the American level of wages the result of long-term history of successful economic development of the land. Third, as Krugman points out, we must undergo a period of economic development to the level of wages raised to the level of developed countries. This will contribute to globalization.

## **6. CONCLUSION**

Having all of these moments in mind, the countries of Southeastern Europe must understand advantages and disadvantages of globalization, its risks, but also benefit. It is as such can not be avoided. Countries must prepare and educate not only in the sense that they can cope with the dangers, but that it used to be a par with developed countries. These countries will not give anyone anything free. Bosnia and Herzegovina, and to other countries of the former Yugoslavia, may not authorize the war and over the victims of war seek compassion rich. This is not obtained, or will receive very little. For all the bad practices in the globalization must be guilty of the most

sought in yourself, and not to cause such search in conspiracy international community, "or God is to star in order to justify religious fanatics.

Education and economy in the development, where we belong, must be very seriously analyzed and observed the process of globalization in all aspects. We must be aware of the fact that the majority decision of the international plan protects the interests of more mature economy, regardless of the sovereignty, economic freedom, economic strengthening, socio-economic programs and plans of the technological development of underdeveloped and developing countries. The only real output for these countries in this process is wisely partnership in which we will jointly determine which a common problem is, create unique views and take in the joint action. So, be active in the globalization, where the joint can resist negative impact of globalization on the local economy. A favor and apply the positive values and reflections of globalization. It is our fate. Therefore, it is not accidental that it is the top issue on the 18th World Congress of the international confederation of free trade unions which was held in 2004 year.

Therefore, the world trade union movement must adapt as quickly as possible the process of globalization, creating a strong international trade union associations, with a unique database of information and data, which will exchange and negotiating teams to be strong and personnel enter into partnership with the multinational, transnational and global corporations and companies, with At the same time protect the interests of workers throughout the world, and the harmonization of the work and payment of their work and their leveling protection.

In these goals must be to the new book and the International Labor Organization (ILO), whose resolution and the Convention is necessary to actualize and adjust progressive processes of globalization.

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## **CONTAINER TERMINAL MODELING BY COMPUTER SIMULATION METHODOLOGY**

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***Summary:** This paper discusses a computer simulation methodology of container terminal modeling. The simulation models for container terminal are developed from the viewpoint of a public terminal operator as well as a private terminal operator. Implementation of the presented procedure leads to the creation of a simulation algorithm that captures container terminal performance well.*

***Keywords:** Container terminal modeling, Computer simulation, Literature review*

### **1. INTRODUCTION**

Simulation modeling technique is widely used in the analysis of port and terminal planning process and container handling system. It is also used as an important tool for decision-making in planning a ship-berth linkage design and modeling. Keeping an optimal balance between the shipping companies who demand a speedy service for their ships and the economic use of resources is a very critical task in the terminal operation. Owing to the enormous costs caused by container ship's waiting and the use of the container terminal's facilities, it is desirable to maximize the degree of utilization in a short time. However, the most significant problem in the analytical modeling of a container terminal is lack of accuracy and flexibility, and because of this, the simplification of actual cases is generally being used. Meanwhile, simulation modeling is far more useful than an analytical model. In particular, simulation modeling is suitable for the complex environment of a container terminal, which requires various criteria and scenarios.

This paper is organized as follows. In Section 2 we review the related literature and discuss main topics and problems analyzed in the literature. Section 3 deals with the models for the modeling of terminal processes by using simulation. Section 4 presents simulation model development. The conclusions are given in Section 5.

### **2. LITERATURE REVIEW**

Simulation models have been used extensively in the modeling, planning and analysis of container terminals in port. Many different simulation models regarding port operation, especially container terminals modeling and planning, have been developed in papers which are explained below. These models are coded in different simulation languages. In addition, Kozan (1997) gives a review on recent analytical and simulation models.

Tugcu (1983) used a port simulation model to aid investment planning for the Istanbul seaport. El Sheikh et al. (1987) developed a simulation model to help the planning of future berth requirements of a third-world port. Chung, Randhawa, and McDowell (1988) proposed a method that uses buffer space to reduce container loading times and optimize equipment utilization, and a simulation was developed to justify their method. Silberholz, Golden, and Baker (1991) employed simulation to study the impact of work crew schedules on container port productivity. Hassan (1993) presented a simulation to be used as a decision support tool for evaluating and improving port activities. Ballis and Abacoumkin (1996) developed a simulation with animation to simulate the



operational activities of a container terminal with straddle carriers. Ramani (1996) developed a simulation to support the logistics planning of seaports. The simulation provided estimates of port performance indicators such as berth occupancy, ship output and ship turnaround times for various strategies. Merkurjev et al. (1998) used simulation to improve logistics processes at Riga Harbour Container Terminal. Merkurjeva et al. (2000) considered simulation of containers processed at the Baltic Container Terminal in Riga as a basic simulation research, and then its complementing by a metamodeling study is discussed. Nevins et al. (1998) simulated the operations of a seaport, and provided detailed statistics on seaport throughput and resource utilization. Gambardella, Rizzoli, and Zaffalon (1998) developed models of an intermodal container terminal to aid container allocation in the terminal yard, resource allocation and operations scheduling. Thiers and Janssens (1998) used a port simulation model to investigate the hindrance of a river quay. Bruzzone and Signorile (1998) employed genetic algorithms and simulation to make strategic decisions about resource allocation and terminal organization. Yun and Choi (1999) proposed a container terminal simulation model using an object-oriented approach. Gambradela et al. (2001) presented a solution to the problems of resource allocation and scheduling of loading and unloading operations in a container terminal. Legato and Mazza (2001) focused on the berth and allocation of berths to arriving ships with queueing network based on the model which is simulated by Visual SLAM software in various scenarios. Their model was tested with data from Gioia Tauro container terminal. Key issues of the application of modeling and simulation for the management of the Malaysian Kelang container terminal are discussed in paper by Tahar and Hussain (2000). Nam et al. (2002) examined the optimal size of the Gamman Container Terminal in Pusan, in terms of berths and quay cranes using the simulation analyses which were performed in four scenarios, representing different operational patterns. Shabayek and Yeung developed simulation model employing the Witness program to analyze the Hong Kong's Kwai Chung container terminal performance. It is shown to provide good results in predicting the actual operation system of the terminal. Kia et al. (2002) investigated the role of computer simulation in evaluating the container terminal performance in relation to its handling techniques and their impact on the capacity of terminal. Pachakis and Kiremidjian (2003) presented a ship traffic modeling methodology based on statistical analysis of container ship traffic and cargo data obtained from a port in the United States. Sgouridies et al. (2003) focused on the simulated handling of incoming containers. Lee et al. (2003) presented the modelling and analysis of the dynamics of business processes and interaction between business entities in a supply chain with multiple objectives. The simulation approach serves two purposes: to model a supply-chain network in quantity approach and to evaluate its supply-chain performance based on proposed strategies. Results on the service level, i.e., service times, utilization factor, and queues, are generated for analysis. Demirci (2003) developed simulation model to analyze port operations and was run especially for investment planning. This paper discussed the simulation model results of Trabzon port. Dahal et al. (2003) developed a genetic algorithm based approach to provide an optimization capability to the port simulation tool. Two case studies based on real world port systems are presented and the results are discussed. Martinez et al. (2004) presented simulation model and modeling approach to the transfer of cargo between trains and rail terminals. Hartmann (2004) introduced an approach for generating scenarios of sea port container terminals. This scenario can be used as input data for simulation models. In this paper, the generator discussed has been developed within the simulation project at the HHLA Container Terminal Altenwerder in Hamburg. Yang et al. (2004) described and developed a simulation model of an Automated Container Terminals with perpendicular layout. From the results of the simulation analysis, they determined the savings effect by cycle time and the required number of vehicles. Bielli et al. (2005) proposed simulation model which can improve ports efficiency and they gave the architecture components that are implemented with Java. Simulator calibration and validation were also presented in the paper at the Casablanca container terminal. van Renzburg et al. (2005) described a computer simulation model of ocean container carrier operations. Their simulation is called SimSea. Ali Alattar et al. (2006) simulated different condition to find out the queue of containers at the port and also analyses the effect of increase in the facilities at the port to reduce this queue. Dragović et al. (2005a) gave the simulation model results for ship berth link of the Pusan East Container Terminal (PECT). They developed simulation model which can be used by the port management to improve different operations included in the process of ship service at the ship-berth link. Dragović et al. (2005b) developed simulation models of ship-berth link with priority service in container port. The ship berth-link performance for five alternative strategies was evaluated, and system behavior observed. The results revealed that simulation modeling is a very effective method to examine the impact of introducing priority, for certain class of ships, on the ship-berth link performance at PECT. In order to determine the performance evaluation of ship-berth-CY link in port Dragović et al. (2006a,b,c) proposed two models based on simulation and queueing theory, respectively. Numerical results and computational experiments were reported to evaluate the efficiency of the models for PECT. Park et al. (2006) developed a simulation model to calculate optimal throughput of a quay by port type and determine terminal performance. It is shown to provide good results in predicting the actual terminal operations system of the Korean container port. Ng and Wong (2006) developed a simulation model for studying the impact of the vessel-traffic interference in Hong Kong's terminal basin on its container terminals' capacities. Ottjes et al. (2006) proposed a generic simulation model structure for the design and

evaluation of multiterminal systems for container handling. Kozan (2006) developed an analytically based simulation model to investigate delays of trains for different service configurations. Simulation outputs are used to find an optimum balance of the cost of train delays and variation from the desired level of service. Canonaco et al. (2008) focused on the optimal management of container discharge/loading at any given berthing point, within a real maritime terminal. Due to its complexity, discrete-event simulation appears as the most appropriate approach to model solution. Petering and Murty (2008) investigated how two parameters - (1) the length of the storage blocks in a terminal's container yard and (2) the system that deploys yard cranes among blocks in the same zone - affect the overall, long-run performance of a seaport container terminal as measured in terms of GCR (i.e. average quay crane work rate). Toward this end, the authors constructed a discrete event simulation model of terminal operations that was designed to reproduce the multi-objective, stochastic, real-time environment at a multiple-berth facility. Petering et al. (2008) developed a real-time yard crane control system and show that a terminal's long-run average quay crane rate depends on the portion of this system that dispatches yard cranes in the storage area in real time.

### 3. SIMULATION MODELING

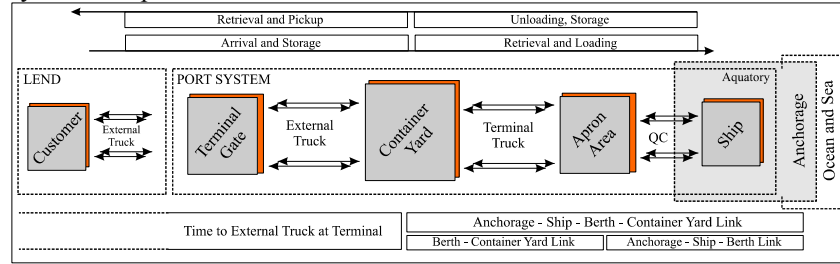
Most container terminal systems are sufficiently complex to warrant simulation analysis to determine systems performance. The different simulation languages, specifically designed for the simulation of manufacturing and queueing systems, have been used for container terminal modeling.

In order to present the container terminal modeling as accurate as possible the following phases need to be included into simulation model (Dragović et al. 2005a,b and 2006a,b,c):

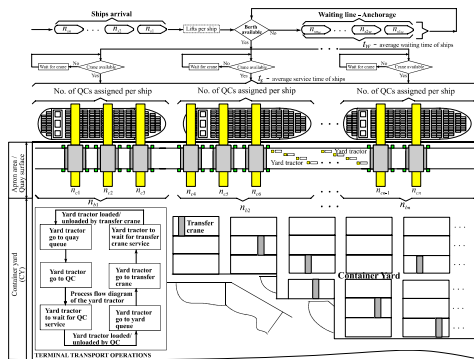
- **Model structure:** container terminal is complex due to different interarrival times of ships, different dimensions of ships, multiple quays and berths, different capabilities of QCs (quay crane) and so on. The modeling of these systems must be divided into several segments, each of which has its own specific input parameters. These segments are closely connected with the stages of ship service (Figures 1, 2, 3; and Figures 4 and 5).
- **Data collection:** All input values of parameters within each segment are based on data collected in the context of this research. The main input data consists of ship interarrival times, lifts per ship, number of allocated QCs per ship call, and QC productivity. Existing input data are subsequently aggregated and analyzed so that an accurate simulation algorithm is created in order to evaluate ship-berth-yard link parameters.
- **Inter-arrival times of ships:** The inter-arrival time distribution is a basic input parameter that has to be assumed or inferred from observed data. The most commonly assumed distributions in literature are the exponential distribution (Demirci 2003; Pachakis and Kiremidjian 2003; Yamada et al. 2003; Dragović et al. 2006a,b); the negative exponential distribution (Shabayek and Yeung 2002) or the Weibull distribution (Tahar and Hussain 2000; Dragović et al. 2005a,b).
- **Loading and unloading stage:** Accurate representation of number of lifts per ship call is one of the basic tasks of ship-berth link modeling procedure. It means that, in accordance with the division of ships in different classes, the distribution corresponding to those classes has to be determined.
- **Number of QCs per ship:** The data available on the use of QCs in ship-berth link operations have to be considered too, as this is another significant issue in the service of ships. This is especially important as total ship service time depends not only on the number of lifts but also on the number of QCs allocated per ship. Different rules and relationships can be used in order to determinate adequate number of QCs per ship. On the other hand, in simulation models, it is enough to determine the probability distribution of various numbers of QCs assigned per ship.
- **Flowchart:** Upon arrival, a ship needs to be assigned a berth along the quay. The objective of berth allocation is to assign the ship to an optimum position, while minimizing costs, such as berth resources (Frankel 1987). After the input parameter is read, simulation starts by generating ship arrivals according to the stipulated distribution. Next, the ship size is determined from an empirical distribution. Then, the priority of the ship is assigned depending on its size. The ship size is important for making the ship service priority strategies. For the assumed number of lifts per ship to be processed, the number of QCs to be requested is chosen from empirical distribution. If there is no ship in the queue, the available berths are allocated to each arriving ship. In other cases ships are put in queue. The first come first served principle is employed for the ships without priority and ships from the same class with priority. After berthing, a ship is assigned the requested number of QCs. In case all QCs are busy, the ship is put in queue for QCs. Finally, after completion of the loading and unloading process, the ship leaves the port. This procedure is presented in the algorithms shown in Figures 2 and 3.

In order to calculate the ship-berth-yard performance, it is essential to have a through understanding of the most important elements in a port system including ship berthing/unberthing, crane allocation per ship, yard tractor allocation to a container and crane allocation in stacking area. As described in Figure 2 - process flow

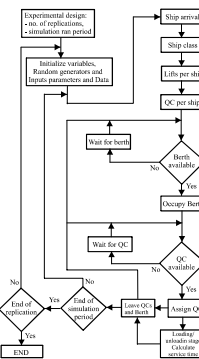
diagram of the terminal transport operations, the scope of simulation, strategy and initial value and performance measure will have to be defined. In addition, the operational aspect such as machine failures having a direct impact on ship, crane and vehicle will have to be considered. To move containers from apron to stacking area, different transfer systems are provided for each container crane.



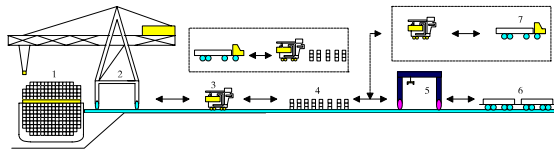
**Fig. 1.** Import/Export containers take a number of short trips in traveling from containerships to their eventual recipients/loading, with specialized equipment handling each trip (see Figures 4 and 5)



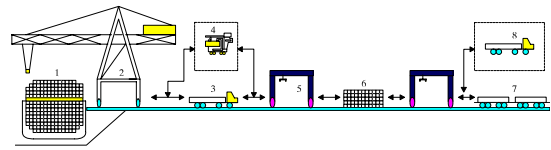
**Fig. 2.** Port operation with ship movement in port and terminal transport operations



**Fig. 3.** Flowchart for a ship arrival/departure



**Fig. 4.** Flow of inbound/outbound containers  
(1-Container ship; 2-QC; 3-Straddle carrier; 4-CY; 5-RTG;  
6-Land carriers; 7-Terminal/land truck)



**Fig. 5.** Flow of inbound/outbound containers  
(1-Container ship; 2-QC; 3/8 Terminal/land truck; 4-Straddle carrier; 5-RTG;  
6-CY; 7- Land carriers)

## 4. SIMULATION MODELS DEVELOPMENT

The simulation method has been based on the generally accepted standards, and additional questionnaires have been made for the classification of port type and derivation of productivity and service related indices. Also, the tests for the validity have been conducted. After the proof tests, simulation has repeatedly performed according to the experimental plan.

### (1) Berth Modeling-related Variables

The number of ship berthing, ship arrival distribution, the ship size, and LPC (Lift per Call) in port are influencing not only the calculation of an optimal throughput of a container terminal, but also the berth occupancy and ships' waiting time. The ships' waiting time is an important parameter, which reveals the service level of a terminal. As illustrated in the Table 1, the major factors determining the berth productivity are: the berth occupancy, ships' waiting time, ships' arrival frequency, LPC, the capacity of QC and quay QCs assignment.

**Table 1:** Major factors related to the berth service and productivity

Section	Major factor	Remarks
Ship	Ratio of ship's waiting time	The ratio of ship service time to ship's waiting time for berthing
	LPC ratio	The number of container loading and unloading in a specified terminal
	Ship arrival time distribution	The number of inbound and outbound ships and their arrival time distribution
Berth	Berth occupancy ratio	The ratio of berth service time to the total available time.
QC	QC assignment	The number of QCs per ship based on the LPC
	QC handling unit per hour	QC productivity per hour
YT	YT transfer productivity	The turnover of transfer equipment

## (2) CY Modeling-related Variables

The capacity of CY is closely related to the size of CY, the mutual relationship among CY cranes, yard truck (YT), external trucks and container turnover, see Table 2. The small size of CY can intensify the traffic congestion, causing reloading, lowering the productivity of CY cranes and eventually delaying the container handling of both external trucks and YT.

**Table 2.** Major factors related to the CY service and productivity

Section	Major factor	Remarks
TC	The input number of TC	The input number of the yard crane
	Handling capacity per hour	The productivity of the yard crane
CY	The size of CY	CY area
Storage period	Storage period	Storage period by cargo type
External truck	Turnaround time	The turnaround time from container input to container output passing through the terminal gate
Input/ output pattern	Input/output pattern distribution	The input/output pattern distribution of containers

### Quay Simulation Model

For the calculation of container terminal performance, first of all, the simulation model for berth performance analysis is to be made. This simulation model is based on the actual data collected from terminal, including ships' arrival time distribution, LPC distribution of ships, the number of assigned QCs and its productivity. The analysis and application of real data makes it possible to prove the validity of this model, also revealing the reality of current terminal operation, and eventually presenting the useful data for the policy making for port development.

The simulation model can present a more practical way of calculating berth performance, suggesting more diverse evaluation indicators and making it possible to check up the quality aspect of services of the container terminal. The QC assignment by ship has to be made at the time of berthing and unberthing of a ship. How many QCs has to be assigned to the berthing ship? How to reassign the QCs used for unberthing ship? Now let's take a look at the determination process of berthing location in the following:

Flow of quay simulation model:

Ship arrival
LPC by ship
Berth allocation
C/C assignment by berth
Loading and unloading → CY allocation
Ship departure

Determination process of berthing location:

Seeking available space for berthing
Is there any available space?      Waiting at the anchoring basin
C/C assignment calculation
Number of idle C/C at the available space
C/C assignment and work performance

### CY Simulation Model

The simulation model for analyzing CY performance has been made on the following assumptions: Loading/unloading productivity per hour is constant; Loading/unloading is to be performed in the order of unloading of import cargo, unloading of transshipment cargo, loading of export cargo, and loading of transshipment cargo; The carrying out of import cargo is to be made after the loading of transshipment cargo is over; All import and export cargoes are to be loaded, unloaded, carried out, and carried in during the free storage period and All the unloaded transshipment cargoes are to be loaded in a uniform basis on the ships arriving during the free storage period.

### Integration of Berth Simulation and CY Simulation

To develop an integrated simulation model linking berth and CY, the following processes are to be performed: Classification of port type according to the features of each port; Select the port type on the initial screen; Initial figures can be changed, if necessary; Berth simulation performance by port type (initial data production); The throughput derived from berth simulation is linked to the CY simulation; CY simulation is to be performed for one month in order to set up an initial environment; Based on the annual distribution of input/output of containers and storage period distribution, both of which are derived from CY simulation, CY occupancy is to be calculated; When the optimal CY occupancy reaches 60% on the basis of derived CY occupancy, the handling volume is to be calculated; and The sensitivity analysis of major factors is to produce diverse outputs.

### Outputs and Utilization of Outputs

The outputs derived from the integrated simulations can be used for a variety of purposes: Annual throughput calculation based on the berth factors; CY density calculation based on the CY factors; Hindrance to stevedoring performance coming from CY density; and Stevedoring performance according to the service level (berth occupancy, throughput of QC per hour, CY utilization and ships' waiting time).

## 5. CONCLUSIONS

The simulation models can be used as a decision support tool for analyzing and evaluating terminal performance by the port management. This approach allows different models of use of available facilities to be incorporated, and it facilitates the ship arrival patterns, lifts per ship call, number of QCs assigned and QC productivity as actual data. These models can be used: to estimate the improvements in performance of the terminal operations when their handling capacities vary; for average cost analysis, as the simulation provides six important parameters, i.e., average service time of ships in port, average arrival rates of ships, the number of QCs/berth, QC productivity, the degree of utilization and traffic intensity of container terminal, which are needed to establish average cost effective system; and in the planning for future additional QCs/berth and berths/terminal that may be needed, through the use of forecasted average interarrival time of ships.

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## **GLOBALIZATION CHALLENGES OF INDUSTRIAL DEVELOPMENT: UKRAINIAN CASE**

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**Summary:** Attention is accented on the economic aspects of civilization structure of modern world. A place and state of industry is analyzed in new economy, prognoses of world and domestic economic development on the sign of recurrence and change of structure of economy (for Ukraine and Yugoslavia). It is marked on the key role of technologies in the economy growing of country. Tendencies are described in forming of industrial complex of Ukraine, development of food retail industry and high tech industry. Measures are examined for successful development and realization of industrial strategy of the state.

**Key words:** globalization changes, new economy, industrial complex, industrial and trade partners, high tech industry

### **1. INTRODUCTION**

Ukraine occupies the 73d place among 131 countries in rating of global competitiveness of the states 2007-2008 (GCI). It has been removed four steps downward in comparison with the previous year. If in 1991 Ukraine took the 45th place in the world rating, in 2005 the country attained the 78th step among 176 countries. Today, the level of most constituents of index of sustainable development in Ukraine is on verge of criticism. Among them are insignificant volume GDP per capita, largeness of national debt, low level of quality of life of population, proof tendency of reduction of it quantity, outflow for the border of millions of citizens of mainly capable of working age, at thereby intellectual potential, uneffective use of natural supplies, sharpening of ecological problems, permanent technogenic catastrophes.

Rapid adaptation of economy of country to the changes in the conditions of globalization is the indicator of its competitiveness. By basic motive force of the economy growing industry in which prevail mid- and hi-tech productions over low-tech is developed.

The economy of the country is characterized by essential disproportions. A considerable part in its structure belongs to resource-, energy- and labour-intensiveness productions. Redevelopment of domestic market, low competitiveness of national production, diminishing of state administration of economy, of its industrial complex worsens the strategic prospects of development, makes the entrance of Ukraine into the number of highly developed countries more complicated. Strengthening of global competition next to the loss of considerable world markets share by domestic enterprises creates the considerable obstacles on the way of the use by them present possibilities of development. In this situation of the special value questions acquire in relation to the optimum structure of economy, processes of competition and monopolization, to the concentration for the increase of competitiveness.

The theoretical, methodological and practical works of researchers and managers, which are directed on Ukraine's taking the deserving place in European and world economic community, acquire the special value in this situation.

#### **1.1. Relevance and research purpose**

The purpose of the publication consists in the improvement of methodological approaches to the development and realization of development strategy of industrial complex of Ukraine in the conditions of integration of national economies in unique globalization world system.

The works of such famous scientists are used in the process of research on the problem of theory and practice of forming and increase of competitiveness of industrial complex of Ukraine: O.M. Alimov, U.M. Bazhal, L.K. Beschasiy, M.H. Bunge, S.V. Valdaitsev, V.M. Geits, J. K. Galbraith, V.V. Gluhov, O.P. Gradov, I.U. Egorov, B.E. Kvasnuk, K. Kelly, U. Kindzerskiy, B.A. Malitskiy, S.V. Mocherniy, U.M. Pahomov, O.S. Popovych, V.P. Solovyov, F.E. Udalov, L.I. Fedulova, M. J. Habakuk and others.

## **1.2. Research methodic**

The methodological and theoretical basis of scientific research are the dialectical method of cognition of truth, principles of systems analysis, methods of statistical processing and analysis of information, modeling, fundamental positions of such scientific disciplines as economic theory, history of economic studies, innovation and investment management, theory of market economy, globalization, domestic legal base of functioning and development of industrial complex, the publications of structural subdivisions of EU, UNO, researches of domestic and foreign authors in the sphere of scientific search.

## **2. INDUSTRIAL COMPLEX IN THE CONDITIONS OF NEW ECONOMY AND CIVILIZATIONS CHANGES**

New economy can be defined as an economy that is based on hi-tech branches of production, or as influence of high technologies on the economic surroundings that leads to considerable changes of separate macroeconomic indexes [1, 2]. K. Kelly [3] determines the following basic lines of new economy: increase of value of connections between the enterprises; flexibility of transactions; growths of utility of widespread values in comparison with deficit ones; improvement of market mechanism. We consider diminishing of technical barriers for entering of a company into the world market simultaneously with the growth of dependence and monopolization of markets by multinational corporations to be the main feature of new economy.

Forming of new economy in the world is caused by civilizations changes which took place during XX - beginning XXI centuries. Dynamic, complexity, contradiction of processes, which take place in new economy, require the perception, generalization, explanation, from the position of structure, logical organization, methods and means of activity. At the same time, from our point of view, it's necessary to take advantage of results of scientific researches over the problems of the modern world's civilization structure, the analysis of each its element, interdependence and interimpact between these elements. The line of publications of researchers from Institute of world economy and international relations of National Academy of Science of Ukraine under the direction of the academician U. Pakhomov [4, 5] can be considered to be the detailed works on the problems and prospects of development of the world civilizations.

The civilization structure of the modern world is examined in two measuring. In the first case its analysis is carried out from the position of conception "world is systems". This conception foresees the selection of "world-system core" – group of the most developed countries, "semiperiphery" - countries of middle developed and "periphery" - poor and economically backward agrarian-primary countries with low and even negative indexes of development rates. The first group which belongs to the so-called "gold milliard" went out on the level of informative society, society of knowledge, the second one - remains on the stage of industrial development, that characterizes the leading countries of the beginning of XIX- the middle of XX century, and the third ones - partly are positioned on the primitive industrial stage.

The second measuring of civilization structure of the modern world is determined by configuration, co-operation, development rates and prospects of separate civilizations and civilizations worlds. Growing actuality of civilization concerns is determined by three moments: conceptual, political and economic ones. The economic aspect of actualization of researches in the field of civilization theory is defined by the fact that in the modern world countries which have found the optimum forms of combination of their traditional sociocultural system with the newest productive achievements in scientific and technological sphere achieve success. In cases of mechanical transference of western principles of economy to foreign basis and without understanding of own specificity and ignoring of local traditions the result of market reforms, usually, was degradation of production, social sphere and quality of life.

During studying of configuration and transformation of civilization structure of the modern world it's necessary to realize that sources of successes and failures are connected not only with the most progressive technologies, financial mechanisms or military alliances, but also with the system of moral values. Exactly the moral and ancient traditions must restrain hypertrophied and dangerous submission that life sense consists not in spiritual improvement, but in unrestrained material improvement only. The "market" must be related to not to the spiritual values, but to the economy and economic relations.

We consider globalization processes which have deep historical roots and are stormily proved on the fracture of the last millenniums to be the second reason of appearance of new economy (crash of the Berlin wall,



disintegration of the USSR, SFRY, military actions in Afghanistan, Iraq, Middle East and some African countries, forming of the European Community, swift growth of economic potential of countries of BRIC (Brazil, Russia, India, China), war in Iraq, energy and financial and currency crises, expansion of scales of shadow economy, demonstration of terrorism, piracy etc.). From one side, globalization is the objective phenomenon which is mutated during the last ten millenniums. On the other hand, globalization is associated with the aggressive actions of the countries, leading on the world economic arena (mainly USA, Western Europe, Japan), their affiliated international financial institutions and multinational corporations (MNC). This pressure is performed through information, economic, military-political key factors and due to the countries of the world's "semiperiphery" and "periphery". According to the third Newton's law any pressure, any action causes counteraction. That's why the wave of antiglobalization protests arises in a counterbalance to the processes of globalization. The great distribution is acquired by the processes of regionalization– EU, MERCOSUR, Islam conference, League of the Arabic countries, the CIS and euroregions – Donauländer (Slovak R., Ukraine, Bulgaria, Serbia and Montenegro, Croatia), Nis - Skopje - Sofia (EuroBalkans) (Bulgaria, Macedonia, Serbia and Montenegro), Drina - Sava - Majevisa (Serbia and Montenegro, Bosnia and Herzegovina) [6].

The accelerations of globalization processes and formation of new postindustrial societies are directly connected with the high-quality changes in development of the world industrial production and its redistribution in territorial proportions. The portion of value added, that is created on the stage of development and advancement of new product to the market, is much greater than the portion from direct production. At the same time a characteristic feature of new economy is implementation of the innovative-commercial stages of creation of product in the developed countries, and the stages of production - in countries which develop [7].

The tendency of the world economy in last half of the century is the change of gross product's structure in the direction of excess of services capacity above the production volume of commodities in the value term. In Ukraine the considerable falling of industry and construction share, increase of consumption sphere during 15 years - are the extraordinarily significant changes from positions of economy, policy, psychology of population, science, education.

However, the industry share is growing up (table 2 [8, 9, 10]) and the share of trade, restaurant and hotel business in structures of GDP (table 3 [8, 9, 10]) is decreasing in the developed countries.

**Table 1: GDP structure of EU countries, USA, Japan and Russia, %**

Countries	Agriculture		Manufacturing		Services			
					GDP		Employment	
	1994	2004	1994	2004	1994	2004	1995	2005
UK	1.7	1.0	30.6	24.3	67.7	74.7	70.7	76.5
Germany	1.2	1.1	32.9	29.1	65.9	69.8	60.5	67.6
Italy	3.3	2.5	30.1	27.3	66.6	70.2	59.2	64.6
Norway	3.0	1.5	32.9	39.2	64.1	59.2	71.4	75.8
USA	1.9	1.3	26.4	22.2	71.7	76.7	73.1	78.6
France	3.3	2.5	24.7	21.3	73.1	76.3	69.1	73.5
Sweden	2.7	1.8	28.7	27.7	68.7	70.5	71.0	76.0
Japan	2.1	1.6	33.9	29.0	64.0	69.4	60.8	67.6
Hungary	6.4	3.9	30.0	30.9	63.7	65.2	58.2	62.2
Poland	6.4	2.9	36.2	32.1	57.4	65.0	45.4	53.4
Czech R.	4.9	3.3	38.8	37.9	56.1	58.8	51.1	56.4
Russia	6.2	5.8	42.5	35.2	53.5	59.0	49.7	60.6

The share of the hi-tech modes in domestic goods production is insignificant, while low tech modes are prevailing. The Ukrainian economy has such tendencies: 1) growth of general manufacturing takes place owing to the 3d and 4th technological modes (95 %); 2) food industry grows with the greatest rates; 3) high growth rates of low tech, raw materials and semi-finished branches, products of which are the main components in the country export. By the OECD data the industries' share division for developing countries characterized the following indexes of investments in a period from 1990 to 2007: power production - 15 %, production of hi-tech - 12 %, extractive industries - 19 %, telecommunication - 16 %, financial services - 12 %, consumers goods and services - 9 %, other - 17 %. The perspective structure of industries in the world is: machine building (40 % of all products), chemical industry (over 15 %), food retail industry (14 %), light industry (9 %), metallurgy (7 %).

**Table 2:** Dynamics of share of branch structure of services in the countries of EU, USA, Japan and Russia, %

Country	Specific share of large branch groups of services in GDP, %									
	Trade, feed, hotel business		Transport, connection, ware-house economy		Finances, insurance, real estate, business services		Education, health protection, social service		Services of the state	
	1994	2004	1994	2004	1994	2004	1994	2004	1994	2004
UK	14.0	15.0	7.8	7.2	24.0	30.0	15.1	16.7	6.3	4.9
Germany	12.2	12.4	5.7	5.6	26.0	29.1	14.9	16.4	6.8	6.0
Italy	17.1	15.5	6.5	7.7	21.8	26.6	13.3	13.1	6.4	6.4
Norway	12.1	10.3	10.5	8.8	18.8	20.6	16.5	17.5	6.1	5.0
USA	17.7	15.4	6.7	6.1	27.0	32.4	11.4	15.8	8.0	7.5
France	13.3	13.1	6.7	6.3	27.9	31.4	14.3	17.3	8.4	7.6
Sweden	12.3	12.1	8.1	8.2	21.4	24.4	18.5	21.0	6.4	5.5
Japan	14.0	12.7	6.4	6.8	15.9	18.2	15.0	17.4	4.9	5.5
Hungary	20.1	20.7	6.4	7.7	11.0	16.4	12.3	13.1	7.1	7.1
Poland	14.1	14.5	10.4	15.9	15.9	16.3	10.1	11.1	5.0	6.0
Czech R.	13.3	12.6	8.8	8.1	17.7	20.7	14.5	14.5	7.5	9.4
Russia	18.4	22.0	9.9	8.7	5.8	12.0	7.4	6.2	6.7	10.4

### 3. CYCLICITY AND STRUCTURAL CHANGES FACTORS OF ECONOMY GROWTH: UKRAINE AND EUROPE

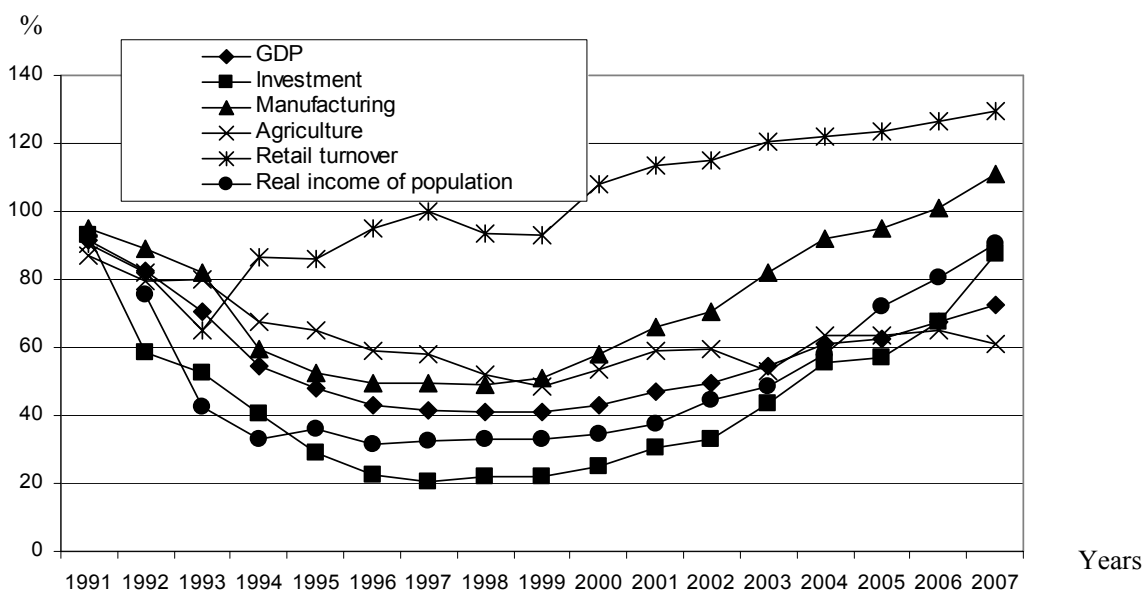
The impact (positive and negative) of economic association will grow with strengthening of integration of economy of Ukraine to global and regional economic groups.

**Table 3:** Prospect of world economic development by the groups of countries

Years	Developed countries	Developing countries	Transition economy countries	Total
Population, mln. inh.				
2000	861,1	4767,2	409,9	6038,2
2025	940,0	6390,0	410,0	7740,0
2050	990,0	7150,0	410,0	8550,0
GDP per capita (PPP) in the prices of 2000, thsd. USD				
2000	28,9	3,7	6,5	7,5
2025	57,8	10,7	22,0	17,0
2050	87,5	22,4	40,8	30,8
GDP (PPP) in the prices of 2000, trln. USD				
2000	24,9	18,0	2,7	45,6
2025	54,3	68,0	9,0	131,3
2050	86,6	160,0	16,7	263,3

The rates of changes in the world economy have wavy and cyclic character in the protracted prospect. The most applied method of economic development prognosis is extrapolation method which supposes that the future will become prolongation of the past. However, the exactness of estimations of extrapolation method can not be high in the conditions of instability of situation at the market, risks in political, financial and other spheres. Analyzing the retrospective estimation of average annual growth rates of the world gross product for the last 30 years of the XX century shows that the benchmark characterizes the estimations of progress trends as understated. The estimations of rates of future development for the developed countries were the proper (table 3 [11]).

Presence of undulating effects of economic development of the developed countries of the world (middle cycle – 7-11 years, long - about 50-60 years), research of such known scientists as C. Juglar [11], J. Schumpeter, A. Schmittgof, S. Kuznetz, G. Mensch, A. Kleinknecht, J. van Daine, M. Tugan-Baranovskiy, M. Kondratiev and others [12] give basis to apply the theory of cycles in the analysis of domestic economy.



**Figure 1:** Dynamic of macroeconomic indexes of Ukraine during 1991-2007 as % for the previous year (in 1990 – 100 %)

The economic progress trends analysis of Ukraine (fig. 1 [13]) can help to come to the conclusion, that the period from 1990 year in Ukraine by the J. Schumpeter phases' classification was the period of depression caused by transformations processes in the economy. The sustainable development, in our opinion, must start in 2012-2015.

The question is about the sector of the national economy related to production of the manufactured goods and grant of productions services. Certain tendencies are traced in the change of structure of GDP. Share of industry in GDP of Ukraine for the period of 1985-2007 diminished from 41,4 to 31,0 %, agriculture - from 19,4 to 9,0 %, building - from 8,5 to 5,4 %; transport and connection share was increased - from 6,3 to 14,6 % and trade, logistical support and raw materials - from 6,0 to 27,2 %. The change of structure of GDP by the basic sectors of economy also expressive in Yugoslavia (table 5).

**Table 4:** Structure of gross domestic product in Ukraine in 1985-2007, % (used data from [14, 15, 16, 17, 18])

Economy branches	Years						
	1985	1990	1993	2003	2004	2005	2007
GDP, total	100	100	100	100	100	100	100
Including:							
Industry	41,4	35,9	43,6	30,4	28,5	28,2	31,0
Agriculture	19,4	24,0	14,2	12,2	11,9	10,9	9,0
Civil Engineering	8,5	7,7	9,8	4,3	4,6	4,7	5,4
Transport and communication	6,3	6,1	8,8	14,7	13,7	13,9	14,6
Trade, raw material supply	6,0	5,7	6,3	19,5	23,8	24,7	27,2
Others	18,4	20,6	17,3	19,0	18,2	17,6	12,8

**Table 5:** Change of structure GDP after the sectors of economy of Yugoslavia [19, 20]

Years	1990	1999	2004	2005
Economy sectors (% GDP)				
GDP growth, %	-	-15,7	8,8	6
Industry	42,5	35,8	36,4	32,3
Agriculture	18,2	26,5	18,6	16
Services	39,3	37,7	45	51,7

The analysis of the economies of EU countries characterizes them as countries with the developed industry. A branch structure of the world industry remains progressive: machine building (40 % of all products), chemical industry (over 15 %), food industry (14 %), light industry (9 %), metallurgy (7 %). It's clear, that an industrial complex on the basis of structure, productivity and efficiency is on a few steps higher in the countries of EU than in Ukraine, remaining major industry of financial production (table 6).

**Table 6:** Share of industries of industry at GDP world countries [20, p. 333]

Industries	Share of industries at GDP, %		
	Ukraine	Developed EU countries	World on the whole
Machine building	13,1	34,3	29,1
Metallurgy	28,2	6,9	6,9
Chemical industry	5,9	11,6	11,2
Light industry	1,6	6,5	7,8
Food retail industry	16,1	9,1	10,7
Other industries	35,1	31,6	34,3

#### 4. CHANGES IN REALIZATION OF INDUSTRIAL AND TRADE POLICY OF UKRAINE

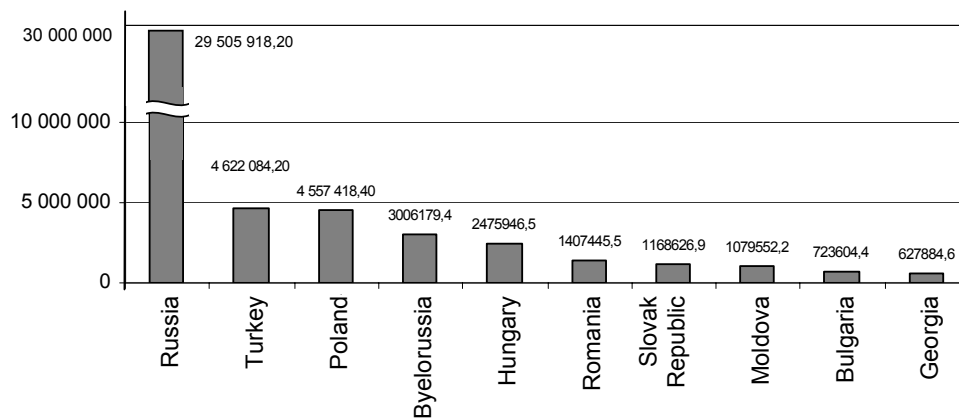
Transformation of industrial policy in Ukraine on the basis of classic liberal conception of the ideal competition formulated by theorists of times of early capitalism, the purpose of which is overcoming of high level of monopolization of Ukrainian production and increase of its competitiveness, led to breaking up large industrial associations into smaller units and displacement of accents from support of large business to support of middle and small business. In particular, similar conclusions are carried out by J.K. Galbraith [22] for other countries over the estimation of competitiveness of economies on the basis of conception of ideal competition: domination of shallow firms at the market and liquidation of large ones means the refusal from technical progress. As a after-effect of the noted policy of governments of Ukraine predominance of the combined negative effect from the break technological and economic connections of large industrial associations became obviously higher than the expected effect from demonopolization of industry, because it caused growing of production price and unprofitableness, became the reason of stimulation of inflationary processes by rising of financial resources' price, by frequent predominance of financial, point-of-sale-intermediary sectors above the real sector of economy through the increase of profitability in the first sectors and diminishing of profitability in production, which took place in the first half - middle of 90th of XX century. In the western European countries competition was transformed in integration, co-operation and co-ordination between national enterprises and it unites with the processes of production concentration, confluence and absorption on the basis of net organization of collaboration in the form of clusters, financially-industrial groups and others like that [22].

It's necessary to mention that strategy of development of industrial complex of Ukraine may be examined in case if the goals of national economic policy are determined both on short-term (5 years), middle- and long-term periods (10, 15, 25, 50 years). Conception of development of industrial complex of Ukraine on a period till 2017 year supposes creation of institutional, infrastructural and economic principles of structural and innovation transformations [21, p. 4-20]. The criterion indication of such changes growth will become the increase of branches share of the innovation and investment sector (primarily machine building) in general volume of the realized products up to 21% at 2012 and 32% at 2017 (in 2005 - 13,3%), to the sector of consumers goods – accordingly, up to 24,0 and 31,0% (in 2005 - 21,2%), decline of portion of raw and energy intensiveness sector – up to 52,0 and 37,0% (in 2005 - 65,5%). The system of plans, programs, and projects must effectively operate, taking into consideration these numbers and goals.

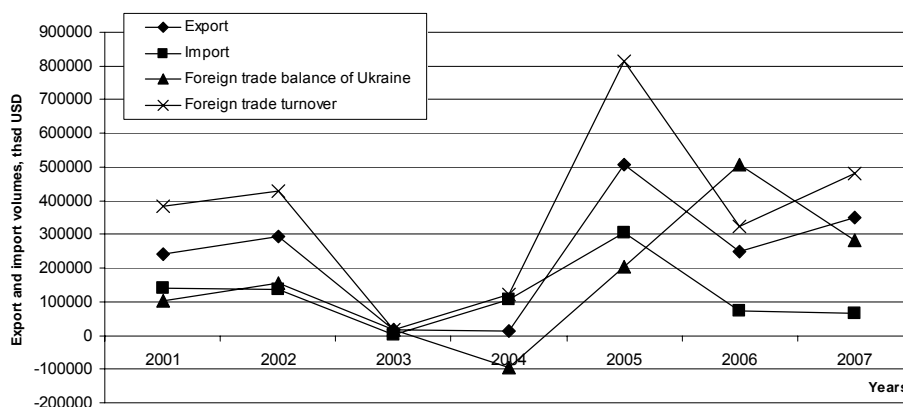
Ukraine pursues an active policy of economic collaboration and development of external economic relationships with majority of world countries. Today Ukraine collaborates with 207 countries. In 2006 to balance of foreign trade had the positive balance and the export exceeded the volume of import. During for some time past a situation changed substantially. Forming of negative balance made by such commodities groups: power materials, oil and products of its distillation, surface transports vehicles, except for all-rail, and mechanical equipment. Accordingly coefficient of coverage by the export of import collects the value less of unit (at half-year of 2008 – 0,77).

In the general volume of export of commodities took out hi-tech commodities in 2007 made 1284748,75 thousands of USD. The USA or 2,61%. Among the noted nomenclature: aerospace technique (32,84%), telecommunication and electrical engineering equipment (29,84%), unelectric technique (12,04%), chemical products (9,55%), scientific devices (9,17%), pharmaceutical products (2,97%), computer and office technique (2,11%), electric technique (1,48%).

Analysis general and commodity structure of export-import of Ukraine monetary enables to describe the following basic negative tendencies: beginning from 2005. Predominance of general import above the export (negative balance); the greatest indexes of growth and most volumes of export have unprecious metals and rental; growth of particle of import of mineral products (oil, gas), mechanical and hi-tech equipment.



**Figure 2:** Foreign trade turnover of Ukraine and neighbors countries, thsd. USD



**Figure 3:** Actual indexes of trade between Ukraine and Serbia (2001-2007)

**Table 7:** Turnover of Ukraine and EU [23, p. 25]

Year	Export from Ukraine, milliard of USD	Change comparatively from a previous year, %	Import to Ukraine, mlrd of USD	Change comparatively from a previous year	Balance, milliard of USD
2001	5,7	122,2	4,9	115,5	+0,7
2002	6,5	113,8	5,7	115,5	+0,7
2003	9,1	140,5	8,1	142,0	+0,9
2004	11,7	128,6	9,9	122,3	+1,7
2005	10,8	92,5	12,6	128,1	-1,7
2006	12,6	116,1	16,8	132,6	-4,1
2007	14,8	117,0	23,0	137,2	-8,2

The basic partners of international trade today remain Russia, Germany, Turkmenistan, China, Turkey, Poland, Byelorussia. A domestic export oriented producer must advantage give, on our opinion, to the traditional markets, to the markets of neighbors of countries, taking into account above all things level of transporting charges. If to analyze the trades and economic relationships with the neighbors of countries, their activity on volumes foreign of trade by commodities (export + import) on results 2007 is disposed in the sequence presented on fig. 2.

The volumes of export deliveries to the countries of the CIS were 35,5%, Europe - 28,6% (at thereby to the countries of EU - 26,5%), Asia - 23,0%, America - 7,2%, Africa - 5,5% in the general volume of export. Most volumes of export deliveries of commodities are carried out: at the country of the CIS is a Russian Federation (24,1% from the general volume of export), Byelorussia (3,2%), Kazakhstan, Moldova, Azerbaijan; in the European countries is Italy, Poland (3,4%), Germany (3,0%), Hungary, Slovakia; at the country of Asia is Turkey (7,7%), Jordan, United Arab Emirates, Syrian Arab Republic, China, Saudi Arabia, Cyprus; at the country of Africa is Egypt, Nigeria, Algeria, Morocco, Tunis; in America are the USA, Virgin Islands, Brazil, Mexico, Canada; in Australia and Oceania is Australia, New Zealand, Marshall Islands.

The trade growth with Serbia has a not a very positive tendency – considerable changeability. Exceeding of export is traced above the import from 2005 till present time (fig. 3).

In relation to the progress trends of trades and economic relations from EU, it can be traced from data of table 7. Negative balance testifies for the last three years, that activation of commodity turnover between Ukraine and countries of EU obviously does not go in favour of our state.

## **5. THE DOWNSIZING AND CONCENTRATION PROCESSES OF MANUFACTURING**

Among the problems of industrial development of Ukraine, which deserve on the special attention, separately costs to consider contradiction between the process of concentration of industrial production and measures of the antimonopoly adjusting. Not heavy to notice that in Ukraine an obvious accent is expressly traced on the necessity of development of small and middle business. To our opinion, this not quite correctly, as successful development of economy is possible for terms, when in her mutually beneficial connections are adjusted from MNC, when large business is developed in the key sectors of industry, that presence of 2-5 powerful enterprises on the volumes of sale at the market.

The increase of particle of presence of firm at the market carries in itself the row of perceptible advantages among which it is possible to select following [25, p. 60]:

- increase of efficiency of production or “effect of scale”, that decreasing permanent expenses on unit of products, that strengthens the competitiveness of enterprise above all things after prices factors;
- increase of presence of enterprise at the market results in creation of “entrance barriers” to the markets, especially for enterprises with the low level of efficiency and limited resources;
- concentration of production promotes “point-of-sale force” of enterprise and the same possibility of receipt of more advantageous contracts terms (value, due dates, quality of services);
- concentration of technological processes and size of enterprise promotes success of his activity both on internal, and oversea markets;
- concentration enables improvement of organization and financing of innovative researches, that stimulates scientifically-technological development, is instrumental in upgrading production, processes of logistic, system of customers service.

To the main factors which influence on forming of strategy of enterprises with the orientation on the concentration of production, belong: development of enterprises by the association and confluence; implementation of the marketing programs, at thereby advertising of firm (brand); presence of the program of innovative development; strategy validity of narrowly defined goods production.

The increase of competition joggles enterprises to the considerable charges on marketing (leadthrough of market researches, competitors, improvement of quality of commodity, perfection of packing, advertising, organization of distribution, post sale service).

By the strategic factor of success of enterprises in the world markets, the increase of their international competitiveness is growth of their market value. This task is achieved through financing both due to the personal and borrowed funds, by and confluence or absorption with other company. Multinational corporations develop strategies of restructuring of business for strengthening of the markets positions, getting the global competitive edges. The processes of confluence and absorption, as to the investment in equity, are the most widespread form of lines of foreign investments. Than more powerful enterprise, the market of sale greater at it, the greater personal interest to it is had by potential strategic investors.

## **6. TECHNOLOGICAL CHANGES AS FACTOR OF DEVELOPMENT OF INDUSTRY**

Experience of the developed countries, in particular EU, showed that in order to achieve the high level of competitiveness of products in long-term prospect it's necessary to use front-rank technologies, which provide stable industrial growth. However, the technological structure of Ukrainian industry doesn't correspond to time requests, because traditional extractive and processing industries remain to be dominant in the industrial complex of the country, where it is almost impossible to create the high level value added [7].

At the same time modern technologies can be developed by the countries with high scientific and technical potential and developed infrastructure. The purchase of the newest technologies requires the considerable capital investments and technicians-and-engineers with the high level of the labour productivity. From one side, having high enough positions according to the level of development of technological ideas, research base, knowledge and education, industry of Ukraine can't provide practical capitalization of the advantages and transformation them into value added. The negative factors are: low level of wages, “brains outflow”, difficult procedures of licensing of new technologies, low level of protection of intellectual ownership rights, low efficiency of investments in education and R&D (during the last years 1,2 % GDP was spent on science and scientific and technical works, from what 0,4 % - from the state budget, that 10 times less than in highly developed countries). From the other side, there is a problem of low labour productivity in Ukraine. In particular, in industry of radio

electronics and instrument-making in 2006 the labour productivity was 20 times less, than the world's average indicator in the noted industries of industry.

Decline of hi-tech industries of Ukraine during 90th of XX century, which was characterized by the highest development rates of hi-tech industries, led to considerable lag of domestic industrial complex from other countries by the level of technological development. From the line of 99 countries Ukraine occupies the 83d place by the index of technological development, passing Tanzania, Nigeria, Bolivia, Malawi and Madagascar (table 7 [26]).

**Table 7:** Technological level rating of the countries

Country	Rating place	Technological level estimation	Country	Rating place	Technological level estimation	Country	Rating place	Technological level estimation
USA	1	6,24	UAE	25	4,71	Columbia	68	3,6
Taiwan	2	6,04	Slovenia	26	4,71	Salvador	69	3,6
Finland	3	5,92	Malaysia	27	4,67	Venezuela	70	3,6
Sweden	4	5,8	Slovakia	28	4,67	Peru	71	3,45
Japan	5	5,68	Hungary	29	4,66	Kenya	72	3,31
Denmark	6	5,34	France	30	4,65	Indonesia	73	3,31
Switzerland	7	5,25	Belgium	31	4,59	Morocco	74	3,3
Israel	8	5,25	Chili	32	4,55	Serbia	75	3,3
S. Korea	9	5,18	Lithuania	33	4,51	Macedonia	76	3,26
Norway	10	5,17	Hong Kong	34	4,49	Uganda	77	3,22
Germany	11	5,08	Latvia	35	4,46	Ghana	78	3,21
Canada	12	5,05	Ireland	36	4,43	Georgia	80	3,18
Iceland	13	5,05	Greece	37	4,42	Sri Lanka	81	3,17
Estonia	14	5,01	Cyprus	38	4,36	Bosnia and Herzegovina	82	3,15
Netherlands	15	4,98	S. Africa	39	4,33	Ukraine	83	3,15
Australia	16	4,93	Luxemburg	40	4,28	Tanzania	84	3,12
UK	17	4,92	Bulgaria	59	3,82	Pakistan	87	3,02
Czech R.	18	4,88	Philippines	61	3,72	Nigeria	89	2,99
Spain	19	4,86	China	62	3,72	Vietnam	92	2,92
Malta	20	4,85	India	63	3,72	Bolivia	95	2,81
Austria	21	4,85	Egypt	65	3,68	Malawi	97	2,74
Portugal	22	4,78	Namibia	66	3,66	Algeria	98	2,67
New Zealand	23	4,76	Russia	67	3,65	Madagascar	99	2,64

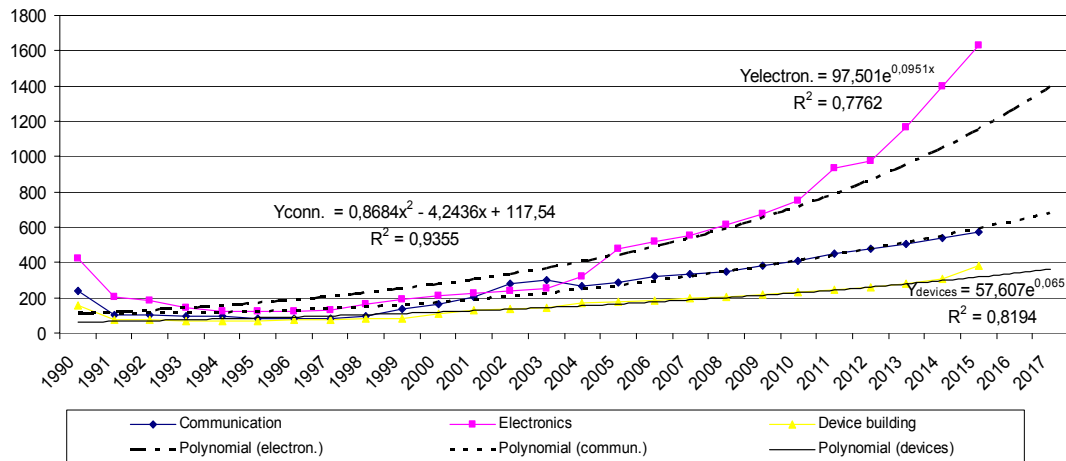
Technological lag of the production systems in Ukraine is so considerable, that the use of the imported newest technologies will not provide achievement of the world average level of competitiveness of products even after the protracted term of their implementation (at least 3 years), shortage of skilled personnel, and low domestic demand on industrial products.

Subsequent development of hi-tech industries is possible due to the association of local technological centers in Ukraine, which are still considered to be dominant in the world, however absence of the proper material, technical and production base in Ukraine, in the conditions of undeveloped internal market of high technologies lose its efficiency and often become the object of sale. The association of local techniques and technological innovations in Ukraine will contribute to creation of macro technology. In particular, the countries of G7 own 46 from the total 50 macro technologies, from them 22 technologies are controlled by the USA, 10 – by Germany, 7 – by Japan, for 3-5 – by Great Britain and France [27, p. 8-9].

## 7. POTENTIAL OF HIGH-TECH DEVELOPMENT OF PRODUCTION IN UKRAINE

Ukraine belongs to five countries which own high developed technologies of production of the special technological equipment for receipt and processing of functional constructions monocrystal materials (silicon, sapphire, gallium arsenide, carbide of silicon and others) and raw material for their receipt.

Dynamic of volumes and rates of production growth at the industry of information and communication equipment by the directions of communications, radio electronics, device building is presented on the figure 4 [28].



**Figure 4:** Dynamic of development of information and communication equipment production in 1991-2006 (actual prices) and estimated results in 2017 (actual prices), mln. UAH

At the same time, it's necessary to specify the omission of domestic industry of information and communication equipment production during the last 17 years: loss of sales markets of microelectronic equipment mostly due to low domestic demand from the side of the enterprises of device building, and modern production of information and communication equipment in Ukraine is carried out on the imported component base; absence of prospects of industrial development due to external customers; loss of economic connections with the partners of enterprises in Russia and Byelorussia; rejection of mass-produced microprocessors devices; appearance of macrotechnology of production „System on Crystal” (SoC) that led to the loss of competitiveness of domestic production technologies of devices on principle „Transistors on Crystal”.

Today domestic industry of information and communication equipment production is characterized by a presence of focal innovations which have some advantages above foreign analogues. However, the innovations which are taken separately, without the equipment, drivers and others complicate the process of adjusting of eventual goods production which is demanded in the world market. There are two ways of making decision about the task of subsequent industrial development: continuation of saling a separate innovations to the world leaders in production of information and communication equipment (JSC “SPP ”Saturn” sold a technology of production of semiconductor microwave amplifiers to corporation „Samsung”) or process organization of production of eventual goods with the help of the association of innovative achievements of enterprises which are able to create the scientific and technical innovations in complex innovation.

## 8. CONCLUSIONS

1. Activation of innovative development in Ukraine in the conditions of fasts of global changes (namely: from positions of development and introduction of innovations; to transformation of the system of production and market of labour force; forming of the global currency-financial system; strengthening of positions of MNC; acceleration of development of international trade and processes of investing; to the dictate of ideology of the permanent enriching and consumption; growth of break in the levels of economic potential between countries «gold to the milliard» and the other countries) is possible due to the change of structure of economy in the direction of increase mid- and hi-tech industries which are characterized by the greater share of production of valueadded in comparison with extractive and process industries; forming and internal market development; diminishing of dependence on the state of affairs on the foreign markets and others.

2. High-quality adaptation of economy of Ukraine a successful economic policy must play a leading role in which, during the phase of depression to the external changes (world economy) will be expressed in number in the future by the considerable indexes of the economy growing during the phase of renewal. The high starting indexes of development of economy at the beginning of new cycle (2035-2040) will enable to shorten lag between the macroeconomic indexes of Ukraine and developed countries. Achievement of indexes of socio-economic development of Ukraine of level of development of countries of EU 2005 is forecasted. The locomotive of such growth the progressive structure of industry must become with a considerable share machine- and device building.

3. Large business, including international business (in the form of MNC), must become the basic system forming link of industrial development of Ukraine, and middle and small - auxiliary and providing. Close co-operation and interaction of links will provide the stable economy growth in a long-term prospect in the form of: technical innovations are created by small, approved and modified by middle and implemented in repetition work by large enterprises.

5. At the situation of fasts of global changes and challenges every country, its imperious structures must find the most successful strategy of improvement of welfare and quality of life of people. This postulate touches Ukraine



and Yugoslavia, which must define the place, the prospect and role in integrations processes in relation to the USA, countries of “G7”, EU, Russia, the CIS, neighbor-countries, functional and regional groupments from positions of conception of sustainable development.

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## **MANAGEMENT CHALLENGES IN SERBIAN ENERGY SECTOR IN THE IMPLEMENTATION OF REFORMS**

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***Summary:** Serbia with 43% of energy imports is one of the mid-dependent countries. The European Union imports about 55% of energetic needs and its dependence will grow faster than the dependence of Serbia. To secure supply, it is important that the sources of supply and the roads are adequately diversified and that the reserves are dimensioned in accordance with the risks and maintained on the necessary level. Changes in the energy sector of Serbia in the last few years are conditioned by the demand for the strengthening of market laws in this sector of economy. It gives opportunity to the management, with their knowledge, ability and skills, to find the most efficient solution in the organization and functioning of the energy sector in Serbia according to environment and tradition, and the creative application and implementation of rules imposed by the EU in this field.*

***Key words:** energy sector management, reform, change, market*

### **1. THE STATE OF ENERGY SECTOR REFORMS WORLDWIDE**

The effects of liberalization in the energy sector in the long run were visible and undoubtedly as a whole went to the benefit of consumers (price drop, improving services, etc.). But after the year 2000, it was shown that not all models and all the solutions were successful. The experiences in all the regions were not the same.

In the United States it turned out that after 2000, the prices are rising much faster in the states in which electricity is deregulated than in those in which it is regulated. In eight countries deregulation has been suspended, and the ones in which it is active, are a minority. But on the other hand, the market of Pennsylvania, Jersey and Massachusetts on the east coast works effectively.

In general, reforms in the European Union led to major changes in the electrical and gas sector. Markets in many countries work better. There is improvement in the quality of regulation of monopolies. However, the growth in prices of electrical energy since 2003 cannot be justified only by the price increase of gas, coal and the climate change mitigation costs. Necessary production capacity margins have fallen in some regions to an unallowable level. Therefore, the applied market models do not show improvement in all conditions, and do not effectively solve the problem of security of supply - timely construction of new capacities, even though the market reforms have been motivated and initiated by irrationally high capacity surplus of the state electricity companies.

Concentration is continued in the gas and electric sectors on which the European Commission is not looking critically enough. In Western Europe are held, and in the East are re-established vertically integrated structures, with arguments that only they can provide security of supply - great investments and large scale economy. Governments take the national energy champions into protection (Spain, France ...). And there are cases where there is a direct protection of national markets (Slovakia).

On the other hand, it was shown that privatization in the disorganized environment leads to bad results.

In the European Union, states retain important influence, expressed through the property in the energy sector (as shown in the table), but these companies operate in the commercial principles and under the influence of larger or smaller markets.

The proportion of state ownership in the European power and gas companies in 2006.

Company	Country	State part %
EdF	France	87
GdF	France	80
RWE	Germany	31
EnBw	Germany	45
Enel	Italy	32
Eni	Italy	30
EDP	Portugal	20
Galp	Portugal	8
British Energy	UK	65
CEZ	Czech Rep.	68
PPC	Greece	51
Verbund	Austria	51
EVN	Austria	51
Dong	Denmark	73
Fortum	Finland	51

The proportion of state ownership also includes regions and municipalities.

The main focus of the reform of European gas and power sector was, to a considerable extent in the previous, or, more prominently, the third reform package of the European Union, put on maximization and efficient and transparent use of cross-border cooperation and the capacity of the system operator.

Previously, there was a conclusion that a single European energy market cannot be made immediately, so that markets at the national level remained small and isolated, under the influence of local dominant players, and Europe is divided into three gas and seven electricity regions – the eighth is being established in the South-Eastern Europe, where Serbia belongs and where EPS will need to prove its efficiency and value. Recently, the European Commission said that in all regions in the previous two years, progress justified the set goals.

The greatest dispute in connection with the third reform package was developed in relation to proprietary separation of transmission activities from market activity (production, trade), which is firmly opposed by Germany, France and some other countries. On the other hand, there are fewer disputes about strengthening the competence of regulators and their cooperation on the level of the European Union.

Finally, it is confirmed that there is no final, finished model of reform in the energy sector. Energy scene, by their impact on the cost of energy transformation, is additionally made complex and dynamic by climate changes that are associated with energy as the most important cause.

The market is certainly the most perfect model to increase efficiency, but it is obvious that in the energy sector it can be given a smaller share than it seemed to be at the beginning of reform.

## 2. CONTINUED REFORMS IN THE ENERGY SECTOR OF THE EU

Electricity and gas are the basis of today's way of life and economy. With the opening of the European market of electric energy for competition - a process that began 10 years ago - the citizens of Europe were able to choose and more competition has led to the assumption that prices remain low, even in times when the price of energy rapidly grew on the global level. Competition carries the ability to meet the different expectations of consumers. Some consumers will be mainly interested in the price, other may want the possibility of energy supply from renewable sources, while some may require a higher level of service.

Although progress was made in the formation of a truly competitive energy market, the European Commission found that consumers in Europe do not always get the best possible bid. And there are other serious challenges related to all aspects of supply and use of energy. If the current energy consumption trends in Europe continue until 2030, 70% of energy will have to be imported. Due to the increased energy consumption, it is expected that emissions of CO<sub>2</sub> increase by 60 % until 2030, which will lead to irreversible climate changes.

All of these challenges will be able to access if there is an effective internal market for gas and electric energy. The existing rules in this field therefore must complete in order to provide the citizens of Europe with the possibility of real and effective choice of suppliers that could meet their different expectations.

The new proposed laws are needed to resolve gaps in the structure of the market of electric energy and gas in several areas. For example: current rules related to the breakdown of sometimes monopolist activities in the network, from supply to production; effective prevention of a large number of network operators to discriminate new users for the benefit of the present supply and production companies. As a result, new companies entering the market of electric energy and gas, with no other choice but to make use of existing networks - because the construction of their own network costs too much - have great difficulties to ensure their position in the market because of the discriminating conditions for network access, lack of network capacity, lack of transparency

regarding the data on the network and low level of investment. Simply put, vertically integrated companies - that is to say companies that deal with supply, production and management of networks for gas and electric energy - are interested to maintain the dominant position in national markets for the supply, until they have help of their national network companies in this.

Moreover, the national regulators for the energy market do not have enough independence to perform their duties in a satisfactory way, while regulators in different member countries have different powers and cannot deal with cross-border issues. This means that a regulatory "gap" for cross-border transactions of gas and electric energy. These cross-border inconsistencies make it harder to the new companies for gas and electricity to supply consumers in other countries, which of course, firmly keep the position of national suppliers.

Without adequate separation of activities in the network and supply, the existing companies have little motivation to invest in the network because that would allow their competition to enter the market, although this investment is necessary to cover the new demand, to replace the outdated parts of the network and to connect Europe with new sources, or, in this case, with the existing sources, i.e. new routes for transport.

The proposed package of measures tends to solve all structural problems and the improvement of the situation in a series of areas. The list is very technical, because of complex and technical nature of energy markets and networks. However, the measures cover five main areas: the separation of activities, regulatory auditing and cooperation, cooperation of network companies, transparency and management of data and access to warehouses.

The best part which the new package brings for the citizens of Europe is that it enables the effective and appropriate regulated competition. This will bring competitive prices, improved security of supply and the necessary contributions to meet the objectives related to the preservation of life environment. Moreover, the proposed laws contain special measures related to the strengthening of position on the market. For example, the package requires the member countries to clearly define their roles and obligations of participants in the market in order to enable the creation of the retail market that would work well. Also, there are additional requirements related to monitoring and reporting on the production and supply. Suppliers will need to ensure that consumers get more information about the consumption and costs.

### **3. MAIN ASSUMPTIONS OF THE AGREEMENT ON THE ENERGY COMMUNITY OF SOUTH EAST EUROPE**

On the 25th October 2005, the European Union, upgrading the Athens process and Athens memorandum on understanding from 2002 2003, signed with Serbia, Montenegro, Albania, Bulgaria, Bosnia, Croatia, Romania, the former Yugoslav Republic of Macedonia, the Republic of Turkey (associated) and the UN Interim Mission in Kosovo, the Agreement on the creation of Energy Community in South East Europe.

The contract was signed in Athens, after several rounds of negotiations in 2004 and 2005 by the ministers responsible for energy issues of the countries of the region, in the name of the Republic of Serbia the text of the Agreement was signed by the Minister of Mining and Energy, on the basis of the appropriate government authority.

Agreement came into force on 01 July 2006 and is valid for ten years.

The signing of the contractual side take a series of obligations and not only when it comes to creating a stable, regulatory and regional markets of electricity and gas, but also for the implementation of EU law, so-called community regulations (*acquis communautaire*) in the field of energy, environmental protection, competition, consumer protection, and others. Also, the contract established the Energy Community authorities, their jurisdiction and measures that they can take, so that this Agreement, in addition to political and economic, has the institutional character and importance.

The agreement is internationally binding act that should give additional impulse to the process of establishing a regional energy market in Southeastern Europe and its inclusion in the EU internal energy market.

Since the condition for the functioning of the Pan-European energy market (the EU internal energy market) is a legal framework on all the territories on which the agreement applies, the signers who are not members of the EU will harmonize their regulations with EU regulations relating to energy, competitiveness of markets, renewable energy sources and environmental protection.

### **4. ROLE OF SERBIAN ENERGY AGENCY IN THE REFORM OF THE ENERGY SECTOR**

Regulations of the European Union in the field of energy determined commitment of member states to provide certain authority to the body - "regulatory body", to affect with its decisions the market behavior and to de facto govern the relations in the market. This commitment is a consequence of the balance between the "deregulation" and "regulation" as the market demands. This process is called the regulatory reform.

The regulatory reform introduces competition in the segment of economic activities, which were previously controlled by monopolies, companies of the state, government or government agencies with the aim to encourage new economic entities to actively participate in the energy market. Regulation means the existence of a politically and economically independent regulatory body, which has the authority to make binding regulations for participants in the market of electric energy and natural gas. In the area of energy, regulation consists of three key elements: privatization, structural adjustment and free access to energy networks.

Regulation and deregulation are in constant interaction. In order for the regulation of energy markets to be more objective, regulatory bodies should politically, hierarchically, and in material terms be independent of the influence of the state and the market power.

Agency of Energy of the Republic of Serbia was established as a regulatory body for the improvement and driving of development of energy market.

Agency is a legal subject, autonomous and functionally independent of any state body, the energy entities and user of their products and services, as well as all other legal and physical subjects. The independence of the agency is realized by its not being funded from the budget, or by energy entities, but gets funds for the establishment and work of the Agency provided from the income generated from fees for issuing licenses, part of the access and use fee, as well as other income made in carrying out tasks from its area. The agency can get funds from donations, except donations from energy entities and entities associated with those persons.

## 5. STRUCTURAL AND MARKET REFORMS IN THE ENERGY SECTOR OF SERBIA

By entry into force of the Agreement on the Energy Community of South East Europe, the European energy regulations are transferred mainly to the legal system of Serbia and implemented significantly in the energy sector in Serbia, which is faster than the others integrated in the structure of the European Union. Republic institutions (Ministry of Energy and Mining, Agency of Energy) are intensively involved in the activities of Energy Community. The first common goal is the establishment of regional markets.

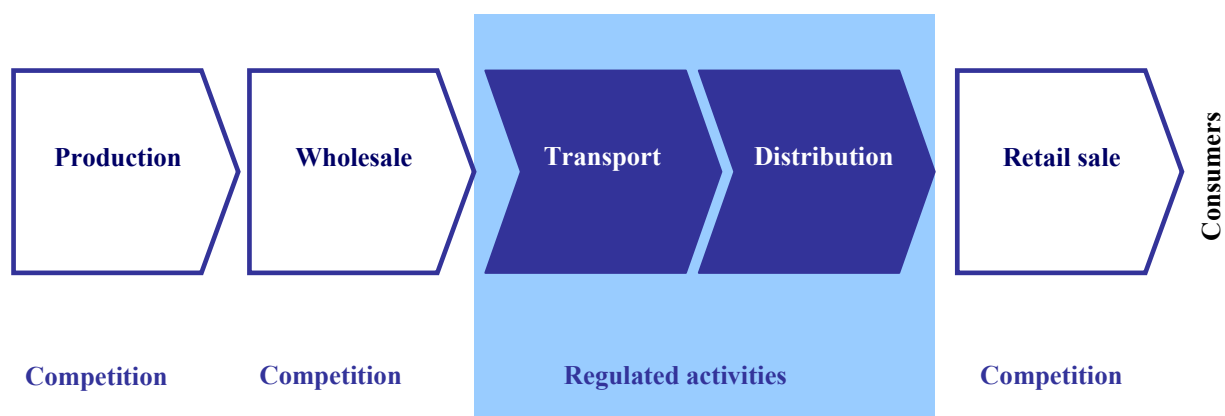
The competences of the Government are: energy policy, development of legal framework, development plan approval (ensuring security of supply), the approval of the tariff system and cost of services and energy for tariff customers, privatization and inspection.

The authorities of the Agency are: price regulation, licensing, support to the establishment and auditing of the market and addressing complaints.

Structural reforms in the electric and gas sector to a large extent (not completely) made organizational adjustment, and separation of activities, with the aim of opening markets, in line with European directives.

Separation of the network from production, trade and sales.

Electrical energy, gas - the planned state:



A regulatory and institutional framework for the opening of the market is formed. Because of undefined terms in the Law on Energy, the subsidiary regulations, which need to be prepared by energy companies, has not yet been completed as a whole - technical rules of the system (except the rules on the electro-transmission system) and the rules of the market of electric energy.

The Agency has made a decision that all buyers of natural gas and electricity, except households, fulfilled a requirement to be qualified, i.e. to choose suppliers. This made the market potentially open to a high percentage (47% for electricity and 90% for gas), but because of low domestic prices, there is no interest of the customers for the market.

The system of price regulation in accordance with the law is in power, except for the use of the system for the distribution of electricity. The price for the use of transmission system is regulated since 01 January 2008, and as

of 01 March a new tariff system for tariff customers of electricity is applied. It is expected that since the second quarter of 2009 the tariff system for the use of electro-transmission system will be implemented. Since 15 October 2008, tariff systems for transportation and gas distribution are applied, as well as for the tariff customers of PC Srbijagas. Generally, the prices are calculated by energy entities, the Agency gives its opinion, and the Government gives approval.

## **6. INTRODUCTION OF COMPARATIVE ANALYSIS OF ENTERPRISE EFFICIENCY IN THE ENERGY SECTOR**

Comparative analysis of enterprise efficiency - benchmarking (benchmarking), is a relative measure of the results of certain companies in relation to the reference, the best result from the observed sample. In every sector of energy, benchmarking determines the most efficient companies and establishes the relative inefficiency of others in relation to them.

On the basis of obligations that are defined in the Law on Energy, the Agency for Energy of the Republic of Serbia establishes the methodology that determines the maximum approved income energy subjects which take in the energy activity. Maximum approved level of income is income which a subject can achieve during the regulatory period, which enables the company to do business normally. The maximum height of approved income is determined on the basis of selected methodological approach. Currently operational is the methodology that is based on the method of regulation "costs plus", which sets for the companies that do energy work the maximum income in the regulatory period, or the price which enables the cover of costs of operations and the return of the invested funds.

The development of regulatory practices established a group of methods that are focused on performance, which defines the application of comparative analysis of enterprise efficiency - benchmarking. These methods in the price models incorporate incentives for more efficient operations and their application in Serbia can be expected in the coming years. General formula for the introduction of incentives to eliminate inefficiency would be:

$$P_t = (1 + CPI - X_t) * P_{t-1}$$

By this formula, the approved revenue (or cost) for the distribution company in year t ( $P_t$ ) is equal to the income from the previous year ( $P_{t-1}$ ) increased for the planned inflation (CPI) and reduced for the motive factor (X) which is determined on the basis of results obtained by benchmarking. The main goal of this method is to improve the operational efficiency of enterprises, resulting in lower cost of service. On the other hand, it is necessary to simultaneously take into account the maintenance and improve the quality of customer services, as well as the possibilities of enterprises to cover their costs and make some profit.

Comparative analysis of efficiency - benchmarking, is a relative measure of the results of a subject in relation to the reference, the best result from the observed sample. Benchmarking is used to determine the most efficient companies, it calculates the efficiency limit (reference value) and determines the relative inefficiency of other companies in relation to the referent value.

## **7. MODERN TENDENCIES IN THE ORGANIZATION AND FUNCTIONING OF ENERGY COMPANIES**

The time of fast changes teaches us to look at the organization and functioning of energy sector companies in a different way, as large and complex systems. Efforts towards centralized decentralization provide a basis for more effective functioning of these systems. The top of a company reserves the right to deal with the strategic issues and control, and autonomous parts take responsibility for production results. This approach starts from the acceptance and interpretation of systemic-holistic concept. At the head of each organization is a man who should, at the same time, be observed as a system, and each system has its own characteristics and limitations. Functioning of the organization must take into account this limitation when a man is viewed as a system.

During the 1980's, decentralization became an important characteristic of the organizational structure of companies. It has become a regular phenomenon of management activities and in different forms and sizes. Changing the organizational structure of companies started to change radically with the introduction of the concept of profit decentralization. It is derived from the need of incentives for entrepreneurship and entrepreneurial initiatives, and the need for a fast and flexible adaptation to changes in customer requirements, technology and competition. Therefore, within a corporation, there is a formation of strategic business units, profit centers, investment and cost centers, etc. Besides, responsibility was transferred to the strategic business units and profit centers for decisions and the realized profits.

There are several reasons for the profit decentralization of large companies in developed market economy countries. The professional and scientific literature lists two key reasons for the implementation of this process.

The first reason is to enable the stimulation of entrepreneurship and entrepreneurial initiatives at the lower levels of the enterprise organizational structure, and in all the segments in which the necessary preconditions exist.

Since without entrepreneurship we cannot provide development in modern economy, this innovation in the system of internal organization is considered to be a major strategic move in business and a significant comparative advantage in relation to the competition. All big companies tend to maximally develop internal entrepreneurship, thanks to the faster and better ability to adapt to changes and demands of a more complex and more turbulent environment. Consequently, all companies, in a corresponding measure, lower the jurisdiction from the top management to their specific parts.

In order to affirm entrepreneurial spirit, the leadership of large corporations must change the organizational context in the direction of greater autonomy of employees, especially those individuals who have a need for creativity, taking responsibility and risk. The inter-corporate entrepreneurs do not like the formalized structure of domination and subordination. They need independence in performing tasks that are challenging, but also threatening, in which they see the chances that others cannot see. Hence, entrepreneurs largely prefer a structure with numerous lateral networks. Lateral networks are groups of people (teams) that will help entrepreneurs to successfully complete a new business venture. They facilitate coordination and alleviate the conflict between the management of a corporation, which strives towards the stability of the hierarchy and ordering, and entrepreneurs who want challenging hierarchy and self-reliance and independence in the work.

A significant role in the development of corporate-profit enterprises could be played by decentralization companies. Namely, profit decentralization allows and encourages entrepreneurship and entrepreneurial initiative in the lower levels of organizational structure of enterprises, and in all the segments in which the necessary preconditions exist. This major strategic goal is dominant in the creation of systems of internal organization of all major and large corporations in the world. All of them tend to maximally develop entrepreneurial activity in order to adapt more to the demands of the environment, and because all these activities, to a greater or lesser extent, descend from the top management to the appropriate parts of companies, organized in the form of various types of autonomous, or more accurately, half-autonomous business units, such as strategic units, profit centers, etc.

The second reason for profit decentralization of a company is the transfer of responsibility for the results to those parts which can affect these results. This organizational-management measure has a major strategic importance for the company. On the one hand, it increases the number of managers responsible for the realization of business results of companies, and on the other, it changes the character of manager parts companies - turning them from the manufacturers of physical quantity - the amount of products and services, to the generators of profit of these parts.

In order to transfer responsibility for the results to the parts of companies and their managers, a company must decentralize in the sense of profit and business. Only when this is done, or when these parts are identified and when the business results are programmed, then their managers can be made responsible for the realized profit, for the significant effect on the ultimate success in business enterprises.

In addition to the reasons above, we can state other reasons for the implementation of profit decentralization, as a method for the improvement of the organization of a company and its management.

As the third reason, we can mention the acquitting of the management from a range of operational tasks and the direction to the long-term strategic activities. This reason is particularly significant for our big companies, because it they were enormously centralized and since their top management is mainly engaged in the performance of current operational tasks, and it does not deal with future predictions and creating strategic plans, which is in such a variable and turbulent environment a very dangerous practice.

The fourth reason for the creation of profit decentralization is the creation of the necessary organizational-management conditions for special planning, monitoring and presentation of financial results of those parts which have a measurable input and output and which affect the efficiency and competitiveness of companies in general. Creating these conditions is not only the economic need of large companies, but also their legal obligation.

The fifth reason and an asset of profit decentralization, for the companies in the energy sector, is the establishment of such a system of internal organization and the calculation results which allows a permanent and objective monitoring and evaluating of the performance of managers of different levels in the company, and thus their conversion to professional managers, the professionals who, in the name and for the account of company holders, lead the business and operation of the "autonomous" parts on the professional basis, and with professional responsibility.

The sixth reason for this significant organizational-managerial project is the creation of the necessary business and information basis for the establishment of modern, high stimulating payment systems and reward of all managers in the company with the professional status and professional liability.

Finally, as a seventh reason for profit decentralization of companies, we can mention the possibility of creating such a system of internal organization, billing, monitoring and distribution of the results of work which

encourages competition and mutual rivalry of the managers of profit centers and other similar profit-oriented business organizational segments.

The exposed concept of profit decentralization is fully consistent, comprehensive and up-to-date, it can be successfully applied, developed and modeled on the example of companies in the energy sector of Serbia.

## **8. ORGANIZATION WHICH LEARNS**

Good management brings a rational decision about the vision of the company, because nothing stimulates an action to change as a clear vision. It is believed that the vision of learning is in fact the creation of an organization that continuously expanding its opportunities to create a new future. Learning increases the possibilities of the enterprise to create, and offers employees the opportunity to do what they really want. Learning increases knowledge, which is a prerequisite for effective action. Learning is different from information. Information is a useful input in the process of learning organization, whose goal is to improve the organization as a whole. In order to think systematically about the whole organization, it is necessary to significantly change the organizational structure. Creating the Knowledge Base allows management to question some of the policies and processes. Systemic thinking and holistic approach of observing the organization as a whole is important for the organization of learning.

Learning occurs in every organization, because people acquire knowledge and expertise during their everyday activities. This is learning based on experience. This means that learning is a passive and a permanent process. An organization which learns relies not only on the type of learning. The ability of organization is the sum of the previous and active learning. Responsibility of managers is to obtain new knowledge that enables the transformation of a company, and not only to repeat the long accepted processes.

A learning organization is able to maintain consistency and orientation of the innovation in order to improve the quality, relations with customers and to achieve business profitability. In order to achieve this, it is necessary that there is a mechanism that allows the transfer of learning from the individual to the group. It is easier if there is an obligation of learning in the organization. Openness towards the middle of the organization facilitates the transfer of learning. Acquiring some independent companies is an effective way of acquiring knowledge. An organization must select for itself the way of learning that strengthens its competence.

It is estimated that smart organizations learn to change and learn from the changes. It actively manages the process of learning. It can not be achieved without the active role of managers. They must be more motivating by the existence of opportunities to learn and expand the horizon of the organization. The ability to detect the causes problems is required, as well as the ability to create atmosphere in the organization that stimulates the creative search for solutions. A successful solution of a problem creates in a manager a feeling of self confidence. In an organization which learns, the management stimulates employees to collect and use information that trigger the learning process. There is an atmosphere that every business experience is an opportunity to learn. Smart organizations are not only trained to be easily adapted to environment, but also to influence its design. It is difficult for an organization to learn effectively if its leaders are not students themselves. The learned are condemned to live in a world that no longer exists.

## **9. MANAGER AND ENVIRONMENT CHANGES**

It is important to emphasize that the right place of all the changes is the human brain, i.e. thinking, or ability to create your own or accept the ideas of others.

Starting from this fact, it is clear that division of the so-called endogenous and exogenous changes is significantly relative, since a large number of endogenous changes occur as a response or reaction to the already made or expected changes in the environment, so, which come from other people's heads. In an effort to meet some of the future changes, companies only confirm that they have closer interaction, that changes actually connect them, even when there is market rivalry between them, that they become parts of the integrated closer and further environment which, eventually, always implies a whole and totality. In this respect, autonomy of companies becomes less important than their ability to control their own survival, which essentially depends on how they will be able to manage current and future changes. Therefore, the changes become a key word and a term whose primary meaning is in fact to be, to exist. "Everything changes, only the changes are permanent," is the metaphor that best describes the contemporary situation.

Who does not want, does not know or cannot be changed, someone else will do that instead, but of course, in a way that will suit him best. Therefore, modern managers must be able to understand and recognize the basic and mega-trends of modern development, therefore, the changes, and, when possible, generate and mobilize resources for future changes. In fact they must meet the coming changes, expect them and seek them outside and within themselves, breaking all barriers and mastering the always present resistance to changes, but first the



ones in themselves that usually arise from the lack of vision, the ease of routine work and inertia. Therefore, the managerial ability (knowledge, skills and experience) will be increasingly measured not only by the leadership capacity to effectively do things the right way, but to recognize strategic goals in the sea of tempestuous, deep, and fast changes.

Having in mind that, generally, there is an unlimited number of possible changes - just because there is an unlimited capacity of potential sources of change (ideas of wise men, the courage to start a change; stochastic changes of nature and the growing eco-risks, increases scope and variability of human needs) - visionary abilities and entrepreneurial approach to the management of changes are definitely the most important quality characteristic of modern managers.

Dynamic growth and development of a large number of successful companies from various businesses and the general rhythm of changes in them must be primarily associated with the creative contribution of innovators and entrepreneurial leaders who manage to keep at least a minimum "phase advantage" in relation to the nearest competition. Living with changes and in changes is not only an imposed obligation, but in leadership aimed managers it becomes their oath, a testimonial obligations and pledge for survival.

## **10. AFFIRMATION OF THE ROLE OF MANAGERS IN THE REFORMS OF ENERGY SECTOR IN SERBIA**

Development of organizational structure is necessarily followed by the development of management system. Therefore, the development of management system should be regarded as one of the vital tasks in the development of a company. It is known that a higher level in the functioning of the organizational structure can be provided only by quality management personnel. The process of management development meets this growing demand and need of new management talent and a new generation of managers.

Development of enterprise management in the energy sector is a process of quality improvement of managers in terms of the formation of these skills, the knowledge of attitudes and experiences of managers and the creation of managerial skills to identify their own role in the process of achieving the mission and objectives of an enterprise.

The main problem which follows the development of the management system is in the process of transition of managers, from one organizational level to a higher organizational level. Difficulties of this transition are in the fact that every higher organizational level requires new managerial qualities necessary to perform all the more complex management role. A company in the energy sector as a complex production system requires paying of special attention to development of management, because with a higher level of function in the management team, it strengthens the functions of the environment.

The primary prerogative for successful development management is a change of personal concept of managers on their own roles. A role represents a set of expected behavior. This means that from individuals who were entrusted with a role, we expect to behave in an appropriate way. To be an effective in the performance of his role, a manager must properly answer the demands which his specific role sets. These requirements are mainly related to the level of responsibility, required knowledge and skills, and even some psychological moments.

The role of a man gradually becomes an integral part of his personality. Depending on how the individual experiences the specific requirements that his role imposes, his performance within the role will also depend.

For successful development of management it is necessary to possess the appropriate skills and knowledge which change in the total volume depending on the level of managerial functions. The ability of managers is characterized by the possession of technical, human and conceptual skills. Technical skills reflect the willingness of managers to perform specific tasks. Human skills are the ability of managers to work with other people. Conceptual skills are the critical variable where manager shows his ability to successfully adapt to internal and external environment and to adjust his attitudes, which promotes himself to the top managerial hierarchy.

To be successful at the top of managerial hierarchy, a manager must experience psychological transition from the direct control of the functioning of organization in a situation in which, over the control managers at a lower hierarchical level, he controls the work and functioning of the organization.

Another psychological aspect for the development of management relates to the basis used for evaluating their own work. A manager who aspires to the highest managerial position must develop the ability to estimate his work not on the basis of his own performance, but on the basis of performance of the people he manages. Such a change requires from the manager not only more efficient management of the work of other people, but is at the same time the incentive to choose their partners are capable and strong staff, without fear that they will become their competitors.

In this way, a new approach is made in which a company, as a very complex system of production, is led by a strong management team. In the present complex conditions a goal can be successfully achieved only if it is in front of a well-organized and strong team, which has a motive and desire to achieve its individual and collective affirmation through the achievement of a commonly established goal.

"Changes are radical and long-term. The work of the general director will look like the most complex job that I know, i.e. the management of opera. To your stars you cannot give orders. Each group is quite different. The conductor of an opera has the score and everyone else has the same score. In a company, you must ensure that all the different groups approach each other to produce the desired result. This is the key to understanding what is before us. It is not about who is more or less important, but who is important for what. It is not about the restraint of giving orders, but you should know when the order should be given, and when to treat someone as a partner." (P. Drucker).

## 11. CONCLUSION

Passing the Law on Energy in August 2004 and establishing the Agency for Energy of the Republic of Serbia in January 2006, has created the basic conditions for the development of energy market in Serbia. Until then, the traditional vertically integrated companies separated their activities in the field of electric power, oil and gas.

There are endeavors to subject manufacturing, wholesale trade and retail of energy to market competition, and transmission and distribution to remain regulated activities. The enactment of the necessary methodology and tariff systems that result from them has created the conditions for this division to start.

Creating a new environment should be seen as an opportunity, not as a threat to the management structure of companies in the energy sector, that they should use in order to strengthen the economic efficiency of their companies and find the right strategy of growth and development, which provides the security of supply of economy and the citizens of Serbia with energy.

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## **SOME CHARACTERISTICS AND INFLUENCES OF INTERNET ON MANAGEMENT OF SERBIA AND COUNTRIES IN DEVELOPMENT**

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***Summary:** Serbia by territorial criteria belongs to South-Eastern Europe, and countries of the Western Balkans, and by the quality of social and economic life, the countries in transition. She, like other countries have some common and the particularities when it comes to technological development and application of information technology. Serbia, together with other countries of the Western Balkans and Moldova, 2002, in Belgrade signed Agenda on the development of information society in Southeastern Europe, as a basic document on the development of information society in the region. This document is a confirmation that Serbia committed to the development of information technology by European models and standards. The agreement was confirmed at the Summit and Southeast European Cooperation Process. Regardless of the above, the fact is that the declarative and there is a real difference, when it comes to the Internet. Namely, the Internet as a modern communication technology in Serbia is still under a high level of influence and control of the state, which prevents its development, since that has not yet been exposed to sufficient market competition. It is shown that in all cases where the state controls the corporate systems of any kind, to the effects of the management of smaller, because each state usually defined as a poor host, and the absolute state, as absolutely a bad master. Therefore, and informatics sector in Serbia is not able to adequately valorize investment in this highly profitable area, but to create conditions for low-cost Internet communication. The paper tries to explain some of the features of the Internet in Serbia and its impact on the management especially in the management of the transition developing countries*

**Keywords:** Characteristics, Implications, Internet of Serbia.

### **1. INTRODUCTION**

As the most important effect of which countries of SEE expected of Agenda is "to obtain political support for this domain and action, in order to reduce the digital gap that exists between the objective of this region and other parts of Europe. Serbia is under the auspices of the Stability Pact in SEE in October 2007 signed eSEE Agenda as a new strategic document and action plan development activities of information society in the region of South-Eastern Europe. In this way, as is pointed out and mentioned in the conference, Serbia comes in a new and higher stage of development of information society. The eSEE Agenda defined the following three areas of action.[1]

- Further development of common information space of South-Eastern Europe and bringing to the information society of Europe,
- Strengthening innovation and investment in ICT development and education in parallel with the development of the private sector for the purpose of gaining economic growth and new jobs,
- Achieving inclusive information society that is open to all and to encourage growth and create jobs.

Each of these three priorities has clearly defined actions and tasks for the period up to 2012 years, and for a period of five years.

Where is Serbia today, six years since the conference in Belgrade and the year after the defining eSEE Agenda + in Sarajevo and download regional obligations?

According to the research of the Center for Advanced Economic Studies, is that the sector transport, storage and communication (including the statistical methodology and the Internet) recorded the highest growth, and that he was from 2002 to 2006 increased more than twelve times. This is the only sector that is not in the observed period noted stagnation, but a permanent growth

On the second place in the financial intermediation, which include banking and financial services, which in 2006 increased by about 25%, compared to 2002. However, it is evident that this sector had stagnated, so that in 2003 noted decrease in comparison to 2002.

Research companies that deal with services at the level of Belgrade show that in 2006 she participated with about 11% in the creation of the Serbian GDP. In these systems, has been recorded twice and higher productivity than the average productivity at the level of Serbia. If the above-mentioned research excluding companies that dealt with information and communication technology and engineering, it can be concluded that the productivity in these enterprises was three times higher than the average economy. [2]

## 2. CHARACTERISTICS OF INTERNET TECHNOLOGIES IN SERBIA

Information technology and the Internet is probably one of the most successful activities in Serbia, as a country in transition. Unlike other activities, this area is strongly developed and is rare in the sector which has been recorded stagnation. Hence the need to this area some more analysis and attention to the indisputable fact.

In the analytical analysis of the state of Serbian Internet must bear in mind the following characteristics:

- Political - economic environment in the last decade of the twentieth century did not help the development of telecommunications infrastructure and the Internet. It is primarily thinking of sanctions the United Nations which has been covered and the field of science and technology. In the period of sanctions, then the Federal Republic of Yugoslavia was excluded from all international organizations, professional (regional, or international) associations and did not have access to scientific information in any sphere.
- Low standard of the population, did not allow a purchase of a PC, modem and other "fixed assets" needed for connection to the Internet. In this situation, acquisition of information equipment was not released from a number of taxes, there was no proper credit or other encouraging policies that would allow easy purchase of computers and software, although it is evident that investment in this equipment back very quickly and with a high level of profitability. In the first half of 2007 for the purchase of computers should be distinguished from three to four average monthly salary, which depends on the configuration and brand, which is hard and disadvantages of mass purchase of the computer. If it added that about 30% of the working age population is not employed, then you can get a partial impression of the financial strength limiting factor in the further development and use of the Internet in Serbia. Interesting is the relationship representation of the computer, depending on the monthly income. In Serbia, according to estimates [3], households with monthly income up to 100 euros have a computer in 2% of the cases, those with incomes from 101 to 200 euros in the 9%, and the one with income higher than 200 euros in the 28% of cases. Households with income of 300 euros or more have over 50% of computers in Serbia. The situation is similar in Montenegro and other countries of the Western Balkans. Stated indicates a high level of correlation between personal and family income and the number of computers and the possibilities of the Internet.
- Lack of interest by the political structure for the development and investment in the only free media. Often happened that the political structure, even though they were not interested for the development of Internet and communication with the world, stifling progress in this area (except in the NATO aggression against Yugoslavia, when the Internet and through a global network of communication was only possible way to the transfer of information). Aspiration or attempt to control Internet communication and censure by the political elite of the government is inefficient attempt, but by itself indicates the relationship with this kind of communication.
- Ignorance of English, as the dominant language on the Internet, level of English language required for use of the Internet in Serbia knows less than 20% of the population older than eighteen years. But even here there is a great difference between the languages of certain age period. In the age group 18-29 years the population of English language is used every other respondent, while the percentage in the age group over 60 years, only slightly higher than 3%.
- The level of technological development of information - communication technologies, is very similar, but the volume is significantly behind the countries of Eastern Europe. This teaching is primarily a consequence of the first three characteristics of the Serbian Internet space. It is shown that without radical and fundamental changing attitude towards informatics no progress in this field.
- Availability of computers and computer components, comparing with the European Union, is extremely small, because of low standards and low purchasing power of population, education and culture, and that creates a resistance to this kind of technique and technology. The relationship between price and quality computer components in our region is very unfortunate, was due to insufficient competition and monopoly, or because of irregularities in the procurement of imports and striving to achieve high earnings.
- While the modern conditions about virtual markets, and markets in communication networks in Serbia, and almost no legal software market. For this reason, especially in the period after the UN sanctions, many companies are difficult to decide to establish a permanent connection to the Internet, because the legal

software, the terms of the economy of Serbia, rather expensive, difficult to obtain, and the costs of this nature in the largest number of users is not ready, which says what the attitude toward intellectual property in Serbia.

- A small number of [4] classical and mobile phones users, as well as insufficient capacity, speed and reliability line. In the present time is evident that over 25% of households in Serbia there is no fixed telephone network. The reasons are lack of technical conditions for their introduction and relatively high costs of introducing fixed phone [5], which is conditioned and locations, as well as the relatively high subscription price and counters that are not adapted to family budgets. However, more precise analysis shows that the phone connection and cost of introducing not decisive factors that affect the use of the Internet. Regardless of the unreliability of statistics, the fact that of those who have a connection is about 50% with no computer, that confirms.
- Poor infrastructure - the lack of digital centrals, digital lines, optical lines and other. The existing infrastructure is largely obsolete and is not able to respond to new demands on the speed, reliability and capacity that are required in this kind of technology.
- Monopoly position of Telekom Serbia was certainly the biggest limit on the development of information - communication technologies. In Serbia, it became possible to expand telecommunication infrastructure without the participation of national Telekom only mid-October 2008, in relation to the developed countries in which the monopoly abolished even the beginning of 90-years of the twentieth century. On the other hand, Internet users often have problems with data transfer because the telephone line connection is bad and unstable ("breaks"). Underdeveloped mobile telecommunication network of the inhabitants of our country does not allow you to maintain pace with the world.

However, despite all the above, the Internet in Serbia entered in all the pores of life. Proved to be correct statement to the Internet, regardless of all the above-mentioned difficulties, unstoppable machine that drives the economy and society and which can not stop [6]. At the present time can be noted that the entire Internet services available to users in Serbia, in relation to the initial phase, when it was the privilege of academic circles, and scientific and educational institutions. Already a decade IPO in Serbia, there are local service providers on a commercial basis, which created the conditions to the Internet is available and non academic circles.

### **3. POTENTIALS IN THE DEVELOPMENT OF THE INTERNET IN SERBIA AS A COUNTRY IN TRANSITION**

Recently conducted researches on information communication technologies in Serbia have shown that it has great potential. Companies engaged in this kind of technology have gained a reputation in the international market, especially when it comes to the financial software. Research shows that the problem of organizations dealing with information technologies that are small and young, and the insufficiently powerful and to the state through certain mechanisms could affect their growth. Proposes the establishment of the coordinating body that could provide logistical support for a joint appearance of more companies, which jointly applied to the international bid for placement of goods through the service. [7]

ICT is according to the estimates in the prospective group activities in Serbia. They are in addition to tourism, construction, education, film, logistics (transport, renewable energy, etc.) Marked as a branch of which can be significant flywheel start of flows and employment. [8]

ICT companies in Serbia are competitive when it comes to price and flexibility of experts to adapt to different types of projects. Here is the problem of the information technologies dealing with small companies, which are often consolidated in order to increase their creative potential and strive to own equipment products or services, or as little participation of foreign cooperation. With average gross pay of 880 USD on a monthly basis, Serbia is on the criteria behind the average monthly salary: Georgia, Romania, Hungary and Turkey, which for example, has average monthly gross income in this area of 3,600 USD, which is four times more than in the Serbia.

The availability of specialist technical specialties, such as the developer is on a high level with the tendency of growth. At the Serbian universities in 2005 are schooled about 27,000 graduates in technical sciences, relevant for ICT jobs. Their problem is the lack of continuing education, and required additional training programs for their new software solutions. In the survey, respondents said that the biggest problem ITC companies in Serbia, the lack of management personnel. The owners of the companies believe that the growth of the area affected due to the lack of middle management, who took over key functions, while the developers were in positions of technical nature.

Research has shown a tendency of increase registered and organizations dealing with ICT-based. From 2003 to 2006 the number increased to 44%, the number of jobs has doubled, and exports increased by about five times. Statistics show that currently in Serbia there are around 2,000 companies engaged in ICT-based with a total of 150,000 employees. [9]

World Economic Forum reported on the technological readiness and innovation in Serbia with optimism. Serbia is on this issue found in front of Bulgaria, Macedonia, Albania and Bosnia. In the institutional perspective should edit this area and provide additional funds for the promotion of development of this industry, because each unit of money invested in this area several clusters. Special attention should be directed to education and training management, experts for the finance, human resources management, etc. There is a need for experts in the field of sales and marketing, due to the fact that the products are placed through the service and to promote the equipment. Through the legislation should provide stable funding incentives.

#### **4. THE INFLUENCE OF THE INTERNET IN THE MANAGEMENT OF THE COUNTRIES IN TRANSITION**

Countries in transition are behind in technology and equipment and implementation of IT and the Internet, why, and suffer the consequences of inferiority. Internet has undoubtedly broken national borders and globalized the world. However, he increased the power of control in countries that apply it, and increase the differences between developed and developing countries. The political theory is often marking technology as an instrument to establish a monstrous control at the global level. "This society correspond information machines. Their master is the code, and a referent is password. Digital control language is made up of codes, and freedom of movement of a subject is determined by what is written on his magnetic card. Art, as well as the theory will have to develop a new strategy of resistance to totalitarian pretension of this model of society, if they want to remain critical. "[10] In this way, the Internet increases the overall efficiency at the global level, but the increases were between the developed and underdeveloped countries, which the developing countries even more behind.

Here, as in other areas, economic laws are restless. Therefore, the superiority that is established is reflected to the innovation and the effects, which is the meaning of investment in new technology. When the legality would not be there, no one would be investors in technological innovation, but the money investors on the savings, or in other areas. Following has tentatively said "punishment" for those who are beaten track of technological progress, which does not run the risk, which are in permanent technological delay. So, when followers understand the effect of certain technological innovations and begin to apply more massive, leaders from its broadcast technology incubators of new technology, or new functional features of existing technology and thus are always in front of followers. As well as in developed countries, Internet shows significant effects on all countries in the sphere of development and transition. Influences that show the macro level, the transfer and the organizational systems in these countries. It is therefore for further understanding, it is needed to point out the general impact of the Internet that shows the macro level of countries in transition.

##### **3.1. General influence of the Internet in developing countries**

Regardless of what critics IT trying to prove how the Internet produbio and further deepens the gap between developed and underdeveloped, logic shows a completely different attitude. So, if the increase IT development and further increases the rich economy, why it would not happen and the developing countries? If the universal Internet technology, which in relation to the other "revolutionary innovation" does not require a great investment, why is this technology would not have believed the basis of progress to reduce gap between the developed and developing countries. It seems that the issue here in the stereotype that is difficult to maintain.

Countries in transition, as well as the developing countries today, can get much more from IT than a developed country. They have much less technical equipment and can quickly develop, purchase already proven modern techniques and methods of their use, which enables them to have a faster growth dynamics, but At developed economies, even though start with fewer computers. For the above, J. Hammer, the famous philosopher and theorist of art states: "The introduction of the Internet goes hand in small and underdeveloped countries, because those with the minimum investment can be included in the broader global network of exchange of information, knowledge, service, ... Hence the conclusion that the web set, is a luxury, usually used as an excuse for ignorance of the nature of the media. "[11] Poor countries do not need to re-find wheel, or computer, but only you need to do is to open its economy ideas which it has proven itself in the developed world. Bearing in mind the dynamics of the spread of IT outside the developed countries should be optimistic. In this way, IT and Internet communications and reduce costs beyond the geographical boundaries, which contributes to the intensive dissemination of knowledge. While the railway and electricity slowly expands its activities in developing countries, often for several dozen years, IT is able to do far more quickly. [12]

IT can help economies in transition to skip the old technology, and to immediately introduce modern technology. For example, it is possible to skip the copper wire and traditional phones, and immediately go to the wireless technologies, which require less fixed investment and maintenance of traditional string system and infrastructure. This applies in developing countries with low population density or unevenly, but also in developed countries. It is known that Australia is unevenly populated country and that there was irrational to impose traditional

telephone, or classical trade institutions, such as department stores, super or hyper market, which require significant concentration population and they work in urban units. That is why Australia accepted mobile telephony, virtual shops in response to the unevenly population, because it is a way of organizing rational services.

The same is the situation with non or inaccessible areas in which to set the infrastructure was expensive. The solution is often in mobile phones that do not need a classic infrastructure, which are cheaper and provide rural areas and villages to use global depository of knowledge. The use of mobile phones in the previous case may be even cheaper, than traditional phone, if you are using the Internet. So, logic suggests that rural areas in developing countries can no longer utterances its lagging technology found in the underdeveloped infrastructure, because they are deleted by this issue, or will soon disappear, the border between the village and the city.

Countries in the development of the Internet offers free access to a large number of expert information and tips from various fields. It enables schools to have free access to libraries around the world and large book holdings and to become rich and without the library and books. Thanks to the Internet, developing countries can access most elite world universities. Distance learning gives students in poor countries to study at the best universities and colleges, to learn from the best professors, to learn from the best books and the art methods and techniques of learning. However, a huge fund of health information and medical knowledge available to anyone who has a computer and who knows English language, which allows poor countries to use and knowledge of the world's best clinics in the world, with a very low price.

In the world of cyber crime, which is a reality and that dealing with informatics experts, part of the above can be used free of charge. Analysis showed that the largest number of computer fraud occurs in the developing countries, primarily through the use of software as intellectual property without compensation. In countries in transition, there are no precise legal regulations, regarding the protection of intellectual property, or it is not respected. Therefore, developed countries on this basis suffer huge losses. [13]

This has until now been a privilege only the most, those who have had the opportunity to pay studies, or treatment by a few tens of thousands of dollars on an annual basis. Now, all can be referred to the least developed countries and available, which creates equality and at the global level regarding the availability of knowledge to all, regardless of social groups, the level of wealth, away from the elite universities, etc.. Therefore, the Internet is reducing the dependence of the poor and the rich world did more, when there is a possibility, and the availability of vast repositories of information and knowledge that now exists primarily on the Internet.

Some countries and continents begin to use the advantages. African practical University, which funded part of the World Bank, uses satellites to broadcast television courses for students in 15 African countries, who communicate with teachers by e-mail, fax, and mobile phone. Laying doctoral examinations, operational requirements of the distance and other medical treatments, determine the symptoms of certain diseases and treatment methods can be found on the Internet. Pursuant to the above, each house or apartment, or Bedouins tent in poor or developing countries and transition can become a university, clinic, or theater, under the condition that has the Internet and to use it. In that way, creating conditions to reduce the difference between the high level of dependence on the Internet that is now present in the developed world, with big problems of health and business efficiency and the total absence of use of Internet in the countries in transition.

IT can be a positive influence to the countries in transition may reduce the size of companies in many areas. They can through IT and to have access to the world market and that it market its products as to work and developed countries. Internet in this case no different goods from the developed and transition countries, but only by its quality. For example, the Internet allows tailor from Shanghai-to custom-made suit for a lawyer in Boston and delivers it to his home address. Or, an association of female weavers from a remote village in Guinea sales network hanging over the Internet for 1,000 dollars. Companies from Africa can compete in the tender American General Electric, to participate in e-auctions under equal conditions, etc.. [14]

Finally, IT can use the large transnational and multinational companies in the world to move part of its industry in developing countries, or in the countries in transition, bearing in mind the lower cost of labor force the local population, lower cost of raw materials and use of materials or quality of personnel information potential. Computer programming, management and finance costs Airline Company, business insurance and profit centers are more established in developing countries. However, IT enables the countries in transition to attract more direct foreign investment and thus hire personnel unused potential, but also to learn from developed, acquired working culture, skills and abilities in some areas.

From the above can be noted that IT will enable the developing countries faster exit from the existing poverty and the reduction of differences that exist between developed and underdeveloped. This will create the conditions for less dependence on developing countries from developed countries. Of course, that this occurred, it has to raise the educational level of the population in countries in transition. It is difficult to imagine a more intensive penetration of the Internet in the countries in transition and its use, in the same situation when they have a high percentage of the population that does not know to read and write, there is no minimum technical

education, or do not know the English language, as a global informatics, and business language of communication.

In order to accelerate the introduction of IT and the Internet in the countries in transition, it is necessary to abolish the state monopoly that is the most common in these countries. Because of uneven and bad quality investment, especially importing outdated technology, waiting list for telephone connection is increased, and the costs of their introduction. The population of underdeveloped countries pays three times more expensive connection to the Internet, but it was the case in developed countries. Thus, IT, and when it is introduced, often a source of income want on the political authorities, while at the same time slows the development of the country, and thus reduce the possibility of even larger collection of revenues. Some developing and transition countries, strive to develop their IT, which is unacceptable in the world of high-level development. Developing countries need to apply its technology and seek functional improvements, instead of which strive to develop, because they are far more successful in the highly developed countries.

India is a typical example in which the IT demonstrated a great impact on the development of the country. Her experience could serve the countries in transition to overcome the technological gap. This large populated country has good software workers and low-cost labor. Developers are paid a quarter of what would be earned in America. Export software is growing at the rate of 50% annually. However, should bear in mind that this is not in the interest of India as a state. Due to insufficient transparency and disorder, money goes into private pockets of corrupt few rich and the way to increase the range between the rich and the poor. Thanks to monopoly Telecom, Indian citizens do not have access to phones or the Internet, which is on the phone lines are often waiting for several years. Better example is China, which has four times more users of telephone lines and the Internet to thousands of people from India and 18 times more mobile phone. [15], however, should bear in mind that in China there are restrictions in the implementation of the Internet, which was visible and during the Olympic Games in Beijing in 2008 year, when the shock news was that China liberalized the use of Internet for journalists who were accredited for this sporting event.

### **3.2. Specific management of the Internet in the countries in transition**

Changes and impact that the Internet makes the macro level are evident, even on the example of a small entrepreneurial business, and not to speak when the issue of transnational and multinational corporations. His influence can be seen in different areas of the organization and its subsystems.

Less - more, sooner or later, the Internet will manifest impact on the management of the countries in transition, as it happened in developed countries. The expectations are realistic, because the Internet is a universal technology that can radically to increase efficiency at both the global, and the corporate level.

However, the limiting factor in the application of information technologies in most countries in transition is insufficient steppe development of democracy, classical organizational structure and lack of professional management.

Precise analysis shows that democracy is, as a universal human right, and caused further affect the introduction and use of the Internet. Shows that they are now developed and technologically advanced country and in the same time most democratic country in the world. This is natural, because it is proven that innovation and new technological solutions in the administrative democratic society. On the other hand, education, or countries in transition and as a rule at least democratic, and followed by a high level of monocracy, to dictator. In such circumstances, autocratic regimes, which tend to be less open to the world, so that the longer you keep the existing situation. In the future, regardless of the slowness of the process, you should expect that the developing countries under pressure from the international community and to democratize the way and allow wider use of the Internet.

Preliminary question is directly related and organizational design. Analysis showed that the majority of developing countries and transition economies has a deep organizational structure, which is more Layered and as such necessary for the establishment of fast and quality information. Each level of the hierarchy is trying to save integration and information within your "floor", or in your functional area, to establish a monopoly. This even happens even when the organization introduces information technology company that knows no borders and sector making. In such circumstances, IT not only to non-effect, but creates costs and the company is not able to achieve the benefits of new introduced technology.

On the other hand, countries in transition have generally unprofessionalized management. Directors and other executives have extended the hand of the state, and receive the same status of state officials. Management do not have the necessary skills to manage a very professional management is generally considered harmful. Instead of professional as a basis for each performance, management is under the influence of ideologization. Managers here have before to achieve the task of privileges for a political option, but to ensure growth and development of the company. For this reason, despite the existence of a number of experts who have completed business and management schools remains untapped, AO import foreign and trusted manager of the business world that are not talking.



The introduction of the Internet, corporate organization of the countries in transition, can be large and immediately available to customers and suppliers from all over the world. So, the developing countries, as is the case with small businesses, thanks to the Internet can offer their goods and services throughout the world, but also to connect with other entities with different points of earth. Internet does not know the size or metrics. The market for goods and services on the Internet and it no one can control, or opposing, to the same competition.

However, the Internet has enabled the labor market, which is in the development of big and cheap, moves to the Internet. Almost half the world's largest companies now recruited work force over the site, about three million managers and professionals (of which two thirds are the experts on computers or engineers) have their own biography on the Internet and on the way looking for work. A large number of international companies recruit workers from developing countries through the Internet. "Linking with previous employers on the Internet, the new employer can quickly and easily check the history of workers who want to work, and employees can demonstrate that the public is ready to change. Time labor market becomes fully transparent, as developed, and for the developing countries and transitional countries.

The special significance of IT is in corporate governance in the development of abilities and skills of employees. It is clear that developing countries have a deficit of highly professional and specialized workers. They can more efficiently to gain new knowledge and to help establish the organizational learning. So, thanks to the Internet, it is possible to increase the chances of individuals in acquiring the basic or additional knowledge, in relation to the past, when people have learned mainly from the experience or their mistakes. It is demonstrated that such methods ineffective, and often harmful. Internet has changed and changing organizational culture and business behavior, considering that it burdened by disrespect time as a resource, not respect discipline, deadlines, to understand the quality, ethics, etc.. [16] Is listed on the Internet faster and much more efficient way, which provides additional value in its implementation, especially when it is necessary the introduction of rapid and fundamental changes.

The introduction and use of the Internet is a strategic change. His introduction, there is not as it was, so that unprofessionalized management loses positional authority and is forced to listen to and consult experts. The introduction of new technology, knowledge, especially explicitly contained in the software, projects, and organizational materials and stored so that enables the easy and fast transfer between individuals, parts, organization and environment. In this case, the position in the organization are less important, and the importance of gain knowledge, skills. This provides conditions that developed countries relatively quickly came to learning organization, which represents the future of civilization. [17].

### **3.3. Further development of internet in countries in development**

Further development of the Internet in the countries in transition and its impact on corporate management and organization will depend on the readiness of all before the state, and corporate organizations to take the risk of structural readaptation in order to successful adaptation to the new global environment.

However, in the new conditions required is a global navigation corporation in developing countries. Of corporate management is expected to build a competitive position through a stronger international orientation and application of modern methods and techniques of business, and not on the basis of traditional business. [18]

Bearing in mind, in order to broader application of the Internet, countries in transition should take the following measures:

- Establishment of a stable social economic environment that will stimulate the use of the Internet and e-business. It is evident that the transitional countries still do not have a stable business environment, lack of legal security for foreign investment capital in the sphere of telecommunications and the development of the Internet, etc.
- Distribution of Internet culture. In countries in transition, there is no culture in the use of the Internet and other means of telecommunication. The introduction of IT in a large number of schools contribute to the acquisition of knowledge and skills to use the Internet, as well as a large number of agencies and organizations that deal with training in the use of the Internet. This problem is especially pronounced in rural areas where there is no culture, and the need to complete transactions using the Internet or other telecommunication technology, especially when it comes to electronic commerce, electronic banking, direct marketing in the tourism and the like.
- The creation of favorable technical conditions. This is especially true at the higher level of telephone networks, or more issues at the same address, classical and cheap mobile phones, the introduction of issues of free calls, cheap phone calls regardless of the talks in the same paging number, etc
- A number of service providers. A number of Internet service providers is another important technical condition of which depends on the further development of the Internet. More or less, all developing and transition countries in this regard have problems, which leads to great congestion in the telecommunications main road which is slowing due to Internet communications. This problem is complicated in countries where there is a state monopoly in the use of telecommunications and which are private, small Internet service

providers to a large extent dependent on the service provider, usually national Telekom, which often dictates the terms of connecting and prices, as was the case and Serbia to the middle of October 2008.

- On the technical - technological improvement, a significant factor expresses and prices of computers and original proprietary software. Price of computers and software in developing countries is often at the level of developed European countries, or something less. Stated prevents equipping organizations, or individuals with information equipment, and often buys low quality equipment and illegal software. Solutions should be sought in the VAT exemption of information technology, fully or partially, the introduction of subsidies, creating a potential loan, which will be in the purchase of computers and software, the introduction of free education, etc

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#### 4. CONCLUSION

Above is pointed out that the Internet as a modern communication technology in the large backlog in the countries that have acceded to translate none market economy to a market economy. So are its other potentials unused, a transition out of the country to achieve the defined goals in their own development strategies.

Internet as the technology offers greater chances of poor countries, than any previous strategic, capital or technology that is a man found. It enables small to become large, countries that have no natural resources to become rich, even richer than those that have a great natural wealth.

Thanks to the Internet, poor countries can access the international market, and sell goods as well as developed countries. Internet does not make selection of goods by regions and sites, because, as noted, the Internet site abolished as traditionally an important factor for corporate performance. He also quashed and differentiation of regional affiliation of goods and services. Internet has enabled the poor to have access to elite universities, and not to leave their place of residence, known clinical centers and operation rooms, etc.. The developing countries can immediately go to the introduction of new generations of technology, not respecting gradualism, which is an example of wireless Internet showed.

Internet is a positive impact on the attraction of foreign investment in developing countries and transitional countries, whether the relocation of the administration in developed countries with cheaper labor, or direct or indirect incentives developed in the construction of systems for the production of information technology. Thanks to the Internet, the poor can participate in the great world auctions and tenders, and in their countries to organize the auction. On the basis of changed organizational design, and management process in corporate systems.

In short, the Internet shows its advantages in the transition countries, as well as in developed countries. The difference is only in the intensity of this influence, which argues that universal Internet technology that can be efficient and effective in any country, culture, etc. Further perspectives of the Internet and the influence of the Internet on social and economic development will depend on the readiness of the state to assume responsibility for the improvement of this technology in all segments of the economy and society. Shows that the future of the Internet in the countries in transition will affect professional management increased the level of democracy and the establishment of shallow organizational structure. In what and how much are the phenomena to be improved, so measure should expect greater influence of the Internet and information technology in general events in the development..

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## **MANAGING COOPERATIVE TECHNOLOGIES IN INFORMATION SYSTEMS**

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***Summary:** The fact is that information technologies today have become a strategic resource of every organization without which one cannot imagine corporative success. According to calculations total expenses for informational technology (hardware, software and communication technology) in developed countries have surpassed total expenses referring to other basic means. Bearing in mind a large value and short term usage of informational technology a question appears quality management of this technology to justify investments in it and achieve certain profit. This paper aims at pinpointing the problems dealing with informational technology management in corporative organizations and ways of solving them.*

***Key words:** management, informational technologies, corporations*

### **1. INTRODUCTION**

Managing informational technology (IT) has become a part of management politics and strategy formulated at the highest corporative level. Influence IT shows in a company will depend on organization designing quality of information sector in the company and the way this sector is managed. Well organized and built information system makes managing this high technology easier, and is also satisfying not only for users within the organization but also for clients outside of it. Nevertheless, some corporative incidents worn that informational technology, the Internet may decrease productivity, especially within the organizations with live work staff, which refers to administrative sector of the companies. This does not only imply to the Internet but becomes a kind of a rule. Namely, nuclear energy is mostly consummated for useful purposes but was also used in the II World War.

Should the Internet be unlimitedly available to the employed or should it be limited, or control its usage, is a dilemma of top management. Followers of unlimited access to the internet state that it was made to be used and intensive usage can improve not only competency level but also corporative competitiveness level. One more alpha plus should be added to this. As the Internet is a global network which cannot be controlled, it is logical to justify the attitude that employed should use it unlimitedly, especially when they are looking for new substitute row materials, new ways of work organization, better technical support, etc.

But some corporative incidents show the need to think differently. For example, Lois Franxhi shows how technology can be inadequately used and misused. Namely, a twenty-eight year old executive made 150 inquiries on a vacation during working hours. Because of this Mrs. Franxhi was fired. Nevertheless, as in many other lay-offs the case was not simple as Mrs. Franxhi claimed that she was fired because she was pregnant and thus as sex discrimination was executed so she demanded to come back to the company. After the trial the court dismissed her claims finding that she was lying about internet usage when she said that she used it during lunch break only and as the facts show she was definitely using it for four days consecutively. [1]

Similar situations happen regularly in a large number of companies which appears to be a large problem to the management. It shows that informational technology may decrease live work involvement in business organizations but it does not happen because a large number of employed uses the internet to solve personal problems, as TV-shop, holiday resources research, fun and recreation, etc. Practice shows that hundreds of employed were fired because of access and distribution of material considered as inappropriate by their employers.

Also, top management must consider too large limitations of internet usage it may also decrease competitiveness and thus produce a bigger damage than saving when limiting internet usage. Nevertheless, excessive and

uncontrolled internet usage results in unnecessary expenses. To prevent this mechanisms are needed but also awareness and responsibility of the employed to use the Internet for purposes of improving corporate success. Practice researches in highly developed countries show facts as follows:

- Most of the countries increased internet usage by the employers in 2002. comparing to 2001. The percentage goes to 300% as is the case in The United Kingdom, while in Germany and the USA it is around 70%.
- After 2002. there is a tendency of internet usage decrease by the employed, which means more serious internet usage control by the management.
- All the corporations in highly developed countries performed certain measures in internet usage monitoring, which is understandable as each work that is not controlled has a tendency to deform.

Facts stated show the necessity to perform certain measures for adequate internet usage, before all through mechanism of monitoring electronic communication usage and performing organizational measures especially concerning high quality business culture and organization behaviour.

## **2. WAYS OF EMPLOYEE SUPERVISION**

Electronic communication is regularly supervised by national governments and corporate organizations. Employee communication supervision aim is to decrease loses in productivity through working hours loses. Time can be lost when an employee spends his working hours to check private e-mails or accesses internet for private purposes or dealing with personal problems. Employees can damage the company when they send problematic material, through image damages and also the damaged party may sue the company for damages.

Employee communication supervision is performed if suspicion appears that they send or receive personal e-mails or access the sites considered unsuitable by the organization. Typical examples of these contents are materials consisting business confidential material in high technology spheres, pornographic and artistic material. Some organizations even block the access to the news, sports and e-mail sites because of the time employees spend accessing them.

To define regular contents many organizations now have politics on allowed internet usage. For example, many universities, while accessing (logging in) or in computer labs and libraries have inscriptions on „allowed internet usage politics“. This will describe kinds of materials access to is not allowed, and also represent the ways of supervision. Scanning and filtering softwares are two of the most used supervision forms. Scanning softwares identify the contents of sent and received mails and pages accessed. Tools as Web Sense or Net IQ Mail Marshal or Web Marshal will look for specified words or photographs, (for example, pornography is identified by sounds, skin colour, and inappropriate contents are signified by adjoining file size and similar). These softwares also have the possibility of blocking and filtering. Filtering softwares as Web sense may signify and block other activities as follows: [2]

- Peer-to-peer (P2P) file sharing as MP3 audio files,
- Instant messages using Yahoo! Messenger or Microsoft Instant messenger,
- Managing usage of certain media (for example, audio and video) and other large capacity media,
- Access to specific sites, for example some companies block all news sites as [www.bbc.co.uk](http://www.bbc.co.uk) or [www.msn.co.uk](http://www.msn.co.uk), because analyses show that personnel spends too much time using them. Access to personal e-mail programmes as Yahoo! Mail, Hotmail or Gmail is also blocked. This would not be popular at universities but it is possible to apply it,
- Spyware programme searches sending information and computer gathered information,
- Adware programmes gather adds and uncontrolled adds, (pop-ups),
- Hacking by employees.

In limiting internet usage there are legal boundaries concerning employee supervision. Even though employee supervision belongs to European Law on data protection the article on supervision was not made to supervise individuals in the first place. In that sense, in July 2003. The Commissary Information Office issued a book of regulations called: Supervision at Work“which is the third part of data protection code.

## **3. MANAGING USER INFORMATION**

One of the elementary questions in managing information systems is managing user information within the organization. Especially important question is providing security and timely in securing user information. So, it is about reliability and time especially in public service sector where buyers should be enabled fast delivery or reservation or offering some other user service. Unless this is done the company may suffer large damage. So, introducing a new version of car reservation in use EuropCar cost the company 300.000 \$ because of the lost orders in three days while this system installation was performed.

Supplying personal service for the final users of informational technologies involves a large field of function. A distinction should be made between using applications created by others for final users and applications created by the users themselves. In managing informational systems solutions are looked for to supply both kinds of services. Robson pinpoints that there is a tendency of significant increase in both kinds of services and that both services used around 25% of the informational budget during the 80s of the last century, while during 90s the percentage rose to over 90%. [4]

Main user services which management can offer mostly go to the following:

- Offering services of help office. This service can solve the problems users have while using their own software, starting with the ways of using, problems that appear due to misinstallation, eventual software mistakes, and hardware problems in the net, etc. Service help must be offered as soon as possible, which is very hard in conditions of rising demands or complexity of the problems to be solved.
- To create conditions for fast and high quality service supply informational system management aims at rutinization, which means software standardisation. In that way problems are more easily found and removed, cost is lessened in service supply and enable easier information flow through corporative organizations.
- To ensure reliability in net function. Which means that when the system is down may lead to arising question of system security, which in service sector may produce customer dissatisfaction and increased costs. By increasing reliability may comparatively be an advantage referring other performances.
- To enable user education and training. This is one of the most efficient ways of increasing quality of supplying user information services. Users need permanent education in using standard and company applications, after they have been introduced into information system.
- To deliver informational services with minimal cost. This refers to minimization of total cost when purchasing hardware and software and expenses for their maintenance. There the accent is on total, not partial costs, because it happens to purchase relatively cheap hardware or software and while exploitation and maintenance shows itself to be more expensive and in that way not economical for usage.

In establishing high quality informational service special responsibility goes to strategic or top management. Through company development strategy, top management should define the level of money input and design in supplying services, whether it will be centralized or decentralized, informational structure, using corporative strategy and data protection and health of the employees.

## **4. MANAGING USER NETWORK**

User network is a subsystem of the information system which it must be dealt with as any other information system part. Rules of functioning of this part are partly defined by principals of the totality. Centre usually offers following services:

- Maintaining services including file servers, data base servers, inter net servers,
- Creating conditions for using user applications,
- Filing and information return,
- Network maintenance.

A large number of companies did not define expenses for managing user services. Number of PCs purchased is usually not dimensioned according to the needs, which necessarily leads to their increase, and thus expense increase, and work quality decrease. So, after revision has been finished, company Nottinghamshire County Council found that there are 6.500 computers for over 830 places. Also, research by Baner company to the sample of 500 informatics and financial managers in the UK showed that 47% of the questioned did not have means necessary to help software application revision which were used as well as solving other problems. This shows that network management and final user services is underestimated in some organizations and that this must be dealt with more attention.

### **4. 1. Managing information service costs**

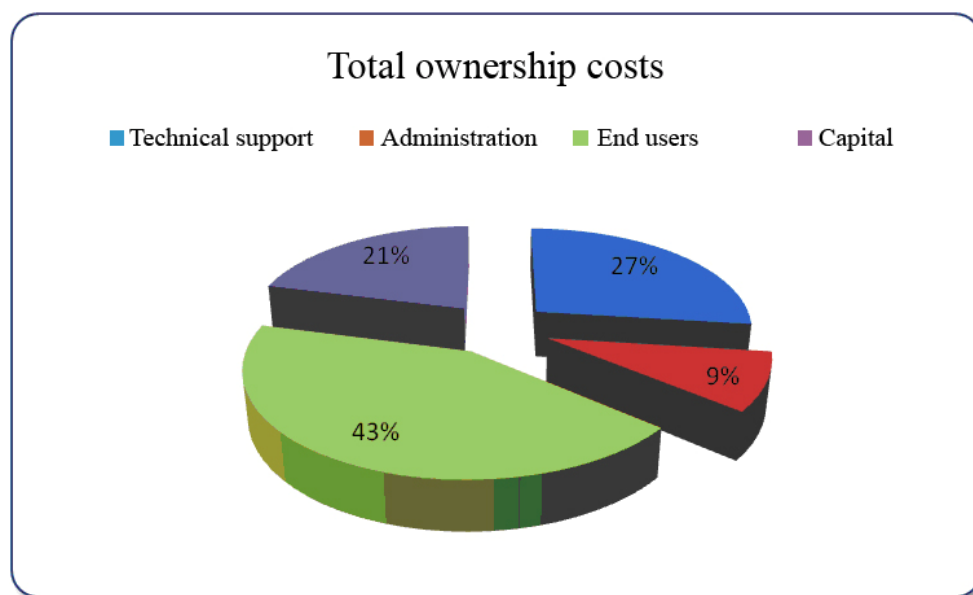
Former question is in direct connection to final cost for supplying services. The practice shows that in user information support there is a stereotype, that every introduction of information technique and technology increases business economy. Here a difference should be made between expected and real, which implies the need of permanent questioning of input in user information and any other support. More and more information and financial managers see that each computer in the organization produces expenses and that at the level of corporative organizations the expenses may often be overcome including the effects made by their introduction, especially if the information technology is introduced because it is fashionable nowadays, as it is often the case in unprofessional management in developing countries. In companies which take care of informational technology costs it is done in classical way. Traditionally corporative and other organizations decide upon costs

judging by acquisition or listing prices, not bearing in mind maintenance costs and their users, as in offices and user help centers, user information management costs. These expenses are not negligible. According to research Office Institute which offer user services from 2004. Average cost of reporting and fixing the problem by telephone was 20 dollars. Problems with e-mail and internet were lower and amounted up to 16 dollars.

The importance of IT cost, added to purchasing costs are stressed in the USA, in the middle of the 90s by Gartner group. This organization proved the annual cost of computer services which is included in total owner costs (TOC), amounts up to 8000 dollars a year. This special organization shows that other costs should be calculated here as they objectively arise in case of placing the computer out of order, as follows:

- Productive work time loss when users are not able to use their computers, when they wait the problems and damages removed,
- Productive working hour's loss when somebody tries to solve a problem a colleague has at work. Analyses show that this support can be very expensive, as it is about unofficial and incompetent support, especially when serious problems appear.
- Disposable material usage as paper and toner which are often forgotten may be a significant part in offering user information services.

Taking part and structure of total costs of the computer ownership can be relatively well presented by this picture 1: [5]



**Figure 1:** Total ownership costs

From the previous you can see that all the costs can be divided at desktop costs (referring to hardware and software costs) and network costs dealing with managing communication and network system. „Desktop“ expenses are 2/3 of total expenses. In broader sense, other expenses refer to final users support expenses. Further studies showed that if companies manage their computer resources carefully they can achieve up to 3100 dollars of savings a year. At corporate level, it represents large savings that may positively influence improving price competitiveness through decrease of the final product cost.

Hardware seller Compaq offers fine resources for managing TOC (look at links at the end of this part). They say that organizations may lower TOC the most effectively when they make three complementary investments: (1) personnel training (2) process coordination and (3) technology acquisition which are easy to manage, service and support. When analysing they start from the following: [6]

- Final user's education and training in IT of the employees is an optimal way for cost control of technology usage. This deals with employee productivity increase and making them able to solve their problems personally in case of a problem in using information technology.
- Controlling the process – means automatization of some businesses and working assignments and their coordination with other parts, from listing active to bringing the software up to date and building it up.
- Acquisition of certain information technology which means acquiring or taking by listing information technology that minimizes and in some cases eliminates the broader fields of assignments which require intensive or handwork.

Total costs for computer maintenance can also be decreased by using simpler and cheaper hardware.



## 4.2. IT help office

IT help office is in many ways important for developing information systems in corporate organizations. It deals with service sphere and as such may function as help for its own corporation and, or in function of offering services to the others, especially when capacities are not sufficiently used. They are forerunners of forming special and specialized organizations in agencies which are exclusively involved in offering informational help to final users.

The office for IT help is a central service in organization which offers help to final users as telephone support, education, recommendation and development. In the past American expression „information centre“ was used, based on the concept developed by IBM in the 80s of the last century. Typical information centers developed during these years were described by White and Christy (1987). In the UK and Europe equivalent terms which are usually used are general expressions as „IT support“ or „Help office“. But modern offices diversified their services and they offer more than telephone support to their users. They offer more or less all the services needed by final users to use and develop applications. Service assortment offered by typical IT help office are [7]:

- Help office support for dealing with user problems. Mini study „press „delete“ for those who use IT time shows the type of the problem often dealt with and how to decrease expenses by educating users.
- Offering advice for software acquisition. It will ensure appropriate software for the use planned, its compatibility with hardware, other softwares and corporate acquisition plan,
- Offering advice for hardware acquisition. It will usually represent centralized standard, to enable benefiting from discounts and limited possibilities of contacts concerning support.
- Supplying advice on using final user development. A support person will suggest the best way for software development, as for example in following main parts of the life cycle of the system. Those parts may be defined more precisely in detailed education.
- Application development. For larger systems, help office personnel may include in system analyses and designing or more complex aspects of programming.
- Education at all levels, especially concerning packages or techniques for developing information systems.
- Managing data. Managing and distribution, data transfer to final users or explanations for using specific models.

There is a tendency that many IT help offices are now becoming external source for other companies. For example in Rolls –Royce, user support is now provided by EDS employees. Microsoft represents external source with its help office to many other companies as HP, and offers help concerning applications and operative systems of this company.

### 4.2.1. Ways of improving IT office

Recent research of the leading British agency for supplying help with employment was more than surprising. IT sector employees lose on the average 20 hours a month for solving simple problems which today office workers could solve them. The survey was made at 150 IT professionals by Computer People to measure the time IT employees spend to trivial questions asked by workers every month, and that time could have been used to more important IT questions. Results show the following 5 most often causes of wasting IT office time [8]:

1. Why is my neither monitor nor working?
2. My printer is stuck – can you fix it to function properly again?
3. Why can't I send more mails?
4. Can you please format this?
5. Why can't I save this to a floppy?

These problems are usually easily solved in 86% and do not require IT support. But 64% IT professionals are surprised at how often they are called to look at broken monitors to find out that it is not plugged in, 52% of the questioned claim that they are regularly asked to pull out a jammed paper from the printer, 54% are asked to change toner cartridges!

These researches also show that 46% IT professionals are questioned by employees who simply used all their mail memory space, even though this could be avoided by simply deleting old mails regularly. Around 35% support personnel say that they are bothered by those who have not removed floppy blockade before trying to save a document on it.

Karol Hepburn, commercial manager of Computer People say „in these technology times there are no excuses for office employees who do not spend even a minute of their time to solve the problem they have, but are always ready to take the phone and ask for help whenever they need it. Amount of time IT professionals use every month on solving simple problems which modern office employees should be able to handle themselves is almost three days“.

This could be avoided if IT personnel identifies simple problems, but require too much time to be solved and worn employees to solve them themselves. Certainly, some problems can be solved by IT sector employees only, and if that is the case following advice can be useful.

The most important advice for IT professional help when there are computer problems all around gave Computer People Company: [9]

- Send the most important tips for the week. This is an excellent way not only to inform all the computer users in the office how to deal with simple problems which may appear but also to avoid unnecessary cost of your and company time.
- Turn to cooperation. It is known that being uninformed is very dangerous while in action. You should not forget that IT specialists were educated to be patient, to listen and analyse. Those who need help are not trained for this so they must try to be patient and ready to help even if the problem is very simple. It must be understood that solving computer problems by the phone is harder but cheaper for the IT office, so competitive advantage may be achieved in comparison to other IT offices which deal with problems in a more classical way.
- Stay calm and support your user. If the problem is big a worker may panic. To calm them down support them a lot, think about problem solution and not at your position and personal respect.
- Communication with nontechnical user must be clear. You should eliminate technical language. In that way participants in communication will understand better where the problem is and how to solve it, or avoid it in future.

Above stated shows that many problems are trivial. Analyses show that more education of final users potentially might save money, as smaller number of workers would be required for IT support. Alternatively, support personnel could spend more time for activities as using tools and information.

#### **4.2.2. Future ITS Support Offices**

Researches show that in modern conditions, IT support office is not appreciated enough, that it is valued only when problems occur and the whole corporation is blocked, etc. It seems those office agents, specialists and their clients and are to some extent rude, especially if they often communicate or solve repeating problems. Concerning this state a question arises what the perspectives for IT support office are?

Further predictions are given based on Andrea Baxter's attitudes [10].

In the 21st century each sector must take care of their attribution to company development. IT may not dominate directly in creating profits by other clients but the times when it was enough to log on, follow instructions and simply close the programme are over.

New business mantras today are „business value“, employee satisfaction and especially „client satisfaction“. Modern office for help is considered as basic business function, not only as a face or voice of IT sector. Key elements of the whole management strategy is aimed at building IT infrastructure which will function better and which will the companies gain from.

Will the help offices survive when the trend becomes usual? „One should expect less people answering intelligent questions, but there will always be people asking or look of consultations, even if they are more or less sure that they have the solution of the problem“, says Mr. Miller. Mr Kendal from the institute for office help agrees: „IT help offices will not totally disappear for more complex questions or transactions. Reports on self-help softwares will have to be sent somewhere and help office responsibility will rise one level up, so that they can follow all of this. But this will happen in more than 20 years“.

## **5. IT APPLICATION BY FINAL USERS**

Developing applications by final users represents a significant trend in using information technologies in corporative organizations. It is usually considered as a failure of informational sector. Reasons for this trend should be searched in increased informatics literacy of the users themselves, insufficient recognition of the software makers which users need as well as improving information technology which is more simple and enables users to create new support systems of all the segments in the corporation.

Less important reasons for developing informational softwares by final users are:

- A will of the users to analyse data, make enquiries and create reports using information from the base available to all in corporative network, marketing channel, or some functional areas,
- Organization decentralisation trend by subject or geography principle, so computing becomes available for sector activities support,
- Decreased expense of application development when made by final users (from the sector, not from the budget or informational system sector).

- Better connection of final user softwares and their demands (because translation and coordination between a user and third party – programmer). Final users have less chance to over analyse solutions for simple problems than IT professionals would do as they have a tendency to view each problem strictly expertly, without possibility
- of improvisation which is often necessary in business sphere.

This trend may improve all the elements of the process in bringing managing decisions, and also a system of decision making as a whole. McGill and other explain that: „Final Users Applications,, (FUA) are computer based applications for which professionals take responsibility who are not assigned to information systems. They support decision making and organization processes in most organizations of corporative type. “. [11]

A growing number of users do their own softwares or working document models to help them bring management and the decisions. This was not possible earlier when there were no computers on each table. Popular softwares as Microsoft Excel, Microsoft Word and Microsoft Access has improved this trend because they contain macro languages and complete environment for computer language development and also applications through Visual Basic for applications (VBA). Development and using of various working documents and report systems is overcoming example of FUA today. There is also final user filing of specialized softwares. For example, specialized informatics tools as Business Objects and Cognos have a special language of questionnaires based on SQL for users who should define their questionnaire ad hoc and create standard reports.

Previously, before such softwares and hardwares came to be the users completely depended on IT sectors are the third person – supplier, who were supposed to write such applications. As IS sector focused on developing strategies user requirements of lesser importance were often disregarded.

### **5.1. Applications and tools for development by final users**

There is a large assortment of possible applications by which final users may develop software, among which managing softwares. Typically, those are applications of less importance, for sector purposes mostly suited for final user development. Most tools and instruments aimed at regular reporting and programming are dealt with in this part. It rarely happens that the final user will make a programme by using a language of lower level. Practice shows that the following applications are in use, which may be in function of bringing management decisions and so [12]:

- reports from corporative data base using standard instructions given by IS/IT function,
- simple ad hoc questionnaires in data bases defined by the user. For somebody in avio industry, for example, this may be approach for new base as systems for client reservations or crew assessment system to see efficiency of every crew member individually,
- „What if?“ analyses uses tools as working document models, or specialized tools as packages for managing risk and finances or softwares for easy business use which are used to supervise trade, or marketing information efficiency filed in data base.
- Writing company information for internal network,
- Developing applications as tools for defining work cost or system for spacing production, by using highly developed tools as application generators, managing systems of computer data bases as Microsoft Access or Borland, or surrounding for visual programming as Microsoft Visual Basic, Borland Delphi, PowerBuilder or Centura.

User wants to use clear and understandable tools, to be able to use data base, and by help of which mke tables and graphics.

### **5.2. Benefits of software development by final users**

There are certain benefits for software development benefits by final users. Some of these benefits were seen by final users themselves as work variability and possibility of application usage earlier that the others. Besides, IS personnel can be concentrated on key applications, critical for business missions as creating information support for top management, or coordinating relationships and solving conflicts in marketing canal. Improvements in these two areas also mean benefits for the organization as a whole. The full assortment of the benefits includes [13]:

- Decrease of professional analyst, programmers and employees number in IS company (and decrease of expanses for hiring consultants outside of the firm),
- Decrease in expenses when users explain their demands to IS professionals and decrease of expenses caused by misunderstanding of demands.,
- Help in decrease of the rest and application development connected to centralized application development in IS sector,
- IS personnel may focus on assignments demanding their expertise, as corporative system maintenance,

- The possibility of faster development at sectors so the business may benefit from new applications faster and thus gain advantage over competition, ,
- It may support innovatively and creativity in IS/IT, because biocratic obstacles may be removed. Macgill and others stress that benefits from developing applications by final users is most important in increasing productivity of employed and their efficiency, which results in higher similarity of the applications and needs of the users because the final user is a programmer and the person who understands best all the required information.

## 6. CONCLUSION

It may be said that IS manager has two main choices when deciding between IS strategy and developing information user support. It may be paraphrased as “take it or ignore it”. Option “ignore it” may seem to IS managers as a threat which damages their control. Really, they will not completely ignore those who develop final user system, but will not do anything to improve it. Those managers who want to accept developing final user systems will probably understand that it is unavoidable, bearing in mind insufficient approach of the personnel to develop applications, growing personnel abilities, and availability of the tools for producing specific applications. Final user system should be supported to decrease remnants concerning applications and to ensure that all the requirements of final users are well understood and the answer to those are softwares well developed. We saw that a rather serious problem may occur with developing information subsystems of final users, before all because of lack of experience in developing systems and managing among final users and their managers. Bearing in mind above stated, it is important that there is a application support and control strategy for final users, whether the IS manager ignores or accepts the intersystem of final users. Many of these risks and problems appear as a result of the lack of experience in developing system area, together with absence of education for final users. Improving final users must be understood as a IS strategy and manuals for their usage should be used. Techniques for functional characteristic improvement include education, introducing standards for development, guidance by the personnel for supporting final uses, data and software revision, corporate data insurance, etc.

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## **INFLUENCE OF INFORMATION TECHNOLOGIES ON CORPORATIVE MANAGEMENT**

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***Summary:** Information technology influenced designing organizations and management process strongly. It enabled flexibility in projecting different organizational structures and especially decentralized and dispersed organizations. Organizations made on principle of decentralization are the opposite of concentrated and centralized organizations which dominated in classical organizations of the past. Making new and quality organization or management process is possible by applying new technologies and before all information technologies. The work is aimed at pinpointing more important influences informational technology application imposes in modern corporative management.*

***Key words:** Information technologies, influences, corporative management*

### **1. INTRODUCTION**

Concentration and centralization terror rained for a long time. It was considered that centralization and autocratic management were the best management solutions and the more company looks like a military organization the more successful it is. These organizational solutions proved themselves to be efficient in the past. But in modern conditions centralization showed itself to be organizational solution of low quality as it slows system dynamics down which is decisive for corporative success in these turbulent times.

Introducing information technologies as strategic change in corporative organizations enabled making more successful organizational model than centralization and that is decentralization or decomposing of large organization systems into so called profit centres. Information technology enabled moving administration and other organization parts into other countries where cheaper human potential exists, and nothing is lost in quality of management decision making. Of course, each process of decentralization must be followed by a process of integration or reintegration of parts into a whole. Merit for this belongs to Internet and information technology which brought down national and is now bringing down organizational barriers at corporate level. Not only that, it brings down barriers between individuals employed in organizations. Each individual no matter where he is, at any time, information from certain area may be available which increased flexibility and dynamics of corporative organizations.

This flexibility is an innovation in corporative sense and is made by using information technology which showed new possibilities in comparison with earlier technology innovations of classical type. Namely, most of the previous technology innovations increased optimal size of the companies by decreasing production expenses through volume economy growth and looking for a volume of production or service supply that give the largest effect. That happened with application of steam, electric energy or railroad which enabled transport cost decrease because of mass production or transport as an important part in product and service calculation. This technology enforced centralization as a model of organisation design. It can be said that centralization and concentration as forms of organization dominated the twentieth century and they were considered the most acceptable as forms of structuring organizations. This attitude is still popular today with classic economists and managers by which they try to find the most optimal solution through techniques of optimization.

Reasons for the above stated should be searched for in indisputable fact that imperfect information system enforced the need of vertical integration and connection of organizations or organizational parts into a whole for purposes of decrease of individual cost. In these circumstances companies tried to produce all the parts and

components by concentration, thinking that it was more secure and that it decreases dependence on other companies and also that it is cheaper as in that way they decreased expenses and time of searching the most suitable suppliers, revoke expenses of middlemen, ordering, etc. In the past, these expenses were low so companies tried to make a lot of things in the house, which made them big by nature of things, and at the same time too large to manage.

But, corporative organizations by digitalization of certain sectors in agriculture and society increase approach to information and decreases transaction costs between a seller and a buyer. This happens as in national thus in global level, which decreases the economy of volume and enables transferring capital and opening branches in other countries and that business success was not compromised. On the contrary, in newly set relationships company success increases. So, thanks to IT, space decentralization did not bring timely and quality informing into question, as by simple pressing a key you can get a relevant piece of information fast from any part of the world and it is the same as getting information from the same city.

Thanks to informational technology the company may have a management in one country, production in the other, traffic in the third, and accounting and informational system in some other country or even the other continent. These parts of corporate organizations are net connected and thanks to IT function as they are at one location only. That is why companies without Internet are considered traditional and obsolete today. In the large number of cases partnership is conditioned by introducing this strong technique, especially when supply is in question.

Bearing in mind a large number of influences which Internet shows in corporative organizations, further will special attention is paid to influences on specific elements of management process.

## **2. INTERNET INFLUENCE ON ORGANIZATION DESIGN**

It has already been stated that Internet became revolutionary innovation. It helped abolishing national states and moving towards the world of connecting and netting. That is why it is often said that the world moves from national states towards the Internet. Revolutionary features of Internet can be seen in the influence it enforced and is still enforcing on business sphere and personal life of every individual. When dealing with corporative organization, Internet decreased its size and depth and increased power of small companies. It is indisputable that this technology fastened communication and created important potential to improve making strategic decisions potential. Each of stated individual changes and all of them together have changed some parts of organizational systems, especially when service organizations are in question.

### **2.1. Organization size decrease**

The opinion that global economy is dominated by transnational and multinational companies dominated for years. Size was one of the criteria to measure strength; it was assumed that service organizations that had larger storage capacities, selling objects (shops, department stores, shopping moles, etc.) were more powerful. The same applied to traffic, hotel, educational, health and other systems. According to this everybody wanted to have as big assets as possible, objects, or property which enabled doing business. This attitude is present in modern conditions, too, but is retrieving before Internet that changed many traditional things or gave them different meaning.

So, by introducing Internet as global network, the term size became disputable, problematic and in a large number of cases controversy. There is a big question of what is big and what is small? Is the company big if it has a large number of people, big active (property), and a large number of buyers, a large traffic or a large profit it achieves? If the size of the company is marked through stated parameters, a logical question appears, what is the quantification or size by which we can consider a company small or big and finally what are the parameters to be taken for quantification or what is the set of parameters or elements.

Similar situation is with multinational and transnational corporations. Not trying to explain what is one and what the other, the fact is that these terms mark broadening of the company out of its borders, by joining private and state capital with an aim to achieve direct and indirect effects.[2]

Can companies that have a few dozens of employees, and do not possess buildings, land, furniture, machines, location, etc. Be multinational? Is it necessary to reconsider the vocabulary of organization and management? In classical way of doing business and understanding organizations it would be unacceptable because, here quantifications are important, which means that corporations are dominated by a system of large numbers when all the resources and elements of business are considered. It is also supposed that such gigantic enterprises do business in a bigger number of countries or in different culture and social areas.

By modern interpretation of the term large are the companies with large profits, regardless their turnover and with what assets they gain the profit. When Internet is in question, companies are no longer on specific locations that are furnished, fenced and inside whose walls production is done or services offered. According to this both

Internet and multinational corporations can have a few employees, may achieve large turnovers and profits and can do business in a bigger number of countries, even on a few continents. A constation brings us to this fact:” I have a company called Megatrends L.t.d. and we have 57 joined investments in 42 countries, but we have only four employees, including me. We do everything by subcontracts. Well, almost everything. So, I am a multinational company. I obviously am as I am present in 42 countries. But I am not big but small company” [3] Such understanding of size brings us new corporative possibilities, which first of all apply to flexibility. Internet technology increased flexibility and speed of reaction to changes that come from the market. Namely, for traditional building and reorganization of companies it took years and large financial investments. Today, web can be cancelled, organized or redesigned in a matter of hours with small financial investments. These changes can be done in accordance with large intensity of changes which come from the market. From the previous we can clearly conclude that Internet in economy of the word multinational, transnational, big or small, as other phenomena by which we describe a state of things and processes get new meaning. So, size still stays dominant, but is shown by other criteria. Practice shows that there are big nets today but not big centralized organizations. The power today, is in large nets, and by that we understand many individuals and organizations that are joined in nets and who achieve corporative goals through mutual interaction.

## **2.2. Information technology empowered small companies**

Small companies as it was stated may have minimal number of employees and be big in spite of this, and at the same time, large companies measured in asset value may be small by turnover or profit they make. Small companies grew stronger and can often be more successful than large companies, as a value of a small chip of a few millimetres can be greater than a value of a ton of hardware. In the Internet business a radical change happened, where Goliath became David, which completely turned traditional understanding of organization but its classic design, too.

Bearing in mind stated influence, corporative organizations of transnational and multinational type aim to achieve their success, again by IT. The solution was found in decomposing of big into so called profit centres, and that by criteria of circled service, so that business result could be expressed in each part, and connected to this an appropriate reward system Organization theory shows that each large system can be disassembled to its simple parts, but this has sense only if decentralized or decomposed parts connect again in coherent unity, so that effect of synergy can be used which leads to so called integrated decentralization.

Decomposing does not compromise conditions of doing business nor speed and quality of strategic decision making. On the contrary, Internet enables integrated decentralization, especially in communicational connection of some decentralized parts, or profit centres into a unique unity, for purposes of using effects of the unity. Thus structured organization leads to higher success as it is known that the effect of joint effort is always bigger than simple adding of partial works. Thus comes joining people into organizations and organizing joint work at one place. Thus, Internet connected different individuals on different locations that they can jointly and by the same algorithym and trajectory do certain business and working assignments, and that they are away from each other a few thousand kilometres. So, IT first decomposed and then integrated decomposed parts to function synchronizedly, as they are at one location”. [4]

Bearing in mind above stated, it came to a decrease in 500 largest companies in the world ranked by a famous business magazine Fortune, by a double, at the end of the second millennium comparing to participation they had in 1970. Namely, 500 most successful companies took part in the USA economy by 20%, and about thirty years later the participation decreased to 10% with a tendency of further decrease. Calculations are that their participation will decrease to 5% by the end of 2010. [5]

So, today, small companies make over 90% of world’s economy. They represent a base of global economy and can be of different sizes, and even may employ one person only who can do a large number of communications of higher quality than a hundred employees could do. The good example is set by publishing houses which often employ two or three people, create books on computers, e-mail them to other countries, often to other continents to be printed and they distribute them around the world. Companies like these can have a few people but can represent large players in global economy.

That is why we should remove prejudices and stereotypes coming out classical economy, that base of world economy are made by multinational companies and other large organizations of corporative type. On the contrary, thanks to the Internet, today’s global economy is based on so called „solo virtual players”. Namely, statistics and numbers say that in modern conditions over a half of American export do companies with less than 20 employees. In the USA only 7% of the export is done by the companies with 500 or more employees and the USA are the largest exporter of the world. The numbers are similar in western European and other countries. For example most of the enterprises in New Zealand, which belongs to a group of developed countries, are small and middle enterprises from telecommunication, banking, insurance, traffic and other services sector. More than 96% of these enterprises have less than 20 employees. Enterprises which have 100 employees make only 0, 5% of total number of registered firms. [6]

Global economy of the twenty-first century will be Internet economy. It will be dominated by small and middle players. The more global economy gets the better must parts be connected. In this sense a larger role will be placed in the hands of small players or companies. Each part of the organization is relatively autonomic and dependent on other parts, so it can be said that there is no absolute autonomy in natural organizational order nor can it exist.

Global business network in this question can be compared to the internet as global network in telecommunications. On Internet there are a few hundreds of thousands networks which are all connected to network of networks. The reason for the Internet to get this big is the fact that it is completely decentralized to the level of an individual. It is actually made of hundreds of millions (the number is constantly changing) autonomic parts that can again become or create a billion autonomic parts. Internet is a network, but it is at the same time completely decentralized system. [7]

Because of the stated, far most important thing which is happening today in Internet economy is connecting companies. This is a radical and fundamental change which changed the world and will continue changing it in the sense of connecting continents and national communities. The thing is that world will not be dominated by America or China but the network. It is not important who will join China but who will connect to Chinese, American and soon India internet, or who will join global network.

Previous fact says that in highly developed countries Internet dominates, which mean small enterprises do that and that implicates that firms become flexible in business in general, it is easier to change one business activity for the other and follow trends and requirements of the market.

### **2.3. Management “range” decrease**

Internet abolished the importance of location at a large number of service segments. Stated abolished the importance of location and decreased the depth of organization, abolished hierarchy or place it on other basis. In the things stated we can be completely assured day by day, as it is clear that net does not have general management nor does it have management board, structures that should motivate and get people for their ideas.

There is no centre and periphery in a net. A century long importance of a centre in classical economy changes its place and importance in network economy, for the first time in human civilization. Now the centre is often at periphery understood in classical sense. The centre of all the centres is a buyer. For the net to function each individual must feel as a central unit. Otherwise the net will not be powerful and its power is defined by a weakest link in a system of connections which brings us to new relationships in corporative organizations where each individual is important for achieving corporative mission. The main feature of the Internet network is that it is permanently broadened and growing and at the same time, speed of data delivery and communication is increased. This does not happen with any other phenomena except information technology, as a rule if a company grows or broadens, all the business processes get complicated and more slowly. This is possible as net improves and organizational design is done towards internet requirements. So, internet network gets bigger but the knots get smaller which improves system dynamics and its efficiency.

By decrease of organization size interior design has changed. Classical organizations functioned and function at a principle of “deep range” with a large number of hierarchy levels. Under term “control range” we think of number of employees per a manager. [8] Classical organization tried to find out an optimal number of employees per a manager, bearing in mind an average capability of a manager, his technical support, educational structure of employees, etc. So, at the top of hierarchy pyramid, as Fajol said, manager can communicate with 3 – 5 employees, while the number at the bottom levels may be around 12.

It shows that in modern conditions and especially with companies which applied information technology, this rule does not apply and that control range is conditioned with a number of numerous relevant factors as: activity type, technical equipment, abilities and skills of the managers, qualification structure of the employed, level of decentralization, etc. For a manager, even three communication connections can be a lot while for the other even eight communications may not suffice.

Not entering deeper in explanation of classical organization characteristics with this question, we can assume that information technologies and internet decreased “control range” and made traditional pyramid shallow. Internet as a tool creates a possibility for faster and higher in quality, actions of all the types of management because it enables faster and better quality communication with cooperatives, thus a number of connections to which a manager can communicate increases.

Thanks to Internet and Internet services in a large number of company’s hierarchy levels are abolished or decreased. Internet lovers and bureaucracy critics tried to promote the idea about the end of hierarchy, and thus the rights of some to issue orders and the obligation of the others to follow these orders. Thus, in a large number of cases a middle management was created which took the burden of the organization, and its functions were partly taken by top and other part lower management.

Eliminating middle management in a large number of organizations and before all in large business systems of service type decreased bureaucracy and hierarchy level number but produced new problems, unexpectedly. By



middle level abolishing and role and function transfer to the highest and the lowest levels of management, management system was beheaded, as it is known that the middle management system does not only have the role of receiving orders from the top management levels and their distribution and transmission to the lowest levels. Its task is to participate and create strategic decisions, and after they have been formulated and made to work on it and make it acceptable for lower hierarchy level realization.

Bearing in mind above stated a large number of the organizations cancelled middle management level and thus decreased corporative success. Management system became inefficient in these circumstances because as top management got burdened by details and technical work, which decreased its capacities and potentials for formulating and applying strategy of company growth and development as its primary task. It also showed that lower management was not capable of solving more serious problems than problems he is capable of solving so equilibrium of management levels go disrupted and thus to decrease in success.

Concerning this we should state that hierarchy will never be eliminated from business organizations, regardless the level manager profession is organized, and this from reasons that hierarchy is a natural phenomenon. It exists in natural and according to this it must exist in organizational order. The things changed by the Internet are basis on which hierarchy is made. There is no doubt that Internet abolishes hierarchy based on management or individual power whether it deals with the owners or chosen managers. In the Internet economy the highest hierarchy level has knowledge or people working with knowledge. It is at the same time a resource that will dominate organizations of the future.

Bearing in mind that organization cannot function without hierarchy it was said that levels of hierarchy can always be discussed. Internet undoubtedly created conditions to decrease layers of some hierarchy levels, even in middle management.

In that way corporative organizations increased their flexibility in all the elements of management process, increased speed and quality of management decisions and introduced fast reaction to changes which come from the market, or from the buyer – consumer. By decreasing the number of hierarchy levels we do not decrease management power, but on the contrary increased. According to this, manager power is not in direct proportion with the number of managers in an organization as it is often assumed. Internet as a new technology increased manager power in big systems and enabled responsibilities in decision making to be brought down, to where problems to be solved fast appear. Large corporations are forced to do the stated to survive. They decompose on parts or confederations of small, relatively autonomic companies so that through processes of contracts and connections they are integrated again.

For example, a big world's company from the USA which is in business of electro-engineering, Asea Brown Boveri, is divided to 1300 companies and 5000 individual units. One of the most famous leaders in the world of business, president GE. Jack Welch says: "What we always try to do is to get the soul and speed of a small company inside our large company's body". Paul Allaire, the chairman of Zerox, does something similar. Then, there are AT&T, Grand Metropolitan, Coca-Cola, Johnson & Johnson. The list goes on. When AT&T announced that it is going to be broken into three companies, stock value 10 billion dollars. While Louis Gerstner, IBM manager is speaking about setting small company attributes he is doing completely opposite as it seems. He centralizes everything.

So, Internet decreased "management range", deep organization structure made "shallow" and in that way increased dynamics and flexibility of corporative organizations. The tendency is to make deep pyramid structure smaller which would fasten informational flow, and thus improve management decision making quality.

### **3. INFORMATION TECHNOLOGY INFLUENCE ON DECISION MAKING AS AN ELEMENT OF MANAGEMENT PROCESS**

Internet has improved managing corporative organizations, as human labour was decreased, many processes were mechanized and causes of numerous obstacles eliminated which in the first place happened and caused employee relationship problems as a key factor of every success. By using Internet management is capable to rationalize numerous processes in company management, and because of that can have more time to deal with human potential, before all in finding ways to motivate people to achieve defined aims. In stated circumstances management can spend more time for creating positive innovative atmosphere and innovation support.

Decrease of organization volume, its decomposing in "profit centres" and decrease of "range" in management brought to other qualitative and quantitative influences and changes in corporative organizations. The most important effect was seen in the sphere of management. Thus, if we decrease the range of management, there are more employees under one manager which prevents control of every behaviour and way of work of the employee. This in fact, increases democracy in organization and the need that each individual does his business activities, not waiting orders, instructions or guidelines from the higher level.

Internet brought and is still bringing bureaucracy and instruments used by bureaucracy in question. Taxes and other impositions were basic strength which supported formation and then existence and broadening of

bureaucracy for centuries. As introduction of IT brings tax and other impositions into question, this is the first large danger for bureaucracy. Because of these regulations, agreements, orders of the state and state organs were brought to question. Bureaucracy in the classic sense most often pronounced words “no” and “you cannot”. In conditions of Internet technology it will disappear, and at places where it survives it must be transformed radically, to learn to say “YES” and find ways to solve and solve problems. There are all the conditions for the internet and information technology to completely marginalize classical governments, their administration, etc. and to create a new kind of democracy or technocracy which will enable a higher level of freedom in every individual’s life and work as well as of corporations.

Example of distance learning confirms that. In the classical education system there was a division and high autonomy of universities. Precise procedures were planned for enlisting students and education process organization, which had to be followed. Exams were taken “face to face” when a professor asked and a student answered what was written in recommended literature is a long term university practice. By introducing distance learning, people take their studies from a distance, they learn when they want to and they take their exams at a distance. What that means for education economy and student satisfaction we should not explain.

At the other side educational institutions decentralized. We do not need agreements and permissions to study abroad, or in other countries and often in other continents. Thanks to informational technology and Internet, today you can live in Germany, work in Belgium, and distance study in Sydney. Thus bureaucracy instruments were terminated, and the same happened to diplomas which were a lifelong document that confirms knowledge level of the individual. A diploma has long been a certificate by which you enter a company, but whether the individual will stay at the company did not depend on a diploma but on that person’s knowledge.

By introducing information technologies and the Internet human role was not decreased. It was on the contrary enlarged, especially when dealing with critical positions in business process. Connected to this we say: “Whatever corporative structure and protection we make, nothing can guarantee success, if individuals in the structure do not function with a real level of independence, motivation and expertise, before all in management team and then with the other employees. [9]

So it is evident that Internet through availability and dispersion of information and decrease of monopoly of information which managers had decreases the possibility of bureaucracy method of management. At the same time Internet creates conditions for introducing democratic or liberal style in management which shows a higher level of success in modern business.

#### **4. INFORMATION TECHNOLOGY INFLUENCE ON CORPORATIONS**

IT made radical changes in the sphere of coordination and connection of companies with surroundings, some participants in corporative product and service, as well as joint functioning among some organizational levels. Internet enabled connection of different organizations into a unity which enables more successful realization of joint aims. Thus electronic connection of different organizations brought to new organizational forms, or organizational connections and that is cooperation. This form of organization enabled that companies finalists turn to specialization or letting specialized companies to produce specific parts and services and thus achieve advantages given by specialization. So, decentralization and cooperation have sense only if decentralized parts of the company or organization connected by cooperation into a unity for purposes of using synergetic effects. Considering the fact that IT enables efficient mutual information, it enabled different firms to concentrate to what they are best at, and to get other components of services and products from the companies that likewise specialized and do what they are best at. All above stated leads to economy increase of specific or a unity integrated parts.

On the other hand Internet improved communication between marketing canal subjects. Dividing of classic marketing canals led to each subject to behave autonomic, following his aims and not thinking about the others parts. Partialization of interests always gives lesser effect, because of what it is asked that interests are considered from the point of view of the marketing canal as a whole.

Internet enabled by connection and information sharing between members of the canal, to initiate cooperation and to make the highest quality decisions. So a producer takes care of the interests of a grosser, and a grosser about interests of a producer and a detailer. In intercommunication the aim is to make the most favourable decision, or decision that costs the least on the canal level. This is normal because a buyer does not care about which subject in marketing canal has satisfying and which subject has bad economy of business. He is only interested in the final price and if it is satisfying goods or service will be accepted, if not, the buyer goes to a competitive firm.

Thanks to internet, now contract relationships between subjects in marketing canals are marginalized as the contract is classical instrument of relationship regulation between contractors and also an instrument where each side wants to get more from the other. Namely, contractors understand a contract as a ring where a gain for one party is a loss for the other. Because of that partner relationships are asked for and while building them internet

can considerably help. In partnership relationship each side behaves the way it wants the other to behave to her. Being a partner means to understand difficulties of the partner and trying to correct them. Internet improved communication with surroundings. This communication got in importance during the last two decades, when corporative society responsibility came out in the first plan, as a phenomenon in which management apart from the responsibility for corporative success and responsibility towards stockholders has a responsibility towards the surroundings he lives in. Mutual information exchange, as government organs, health, culture, sport and recreational and other services which are often a condition for successful organization function. In that sense government organs and corporative management often cooperate in decision making at local management level and corporative decision making. This cooperation is necessary as one company bankruptcy leads to big problems in the surroundings, considering the fact that the company finances certain projects, through taxes fill the local government budget, etc. It is not rear that local government and the company have mutual information centres, or take part in financing infrastructure for more quality communication.

## 5. INFORMATION TECHNOLOGY INFLUENCE ON CORPORATIVE CONTROL

Control is the fifth element of management process. As in previous elements, Internet and information technology had important influence on way of control change. By decreasing management range or deep hierarchy, by introducing knowledge as the most valuable resource, by applying softer styles, by using Internet classical control lost its importance. Connected to this Collins Porras rightfully said: „More than any time in the past companies will not be able to survive by using traditional methods of control as hierarchy, systems, budgets and similar. Connection between companies in the future will more and more become ideological“. Nordstorm booklet for employees says: „Use your good judgement in all the situations. There will be no additional rules“[10]

Internet and information technologies will not abolish control. Control has always existed and will continue to exist in the future because when managers once do plans and strategies they must make instruments by which they will control whether the plans are performed and to what extent. Management must make conditions where people will behave and do what is necessary and not what individuals think they should. That is why control is primary function of management. By enabling creativity, improving quality, decreasing expense – managers must find ways to control what happens in their organization.

In this way each doubt about necessity of control in informatics era is removed. So, necessity for control will exist in the future only the ways and mechanisms will be changed. Bureaucratic control based on mechanisms will disappear, and control in function of management and achieving higher effects will appear, and also satisfaction of all the participants and managers in the business. It shows that there is no efficient control without regard for people. Bureaucratic control is based on procedures and rules by which bureaucratic strictness is trained but it is not in the function of success increase and as such it is eliminated in modern organizations of corporative type.

Change of concept control will especially happen in service sector. All the attempts to copy and transfer rules of control from production to service organizations will be made. It shows that services are problematic with procedures, tangibility of service product, with normative, results, etc. This implies additional need to redefine control in this segment so that it can serve to increase business efficacy. [11]

Electronics enabled companies to control employees more, which was not practice in the past. According to the recent investigation of American Management Association (AMA), 82% of large American companies look through employee communication, for example e-mails, phone conversations or records employees by camera. „Privacy at work today is more illusion than reality“, says Ellen Bayer, who is a member of this association. [12] Apart from this it shows that laziness at work makes from 30 to 40% of lost productivity. Around 25% of the employees say that they use Internet for private purposes during working hours. Around 13% of the employees say that they spend more than two hours a day surfing the Internet. „The secret is in the fact that electronic exchange is done from nine to five“, says Andrew Meyer, vice-president of Web sense company which makes softwares for employee control. As a matter of fact every other company out of three punished their employees for Internet abuse, and one out of three fired an employee. Xerox, New York Times, Edward Jones, and First Union Bank are among them.[13] So, Internet rationalized administrative and other jobs but its illegal usage decreases productivity, which enforces the need to control the usage of Internet by controlling incoming and outgoing mail, or e-mail.

A large number of companies in the USA use a drug test as an instrument of control while hiring people. What once was controversial practice today became a generally accepted thing. In 1996. Drug testing of the employees reached its high. Even 81% of the large companies said that they do the procedure but the percentage started to decrease as fewer and fewer workers are drug positive. In 1998. 13.6 % tests were positive and today the percentage is only 5%. [14]

Stated above shows that has changed philosophy and process of control in corporate organizations. Internet succeeded through control mechanisms to rationalize control itself but brought certain problems, especially when using Internet during working hours is in question. In these facts above stated we search for ways to make control on this plan, for which we need legal, organizational and ethical regulation change.

## **6. INTERNET INFLUENCE ON COMMUNICATION**

Communication between management and workers is an important element in every manager's work. Management communicates to market, stock holders, social and political communities, suppliers, syndicate, etc. According to the analyses, management spends over 50% of its time in communications. Through communication process management but also other subjects enable certain information for decision making and quality performance of business and working assignments. Corporate organization success or corporate management success depends on communication quality.

Nevertheless, in modern conditions communication gets more and more complicated. By introducing electronic communication people communicate directly less and less. By this contacts among people get rarer which enforces the need to enable higher level of quality is such decreased verbal communication, before all in removing misunderstandings appearing in communication process.

In management of developed countries electronic communication dominates, based on Internet. This is by now certainly the most efficient communication means man has ever made. People fastened and rationalized communication process with a tendency of further improvement of it. Take the following three examples. Japanese workers and managers, teenagers and housewives use wireless web telephones to send e-mails, web surf, photograph exchange and playing computer games. In Pos net, Swedish Internet provider, employees work at tables with electrical cables and cables for their laptop computer connections. Over 75% out of 316 thousands IBM employees regularly uses instant messages for communication and mutual cooperation at workplace. The situation is similar for other developed countries. [15]

Internet has radically changed ways of communication of organization members. For example, it improved manager possibility to control individuals and team activities. It enables employees to have complete knowledge to be able to make decisions faster and gives employees more possibilities to cooperate and share information. Informational technologies enabled people in organizations to be available at any time no matter where they are. Employees do not have to be at their tables, with their computers on to be able to communicate among each other. The two parts of information technology seem to have the most memorable impact upon instant corporate communication and thus: [16] connected computer systems and wireless possibilities.

In connected computer systems the organization connects its computers by certain tools and programmes thus making organization network. This network is mostly based on organizational or formal corporate base. Organization members can communicate and gather information regardless the fact where they are, in the hall, the other part of the city or the world.

Exciting real potentials are yet to come. Wireless communication leans upon signals sent through the atmosphere or space, without physical connection using things as microwave signals, satellites, radio waves, radio antennas or infrared light beams. Wireless smart phones, laptop computers and other small communication gadget developed a completely new ways for managers and other business people. In Japan and Europe over 9 million of users own wireless technology which enables them to send and receive information wherever they are. Employees do not have to be at their desks, with their computers on and connected to be able to communicate inside their organization. As technology continues to develop in this area we will soon be able to see more and more organizations to use wireless communication to cooperate and share information among each other.

## **7. CONCLUSION**

From the text above it is obvious that introducing information technology in corporate organizations has radically changed their design. This is natural, as it was shown that introducing informational technology is a strategic change which must be followed by reengineering of both, organization and management process. The most important quality which is received by introducing information technology in corporations is creating conditions for decentralization and dispersion. Nevertheless, we must bear in mind that informational technology enabled reintegration of decentralized parts, to be able to create synergetic effects. So, information technology brought to new corporate philosophy upon which modern business is based, and that is a phenomenon of integrated decentralization, by which a significant competitive advantage can be achieved.

Informational technology has radically redesigned management process. This applies to all its elements from planning, designing, managing, coordinating and corporate control. So, by introducing information technologies into the company nothing can be as it used to be. Transition management practice shows that this

fact is often disregarded and that management often includes informational technology but does not do organizational changes coordinated with new technological solutions, because of which adequate success doesn't happen,. By introducing wireless information technology corporative management and business will change even more. In stated circumstances a need appears to create new concept in corporative management, and that is Internet management.

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## **PORTFOLIO STRUCTURE OF INSURANCE COMPANIES IN THE REPUBLIC OF SERBIA**

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The subject of this work are insurance companies, as the important institutional investor, with a special retrospective view of their place and a role at the financial market in Serbia. A successful development of insurance companies depends on the degree of development of the financial market, as well as on the ability to make a decision regarding the structure of its investment portfolio, in the best way. Besides the usual risk of property and personal insurance, the insurance companies in Serbia faced also the risk of investing free pecuniary funds, in the previous period. A new Law on Insurance has introduced new rules for the functioning of insurance companies in Serbia, but also confused instructions, which are bad for investment decisions of insurance companies, as well as for the development of the financial market in Serbia.

**Key words:** financial market, insurance, bonds, indicators of monitoring, total premium, gross domestic product

### **1. INTRODUCTION**

From the macroeconomic point of view, a degree of insurance development is defined as the degree of participation of insurance premium in the gross domestic product. It represents one of the most important indicators for monitoring the achieved level of insurance development. That indicator is exactly proportional to the achieved levels of economic development. We shall demonstrate by comparable data, that the insurance sector in Serbia is undeveloped, and that regarding a degree of development, it is considerably below the average of the countries-members of the European Union. The indicators of insurance market development speak in support of that, i.e. the ratio between total premium and gross domestic product, as well as the total premium per capita.

### **2. PARTICIPATION OF INSURANCE COMPANIES AT THE FINANCIAL MARKET IN THE REPUBLIC OF SERBIA**

The portfolio structure of insurance companies in Serbia was not adequate in the previous period, taking into consideration that only 3% of the total insurance premium pertained to life insurance, and 97% to other insurances. When the Law on Insurance was passed in 2004 year, it had a considerable effect on the change of the portfolio of insurance companies, and the following data demonstrate that.

According to the data of the Insurance Companies Association in Serbia for 2006, the insurance companies realized total insurance premium in the amount of 38,3 billion dinars (485 million euros, more exactly 639 million dollars), that represent 10,5% of increase in relation to the previous year, when it amounted to 34,7 billion dinars (406 million euros, more exactly 480 million dollars). The participation of non-life insurance amounted to 89,4% in the premium structure, in 2006, while the participation of life insurance increased from 7,4% in 2004 year to 10,6% in 2006 year, owing to the realized high increase of the life insurance premium of almost 23% in relation to the previous year, with the increase of non-life insurance premium of 9,2%. The reasons for such structure lie in passing the Law on Insurance, which succeeded to «regulate» the insurance market, to improve life standard, and to arrange the financial market.

In the structure of the total portfolio of non-life insurance, over 80% was realized in only five types of insurance and they are: accident insurance, motor vehicle insurance, insurance of property from fire and other dangers, other property insurances, as well as the liability insurance for using motor vehicles. The property insurances, which had the greatest share previously, due to the fall of 1% in 2006 year, in comparison to the previous year, reduced their share to 29,5% and gave up the leading share to the motor third party liability insurance, which made 32,3%. After the property insurances, there followed, motor vehicle insurances – Casco of 12,8%, which together with the increase of a share in the premium, recorded the increase of the premium itself of 14%, in relation to 2005 year.

Although it is little represented, there is a considerable annual increase of the premium in the group of non-life insurances in 2006, of the voluntary health insurance (55%), where one can identify the increase of share from 2,3% in 2005 year to 3,3% in 2006 year. Bearing in mind, that in the economically developed countries, there is marked tendency of transferring the gravity of health insurance to the insurance companies, and the fact that the existing system of mandatory health insurance is characterized by substantial weaknesses, it is realistic to expect a faster development of that type of insurance at our market. The premium of voluntary pension insurance marked reduced participation in 2006, due to the withdrawal of the premium into the sector of voluntary pension funds.

According to the data of the Insurance Companies Association in Serbia, the scope of insurance business operations, measured by the balance sum of the insurance companies, that performed insurance and reinsurance business, increased by 21%, more exactly from 46,4 billion dinars to 56,1 billion dinars, in 2006, in comparison to 2005 year.

Insurance companies represent one of the biggest institutional investors at the financial markets, which substantially determine and provide current liquidity and diversification of the financial risks at the market. The indicators of the insurance market development speak in support of that, i.e. the ration between total premium and the gross domestic product, as well as the total premium per capita.

The insurance companies in the USA are significant actors at the financial market, and it is the same case in the countries of the European Union. Since the bankassurance is developed at the enviable level, the banks and insurance companies establish consortiums and take over the mentioned loans together. The long-term securities dominate in the structure of the portfolio of insurance companies in the USA and the EU.

**Table 1:** Investment structure of insurance company in development country

Investment structure of insurance companies in developed countries				
	SAD	United Kingdom	Germany	France
Real Estate	10%	8%	7%	7%
Equity Stocks	5%	38%	32%	27%
Bonds	75%	42%	58%	53%
Other Investments	10%	12%	3%	3%

Source: [www.financialservicesfacts.org](http://www.financialservicesfacts.org)

The insurance companies in the USA invest most often in the municipal and state bonds, while the situation in the EU countries, where the long-term securities also dominate, is somewhat different. In the EU countries, there are mostly investments in the shares i.e. mostly in the portfolio shares of the big corporations. One of the important types of investments is the security of transnational's companies. The leasing operations of the insurers are also widespread, whereby they successfully compete with the specialized companies. One of the prerequisites for the approval of mortgage credits is the conclusion of the insurance contract. However, the fall of profitability from such operations, the increase of risk of mortgage credits, the low liquidity, and the long-term character of those assets, have reduced their share in the investment structure. Based on that comparative analysis, the first hypothesis has been confirmed. The countries, where there is a high degree of development of the financial market and the insurance market, have a diversified investment portfolio which brings revenues, but also the assets necessary to cover the losses in insurance business, and as such they have a considerable influence by creating their portfolio.

The insurance sector in Serbia is undeveloped, and regarding a degree of development, it is considerably below the average of the countries-members of the European Union and the USA. The insurance companies are not a significant participant at the financial market with their share of 1,2% in 2006 year, while the banks dominate with 94%. Totally observed, for all insurance companies in Serbia, the technical reserves of non-life insurances in 2006 year, were mostly covered by depositing with the banks – 28%, by the job shares –17% and by the state



securities – 14%. In the covering structure of technical reserves for life insurances, there are mostly investments in the securities - 57%, and then follows depositing with the banks - 16%. The presence of the insurance companies at the financial market, in Serbia is not sufficiently significant.

**Table 2:** Development of Serbian insurance company in financial market

Investment structure of Serbian insurance companies for years 2005 and 2006										
	Dunav		DDOR Novi Sad		Delta Generali		Wiener Stadische		Insurance industry average	
Type of Investment	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Real Estate	72%	15%	7%	9%	0%	0%	0%	0%	32%	10%
Equity Stocks	7%	30%	38%	53%	0%	10%	0%	0%	12%	25%
Bonds (long term)	1%	1%	9%	1%	0%	0%	61%	56%	14%	12%
Notes (short term)	20%	55%	46%	37%	100%	90%	39%	44%	42%	54%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: [www.belex.co.yu](http://www.belex.co.yu)

The biggest part of the insurance companies investments in Serbia, was directed at the short-term securities - 42% in 2004 year, and in 2005 year - 54%. One of the worse investment structures was the investment structure of the insurance company “Dunav”, because 72% of investments referred to real estates, and only 1% was invested in the long-term securities. The reason for such investment was that the insurance co. “Dunav” had mostly the premiums for motor vehicles in its premium structure. In contrast to “Dunav” insurance company, Wiener Stadtische had the best investment structure, because life insurance was the most represented in the insurance structure, and therefore the investments at the financial market were directed at the long-term securities - 61% in 2004 year, i.e. 56% in 2005 year. The situation is somewhat better in the investment structure of DDOR Novi Sad, which improved its investment structure by 38% in 2005, investment in shares by 53% in 2006 year. Observing portfolios of the biggest insurance companies in Serbia, one can conclude that such investment structure is not adequate, since by keeping free funds in bank deposits, smaller revenue is achieved than it would have been realized if it had been invested at the financial market, especially in the long-term securities. Investment decisions of managers in the insurance companies were based on hedging, and one part of investment was directed at the financial market, but only in order to maintain liquidity, while the second part of investments referred to real estates and keeping of deposits with the banks. Investment in real estates in the previous period, were only a burden with regard to the maintenance costs and none revenue for the insurance companies.

It can be concluded that the national insurance companies invest at the money market, in the most expensive and the least transparent segment. The reason for that is that the capacities of the insurance companies are still at the low level in relation to the highly developed countries. The life insurance makes only 5% of the total insurance portfolio, and that is one of the reasons why the participation of the insurance companies at the financial market is modest. In comparison to the insurance companies at the highly developed markets, which realize their profit by investing at the capital market, the insurance companies in Serbia realize their profit exclusively from business operations. Undevelopment and instability of the financial market cause that a share of insurance sector in the general scope of investment in the country is insignificant.

The adoption of the Law on insurance in 2004, according to which the supervision over insurance was entrusted to the National Bank of Serbia, was the basis to initiate big changes at the Serbian insurance market. Defining the criteria for the investment of insurance funds, first of all the technical reserves, and the criteria for the evaluation of balance sheet items, as well as the permanent control of business operations of the companies, has caused important changes in relation to the previous condition. Measured by the participation of types of assets, which may be characterized by complicated chargeability and overrated presentation in the financial reports, it can be concluded that the quality of assets of the companies in 2005 year and especially in 2006 was improved. Namely, the values of those indicators in 2005 and 2006 years at the level of all companies which dealt predominantly with non-life insurances, amounted to 61,53% and 42,96%, respectively. Increase of total assets of the companies and reduction of value of a part of assets that may be characterized by complicated chargeability, influenced the change of values of those indicators.

The first controls carried out by the National Bank of Serbia, when the supervision over the companies was undertaken in 2004, demonstrated that the previous situation was characterized by the absence of the security of investments incomplete business books, as well as, unsettled obligations towards policyholders by some



companies. A share of non-material investments, real estates, investments in securities which are not for market trading and claims (as a form of assets that may be characterized by complicated chargeability, as well as overrated presentation in financial reports) in total assets of the companies which dealt predominantly with non-life insurances, amounted to even 75,68% in 2004 year. Relatively high participation of those types of assets in the total assets of the companies, indicated problems in clearing up obligations of those companies.

The growth of living standard and the growth of the GDP are certainly a good sign that the insurance sector will start to develop in the forthcoming period, at a faster rate. In addition, the current participation of the insurance premium in GDP in Serbia, which is estimated at less than 2%, is the indicator of the potential of this market in its intention to nearly achieve the level of the European Union countries.

In the forthcoming period, we expect the entrance of the world leaders to the insurance market in Serbia. Assicurazioni Generali, Uniq, Wiener Städtische or Grawe have already appeared at our market, whether by taking over the Serbian companies, as it has been the case with Generali, which has taken over Delta or Uniq, which has taken over Zepter, or by opening their own affiliates, as it has been done by Wiener and Grawe. Besides them, big insurance companies, which used to have a prominent role at the market in Serbia at the time of former Yugoslavia, like Zavarovalnica Triglav and Croatia insurance, have returned to our market by taking over the companies Kopaonik and Millennium insurance. Besides the insurance company Allianz, other companies like VHV Group, Eureko, KBC, AXA, have shown great interest to start business activities in Serbia. In future, we can expect that the insurance premium structure will get better in favor of the life insurance and that the arrival of those insurance companies will improve the quality of services and competitiveness at the insurance market in Serbia.

After the arrival of foreign insurance companies and docapitalization carried out according to the legal regulations, the value of capital has increased by 5%. That should have positive influence on the financial market in terms of investment in the long-term securities i.e. shares. The portfolio of Wiener Stadische that consists of 56% of long-term securities (tables T26 page 177) demonstrates that. After the arrival of new foreign insurance companies, the increase of the total insurance premium by 25% is expected, that would raise the financial assets by 10%, and thereby improve the investment portfolio of the insurance companies at the financial market in Serbia. We believe that the process of internalization of the insurance market in Serbia, will lead to a greater involvement of the insurance companies in diversification of risks at the financial market.

Based on that, we expect rapid development of that sector from 2008 year, and bearing in mind what effects the insurance development carries with itself, the economic development of Serbia is before us.

### 3. INSURANCE COMPANY IN DEVELOPMENT COUNTRY

Serbia was ranked at 63<sup>rd</sup> place in the world, regarding the premium per capita in 2005 year, of 65 dollars or 55 euros (in 2004, 52 dollars, more exactly 38 euros). Switzerland with 5.558 dollars per capita, was ranked at the 1<sup>st</sup> place. According to the total premium of 480 millions of dollars, realized in insurance, Serbia was ranked at the 67<sup>th</sup> place in the world, in 2005.

The following data which show that participation of Slovenia in the total portfolio of the regional insurance market amounts to 49,44%, of Croatia 30,70%, B&H 5,12%, Macedonia 2,46%, and Serbia 12,28%, demonstrate the degree of insurance market development in Serbia.

The insurance market development, measured by the insurance premium growth, indicates the ascending tendency. Based on the data from the Federal Bureau of Statistics, the total insurance premium, (although a part of the premium for the pension insurance was transferred into pension funds) in 2006 year, in relation to the premium in 2005 year, increased by 10,5%, and that with the rise of retail prices of 6,6%, denotes a real growth of the total insurance premium.

**Table 3:** Financial institutions in Serbian financial market

Percent share of different financial institutions in Serbian financial market <sup>1)</sup>									
	Banks			Leasing companies			Insurance companies		
	2004	2005	2006	2004	2005	2006	2004 <sup>2)</sup>	2005	2006
Total Assets	90.5%	88.8%	90.4%	4.1%	5.9%	5.3%	5.5%	5.3%	4.3%
Equity	85.8%	85.8%	89.8%	0.7%	1.5%	1.6%	13.5%	12.7%	8.6%
Number of employees	80.9%	77.1%	77.3%	0.5%	1.0%	1.1%	18.6%	21.9%	21.7%
1) 1 voluntary pension fund included									
2) Without insurance companies which licences were taken at the end of 2004 and beginning of 2005									

Source: www.nbs.yu/Department for Insurance Company/ Department for Bank/  
Financial reports for 2004, 2005,2006

In the total financial sector, according to the size of the balance sum, the insurance companies participated with only 5,5%, in 2004 year, i.e. with 4.3% in 2006 year, while the participation of the banks was dominant with 90,5%, in 2004 year, i.e. 90,4%, in 2006 year.

According to the amount of invested capital, the banks also dominated with 85% in 2004, i.e. with 89.8% in 2006, while the insurance sector participated with only 13,5% in 2004 year i.e. 8.6% in 2006 year. It can be observed that the banks dominate at our financial market, while the insurance companies, as financial institutions, occupy a very small part of the market.

One of the most important indicators of a degree of insurance development in the regional countries, is the insurance structure, i.e. the participation of life and non-life insurance in the total insurance portfolio. If, based on those indicators, we compare Serbia and EU, we can see where is the place of Serbia. The participation of the premium in the gross domestic product in Serbia, in 2005 was 2,0% (1,6% in 2004 year), and therefore Serbia was at the 58<sup>th</sup> place in the world (according to the Swiss Re data). In Slovenia, in the same year, that indicator was 5,7%, in Croatia 3,2%, and in 25 countries-members of the EU it was even 8,4%. The greatest percentage of the premium participation in the gross domestic product, in the year 2005, had Taiwan, and there follow the South African Republic and the Great Britain.

#### 4. CONCLUSION

That what has been positive in the insurance sector in the last year, is as follows: the increase of the total insurance premium, the increase of the number of employed in insurance business; the improvement of the premium structure in favor of life insurance; increase of technical reserves; sale network quality improvement.

In order to provide normal investment environment, consolidation of the capital market is necessary, since otherwise every investment in that type of securities, exposes investor to a risk. The functions of an institutional investor, and thereby of insurance companies, at the securities market are directed towards the resolution of the problem of budget deficit, which is negative. The insurance companies, through the development of life insurances, should mobilize available savings and direct it in productive investments, that will increase the level of economic activity, i.e. in shares and bonds of companies. Investments in state bonds are useful, but they should not be the only investment of the insurance companies. The insurance companies should invest assets in real estates also, because there is a noticeable price rise of real estates nowadays. Besides that, it is necessary to provide an adequate flow and validity of information from the financial market in order to make proper decisions. The status of an institutional investor requires not only qualified personnel, but also operative procedures for making decisions about investment, the ability to make reports about its business, as well as the efficient internal supervision.

We believe that the insurance market in Serbia is developing and that it has enormous potential, first of all for the life insurance development. Further reforms of the insurance sector in Serbia, should facilitate the financially reliable and stable insurance market, where the interests of the insured and insurance beneficiaries would be protected, and the quality of insurance business activity would be raised at a higher level and adjusted to the European Union standards. Attention should be paid especially to certain parts of the Law on Insurance, which restrict investment activity of the insurance companies. It is necessary to correct the existing Law on Insurance, as soon as possible, and to stimulate the development of insurance, in order to enable the development and the growth of the insurance market. The authors ends this paper by pointing out that the participation of the insurance companies at the financial market in Serbia is not sufficiently significant, but also raises a new question about the influence, of the process of globalization of the insurance market, at the increased presence of foreign insurance companies at the market of the Republic of Serbia.

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## **INFORMATION AND COMMUNICATION TECHNOLOGIES IN FOREIGN LANGUAGE TEACHING MANAGEMENT**

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***Summary:** Teachers are looking all the time for different ways of increasing the quality of their teaching. The use of computers and new technologies has become an important aspect of foreign language learning. They have enabled the language teaching community to redefine some of the strategies and concepts of teaching and learning. This contribution deals with the new information and communication technologies (ICT), and distance learning as a new challenge for educational institutions. It will concern the integration of computer technologies into the teaching of foreign languages for distant students. That will make it more effective, individualized and accessible for them, on the web sites of their universities. It demonstrates how e-learning is being used in foreign language teaching, both at the faculty and outside the institution; it describes models of on-line foreign language courses and emphasizes pros and cons of e-learning in teaching foreign languages [17].*

***Keywords:** language, technology, e-learning*

### **1. INTRODUCTION**

The teaching of foreign language must follow the changes in society. The development of technology influenced big changes in the world, in corporations. Therefore, it influences educational system too. A student, who finishes faculty by the old curriculum, will have serious problems to get accustomed to his new job. Application of computer programs and orientation on the Internet has become precondition of good business. Therefore, we must induct bigger application of computers and the Internet in educational programs.

When it comes to foreign language, it is necessary that professors use new information and communication technologies, so they could involve students in realistic environment that is waiting for them later. Thereafter, language passes through big changes and, if student uses these technologies, he could easily stay in touch with the changes in language. In this way, assimilation of appropriate words could be also easily effected. The use of these technologies in foreign language learning is necessary, just like in the case of manager, for instance.

The importance of using new information and communication technologies can be seen on its big use on universities around the world. In our study, we have mentioned the ways of using information and communication technologies on the Department of Applied Linguistics of the University of Hradec Králové, Czech and in Faculty of Information Technologies (FIT) in Belgrade.

The importance of using new information and communication technologies can be seen also on the example of private universities in Serbia who have, for instance, distance learning method. "Singidunum" University in Belgrade started to use this program in 2006 and University of "Braća Karić" a little bit later. This way of studying is very good for students who do not live in Belgrade and, also, for those who are employed or for any other reason cannot attend the lectures. The importance of using this kind of teaching method is the same in foreign language too.

The intention of this study is to show what possibilities are in applying information and communication technologies in foreign language teaching, with closer retrospection on the application of distance learning. Speaking of teaching, Faculty for Education of the Executives is trying to go in step with modern tendencies. Therefore, it is necessary to explore the possibilities of new aspects in foreign language learning and opt for the best solutions.

The topic of this study are the possibilities of applying information and communication technologies, whereby, in the study is enumerated that it is about distance, e-learning and multimedia (as a complex of facilities such as audio, video, 2D & 3D animations, DVD etc.). Considering the fact that the maximum expansion of this work is small, many of the domains are only counted, but not elaborated, so we could have better picture in general.

Firstly, in introduction, it is necessary to give precise method of studying, specifying which sequence would the topics process. At first, new concepts of teaching and learning foreign language – e-learning and distance education are formulated, thereafter various possibilities of applying information and communication technologies in language learning are observed where it refers to the video, HDTV, 2D & 3D animations, MP3 players and DVD.

After variety of possibilities in applying information and communication technologies here, and all around the world, it is closed what possibilities of applying are in Serbia.

## **2. NEW CONCEPTS OF TEACHING AND LEARNING FOREIGN LANGUAGE – E-LEARNING AND DISTANCE EDUCATION**

Over the past decade the use of computers and new technologies has become an important aspect of foreign language learning. They have enabled the language teaching community to redefine some of the strategies and concepts of teaching and learning. This has been done in terms of enriching classroom activities, reorganizing course structures, and providing learners with more autonomous as well as more learner-center opportunities for learning. Furthermore, teachers have been also looking for increasing the quality of their teaching with help of new and modern information technologies [22].

Foreign language teaching can be characterized as „managing foreign language learning and influencing complicated dynamic systems with the aim to ensure their optimum functioning and development [10]. The subject of managing is the teacher, object is represented by students and the methods of teaching are the means of managing.

For the past two years the Faculty of Information Technologies (FIT) in Belgrade has been organizing, along with the traditional academic program, the distance learning program for its students from Serbia and other European countries as well. The technological platform for the distance learning system is the Oracle iLearning system. The system has proved itself in practice as robust and very suitable for most of the academic courses. However, the common practice of foreign language teaching and learning poses a series of specific requirements for the distance learning system which are difficult or almost impossible to implement [1].

The process of foreign language management is the unity of decision-making, influencing and controlling. The teacher who manages the foreign language teaching process makes decision for a particular method of teaching. One of the methods is e-learning that represents the whole category of teaching and learning by means of modern information technologies, including the Internet, intranet, satellite broadcasting, CD-ROM etc.

This method enables students to adjust learning to their individual needs and time possibilities. E-learning seems to be a proper method for distance studies because students are aware of their own goals, are more independent, have the chance to work at their own pace and become autonomous learners.

E-learning is fast becoming the standard rather than the exception among language learning materials. To avoid lagging behind the times the work with computers is a must nowadays. The interactive form that gives the students chance to be actively included into the self-learning process is very interesting and stimulating for them. The role of the teacher is different from that of a simple provider of knowledge. Teachers are becoming the students' guides and if they become computer literate, they will become more efficient and productive.

Teaching material for distance studies was evaluated with foreign colleagues from partner universities and then it was placed on the web-pages. At present, in many countries there is a blended module for distance students combining aspects of presence learning and distance learning. It means that students learn individually, and twice in an academic year they have so called block exercises at the university with their teachers where they revise study material and ask questions if they did not understand it.

At present the lessons of distance studies and also of long-life education are run at the several centers of distance studies in every European extensive countries. In these centers there are bachelor studies, and foreign language teaching is compulsory for all the students.

In other centers of distance studies there are follow-up studies into which the foreign language lessons are not included. In these centers the lessons are run on Saturdays and Sundays twice in a term together with credit tests and examinations. It is demanding, costly and inconvenient to get an instructor and students to the same place at the same time. On the contrary e-learning enables the students to adjust learning to their individual needs and time requirements. At the same time it could be used for other specialists at the University for improving communication with foreign partners, thus widening specialist terminology and specialist literature studies.

### 3. VARIOUS POSSIBILITIES OF APPLYING ICT IN LANGUAGE LEARNING

Mastery of a foreign language represents a complex of receptive (reading, listening) and productive skills (writing, speaking) and in dependence on skills level its utilization can be active or passive. To acquire and improve individual language skills ICT can be applied in a large extent not only in the educational process at school but also in the autonomous language study at home.

Accessible technologies and multimedia enable to present verbal and nonverbal materials, they help to clarify the meaning and vitalize the education. They support the educational processes not only by their intensification but also by visualization, concretization and repetition and create the simulated foreign-language situations as educational situations. Multimedia as a complex of facilities, enable to acquire information in audiovisual form including a possibility of interaction and are a prerequisite for effective learning of foreign languages with the help of computer.

The PC network Internet opens the access to information. We definitely appreciate dictionaries and encyclopedias contained on Internet thanks to which our foreign-language vocabulary can be enriched. The advantage of Internet in compare with classical language dictionaries or encyclopedias consists in access to huge amounts of sources and high search speed of information. By explanations and procurement of relevant information on the text background it helps to decode the unknown text.

In the language education there can be used a broad range of educational programs for fixation and testing of various grammatical features. Implementation of program systems serving for computer assisted language learning can be realized as an intelligent database system. Advantages of testing program systems imply immediate feedback, variable tasks, unloading of teachers from task corrections, and evaluation objectivity; in case of educational programs – individualization of the contents or tempo eventually reduction of negative influence of the surroundings can be considered as advantages.

Computer as a digital recorder faithfully records and reproduces audio signals what enables in the acoustic spectrum to get all necessary parameters for their next analysis, identification and comparison. This enables to study not only the so called „transonic“ features but also listen to own pronunciation and to correct it immediately. The method applying the digital recorder enables acoustic synthesis of human speech. This is the principle of programs that allow an echo checking of correct pronunciation by listening. These are the so called “Dictionary manager” files that work in the range of classical user interface (Windows User’s reference Manual 1998), enabling to write down a foreign word and to reproduce its pronunciation in the given language.

Along with additional attachments Internet offers a lot of opportunities for development of speaking skills. The user can develop the reading skills -especially the fast reading technique, scanning of authentic actual documents-as well as listening and understanding.

The so called chats (correspondence written in real time), mails (electronic correspondence) or summarization of texts contribute for writing development [21].

Via information technologies a teacher can prepare study materials, tests, presentations and hypertext documents published on web server. Effective teaching aids can also be created by teachers themselves. The presentation software packet MS PowerPoint which is a part of MS Office, doesn’t require professional knowledge or skills of computer art. MS PowerPoint serves recently mainly for preparation of informational materials and their presentation via a data projector, e.g. during lectures or presentations of discussion papers at conferences and various professional events. Such presentations have a high information and presentation value and reflect the present trends of information technologies. In foreign language teaching, multimedia has always played a very important role as they provide a very rich learning environment, where communication occurs spontaneously and language can be used in a large variety of domains, for different purposes and levels of language competence. Information Technology, with dedicated software and CD-ROMs, expanded and magnified the potential of multimedia, giving birth to FLT branches such as Computer Assisted Language Learning (CALL) and Technology Enhanced Language Learning (TELL), which implies a significant evolution, and sometimes revolution, in classroom management (teacher's role, students' role, time, space), in cognitive perspectives (learning styles, learning strategies, autonomous learning, co-operative learning), in pedagogical choices and methodological approaches (lesson planning, tasks, activities, monitoring, assessment, evaluation).

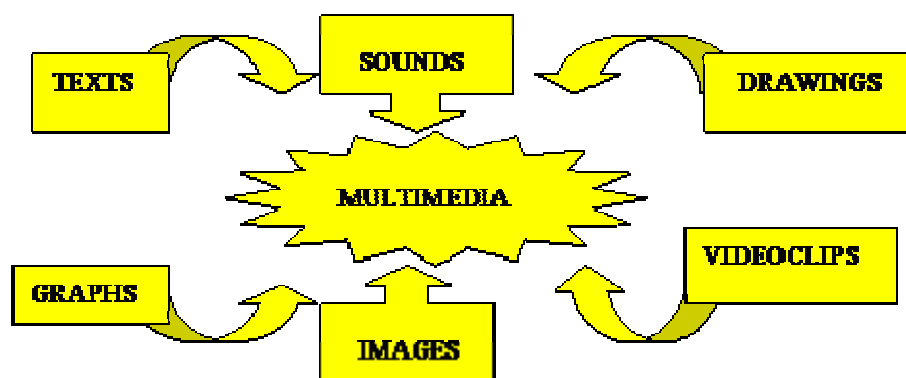
Multimedia programs are often a result of cooperation between educationists and IT people that means a team work enriched by a bright spectrum of views of the issues being solved. A multimedia classroom (one computer with a video-data projector or LCD panel) enables to the teacher to manage easier the class or a group of students.

A big quality difference for a present school is represented by introduction of interactive boards and textbooks the so called i-textbooks into the educational process. These textbooks in regard to their content, visualization and navigation system set up a brand new quality in the textbook market. They contain a rich video and sound material, video-sequences, 2D & 3D animations but also the whole scale of interactive exercises. Interactive

boards and textbooks signalize a substantial turning point in the education system that enables to multimedia to enter the everyday teaching. In the autonomous study of a foreign language it is possible to use MP3 players with sound records, to watch DVD movies in original version, to chat and surf on foreign-language websites or to make use of on-line language training and testing. Electronic media represent a „boom“ in the foreign-language education and as such attract attention.

Their advantages consist in space minimalization (possibility of learning at home, or anywhere), time selection (any day, at any time, optionally long and with an optional frequency and tempo of learning), increase of personal comfort (outside or inside, sitting in the chair or at the table, etc.), in their easy availability and simple manipulation. Written language stems from the translation of ideas and images into "signs" which trigger in the mind of the receivers other images ideas and sounds. The same sentence, therefore the same structure and the same words, may carry a great numbers of meanings depending on many associated co-textual elements such as intonation, color images and sounds. Words potentialities are magnified, their denotative and connotative powers are exploded and their communicative functions are empowered when linked to other non-verbal elements. Language teachers are conscious of the complexity implied in the use of language as a means of communication that is why they have always used audio and video supports.

Multimedia assembles in one technical support different media such as videos, graphs, sounds, texts. Here is one graphic example [13]:



**Figure 1:** Multimedia in foreign language learning

However apart from strong points of electronic media there are also certain weak spots.

Children are not gaining access or developing skills in the use of ICT for authentic learning tasks but instead are mainly using computers for 'fun', often in out-of-school contexts [9]. They emphasize especially the visual and phonetic form of the language supporting thus mainly receptive skills of understanding of the read and heard text. Training of dialogical skills is limited. Last but not least in the autonomous study a certain obstacle can be in higher demand for the student exacting full self-activity and responsibility and of course at least basic computer literacy from him. But overall the mentioned strong points of electronic media are head and shoulders the mentioned weak spots.

As it follows from the above mentioned review utilization of ICT in the assisted foreign- language teaching is very varied. ICT application in the educational process depends on knowledge, abilities and skills of teachers. That's why it is so necessary for them to keep on learning to be able to implement new information in teaching, to make use of hardware available and to choose suitable software applications for their subject considering at the same time the potential of students.

#### **4. EXAMPLES OF E-LEARNING LANGUAGE COURSES AT UNIVERSITIES IN VARIOUS COUNTRIES**

E-learning, which refers to using multimedia technology to improve the quality of learning, contributes enormously towards increasing effectiveness and efficiency of the educational process. E-learning also enhances learner autonomy. Most European Universities have the model in which each part of the online course starts with self-study information input and concludes with tasks, quizzes, or assignments. Self-study is one of the most important learning methods. As Badger said "time available for learners to spend on improving language skills will always be limited [11]. For many learners, there will never be enough time or money available to attend regular language classes, but all learners can find the time and money for self-study. Moreover, there are several key factors which influence successful self-study:

- learner motivation: job satisfaction, enhanced job performance, financial rewards, possible promotion, tests and examinations



- time: it is necessary to create a level of interest in self-study that can compete with other necessary activities in learners' lives
- learner support—close link between self-study and classroom based tasks, regular contact with a tutor, contact with fellow students, access to a language support website
- affordability: comparatively low cost of self-study for companies
- study materials: materials must be highly accessible and easy to study

Here is one model of e-learning language course applying in the Department of Applied Linguistics of the University of Hradec Králové, Czech. E-learning started to be widely used at the faculty in 2001 when a few selected courses created in virtual learning environment WebCT (web communication tools) were introduced for part-time students. In 2002 these and other on-line courses, often called OLIVA (on-line teaching = On-Line Vyuka), began to be used as a new quality support for full-time students as well. At present more than 150 e-courses are being fully exploited in teaching at the faculty. In English and German teaching more than 45 e-courses are being used. Some of them, such as Teaching Written Business English, can be taught completely on-line.

This is particularly suitable for the university distance students and interuniversity study, the so-called IUS (Interuniversity Study) project. Moreover, sometimes there are regular classes and e-courses are used as reference courses for further self-study or revision of the lecture. This is, for example, true for teaching Culture of Great Britain or History of the USA. Finally, there exist the so-called blended courses. The blended learning is particularly suitable for language learning when conventional face-to-face teaching is sometimes necessary for developing speaking communication skills. Students can do, for example, writing and reading tasks on their own and in class teachers can concentrate more on listening and speaking activities.

One of the representative blended courses at the faculty is, for example, an optional one semester course on Academic Writing. The course exposes students to blended learning. That means they meet a teacher once into two weeks to discuss and clarify the mistakes they made in their assignments (for instance-essays), which together with a deeper self-study of the materials implemented in their on-line e-learning course, they write every second week. The number of students, whose readiness to work in a virtual study environment has been continuously increasing evaluate e-learning courses as good assistants while studying. However, they also express an opinion that more courses of this kind should be available. The fact is that preparation of a course requires specially trained teachers and their attentive and time demanding work. This opinion can become an issue for those who are willing to support their classes with ICT (Information and communication technologies) in this form. On the other hand, it is necessary to realize that academic staff should not miss the chance of using the ICT potential that is available [22].

During the last decade, new efforts have aimed at improving foreign language education technologies in the United States. A recent study concerned with the need to strengthen foreign language skills among U.S. students examined the successes of other countries. Conducted by the Center for Applied Linguistics, the study collected information from 22 educators in 19 countries about foreign language instruction in their elementary and secondary schools. The countries represented in the study are Australia, Austria, Brazil, Canada, Chile, the Czech Republic, Denmark, Finland, Germany, Israel, Italy, Kazakhstan, Luxembourg, Morocco, the Netherlands, New Zealand, Peru, Spain, and Thailand. Information was also gathered on China, England, and Hong Kong from comparative education reports.

Study participants responded to a series of questions about language teaching methodologies, strategies, technologies and policies in their countries that could inform language teaching in the United States. Most respondents, in particular those from Canada, Denmark, and Thailand, highlighted the importance of the Internet and specialized databases for information retrieval. In smaller countries, many television shows are broadcast in a foreign language and subtitled rather than dubbed. In Denmark, where English is omnipresent through the many U.S. and British television programs, films, computer games, and music videos, teachers have developed successful strategies for integrating their students' informal foreign language exposure into classroom teaching. Access to information on the World Wide Web and the use of new information technologies, especially networked computers, has contributed to increased communication among foreign language teachers and students in many countries. Through e-mail, mailing lists, discussion groups, and chat rooms, the Internet has increased access to and communication in the foreign language with both native and nonnative speakers. In Denmark, Germany, the Netherlands, New Zealand, Peru, and Spain, a focus on communicative and intercultural learning has not only stimulated a productive discussion of teaching objectives, methods, and underlying rationales that are now reflected in curricula and textbooks, but has also resulted in increased oral and written proficiency for their students. In China, the Matriculation English Test (MET) assesses not only grammar and lexis but also their use, thus leading to a decrease of rote memorization in English learning practice [15].

## 5. ADVANTAGES OF ICT IN FOREIGN LANGUAGE MANAGEMENT



In a disciplinary sense, distance education has been predominantly correspondence education, and remains a matter of mailing paper in most parts of the world. For illustration we will use the example of Japan, as an advanced country wherein with high speed innovation are fabricating and applying. In Japan where the technology is readily available to change to online education, a business model is needed to get away from selling paper. If consumers are somewhat materialistic and need a sense that they are receiving some goods for their money, then a paradigm shift in their thinking is needed. People increasingly pay for experiences as well as material goods, and learning is of inestimable value.

Online education is therefore not a subset of distance education; it is rather rendering distance irrelevant as people adjust psychologically to remote communication. The adjustment may be more difficult in cultures that emphasize face and f2f rituals in communication. In disciplinary terms again, online education is diverging from distance education as increasingly incomparable. Finally, e-learning, distance education and online education do overlap, but none is a subset of the others. While distance education claims the most participants because of correspondence education, e-learning seems the broadest notion in application, because it encompasses computers and other digital information appliances whether used for learning offline or online. Learning is also broader than education, because most learning is informal, whereas education involves institutional accreditation for certification of learning [14].

As far as the language teaching is concerned, modern information technologies do offer challenging ways of teaching and learning, such as easy access to study materials, individual pace, time and place of studying or almost immediate feedback on writing with e-mail tutorial support. These benefits are, however, a partial solution for learners who need to develop speaking skills. On the other hand, this drawback can be substituted by using telephone and video conferencing. Nevertheless, it is highly likely that an element of conventional face-to-face training will be necessary to provide the practice and feedback on performance that can really help to improve speaking skills.

The above-mentioned models of new information and communication technologies in foreign language teaching management demonstrates both institutional and teachers' effort to improve a sustainable process towards the educational quality of teaching and learning by applying new technologies, such as e-learning, in education.

With so it attempts to emphasize a certain number of advantages, for example, an opportunity for distance learning, which undoubtedly increases the quality of education and goes beyond traditional ways of teaching and learning, and thus extends further possibilities of learning.

## 6. CONCLUSION

The educational institutions have to change educational system and to answer on new demands of modern conditions of educational systems. Nowadays, information and communication technologies surely become more important.

Considering the fact that The Faculty for Education of the Executives educates lawyers, economists and managers, the conclusion is that the use of information and communication technologies in foreign language teaching is more important because the future managers may be prepared for their business future through foreign language learning too. With just one short search on the Internet, student can get big insight in look-out of one great corporation and its presentation, and, in the same time, he will learn automatically appropriate terms and expressions. If he has knowledge about PowerPoint, student will be able to produce personal presentation of his future firm in the foreign language, which becomes today the basis of pursuing. Multimedia also has huge significancy for practice and quicker summary assimilation.

The cooperation between subject teachers and teachers of foreign language is required so that applying of information and communication technologies in foreign language teaching could be completely successful.

They should indicate to key items from their objects to teacher of foreign language, the one that student would surmount in the foreign language too.

As it has been shown in the mentioned examples of the study, the use of information and communication technology in teaching is very important and, because of all mentioned reasons, it would be good to think about starting distance learning on The Faculty for Education of the Executives. This change can be realized progressively and why don't we start with application of ICT in foreign language teaching? So, professors of foreign language should start with designing distance learning courses, as well as introspecting in the use of different possibilities of information and communication technologies (e-learning, multimedia). Using all these possibilities, they can improve and modernize foreign language teaching. In this way, primary intention would be accomplished, and it is to help students to learn as much as they can with less engagement.

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## **STATE AND PROBLEMS WITH THE INTERNET USAGE AT INTERNATIONAL LEVEL**

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***Summary:** the Internet in modern conditions became irreplaceable instrument of communication and corporative business. It belongs to a group of high tech achievements with radical implications to all the fields of life and work. The Internet expanded greatly in highly developed countries, which is quite normal as it was made in these countries as a technology innovation. We could not imagine normal life and business efficacy without the Internet nowadays. It is the result of broadening of human knowledge and acquiring new knowledge and abilities and its usage for practical purposes. Even though the Internet became a significant instrument for gaining competitive advantage it also created certain problems in developed countries. The paper aims at presenting the state and pinpointing the problems of the Internet using at international level with a special attention of highly developed countries*

***Key words:** the Internet, state and problems, developed countries*

### **1. STATE OF THE INTERNET AT GLOBAL LEVEL**

The Internet as a strategic technology presented its radical influence in developed countries of the world. Even though there are difficulties of statistic nature dealing with number of the Internet users and the intensity of its usage, or quality of the Internet usage, it may be stated that the Internet as a technology is not evenly spread and used in some countries at global level. Because of the above stated it is necessary to view the Internet at global level and then at the level of certain developed countries individually.

#### **1.1. The Internet at global level**

The main feature to the new economy of knowledge and services was given by information technologies and the Internet which globalized the world and made it a global village. Nothing is the same as before, and the future will differ from the present we know. Thinking about this it is best to quote the great Mark Twain who said: "I am completely for progress; this is the change I do not like about myself". Globalization is the villain who it is easier to blame for the world's problems, than IT and the Internet, even though it is obvious that these two problems are interactively connected and dependent upon each other. Namely, by decreasing communication cost and mutual information, IT directly influenced fast globalization process, especially when capital market is in question. It excluded national, custom, tax and other barriers and brought territorialisation or localization to question, as a classical factor of corporative success.

On the other side globalization improves IT development through economic gain realized at global level. It is shown that the largest contribution comes from national governments to open their markets before IT does that in spite of their will. Disregarding globalization would have a negative effect on national economies, as those may be successfully developed only by independent goods and capital, people and idea flow. Stated process in any case influences positively affect maximization that comes from IT and the Internet usage.

What is the destiny of globalization and can it be stopped? The question is not senseless if we know that there are strong antiglobal movements in the world which use different arguments to oppose globalization, starting with abolishing national identities, customs, culture to identification with universalism, a project Lenin was for, aiming at centralism and socialism of a state type, as the best socially-political system.

The answer to the previous question is probably negative. We say probably as it deals with assumptions and guesses, what if. In those situations it is hard, with a point of view of science to give precise answers and solutions. But, with great certainty it can be said that national economies today are brought to minimum, especially when integration processes on some continents are considered. Multinational companies often connect national states, but they themselves connect and join trying to use their comparative advantages and unify businesses where they can have maximal effects. It is logical, as for example mobile phone is getting smaller and stronger year after year. It can be designed in Tokyo, and assembled in London, from the parts made in China, Sweden or Singapore, and ordered from a Polish buyer. This process, or multinational connecting, was almost impossible a few decades ago, so all the states aimed at production of each element needed for some product within their own boundaries. Countries deciding upon antiglobal politics, which is not really possible, would produce an economic and thus political disaster, so this kind of decisions is very risky.

IT intensified international trade, especially products and services delivered through the Internet. Even if national governments would be against this kind of work and even if they would try protective politics and measures, electronic trade would be impossible to block. This also applies to information which cannot be closet in a box anymore, so information is becoming more and more global each day. This could not happen a hundred years ago, so some states did not know what was happening in the neighbouring countries. Thanks to IT and the Internet, today you can find out anything about a product or a service that appeared somewhere in the world, get to know its usefulness and at the same time react and order it. Each limitation would be almost impossible and if it would come to that national governments would suffer the pressure of their own people and in the end be forced to liberalize trade.

Thanks to globalization, IT spreads faster; it has a larger level of diffusion in comparison to old revolutionary technologies. For example, a century ago technology innovations needed a decade to go around the world. Today, developing countries have instantaneous approach to new knowledge, techniques and technologies that appear in the world. That influences growth of each part of the world but also global growth grows, which is normal because when you strengthen parts you strengthen the whole. Thanks to synergetic effects, or IT influences on global level it is possible that IT and the Internet overcome effect at national level even when electric energy is in question during the times of protectionism and closed national economies. The Internet as an instrument connects national unities erases national, custom, tax and other traditional boundaries in which the world lived for centuries from tribal to modern state communities. Introducing protectionism would be a measure which would provoke more damage than could ever happen in the past. Thanks to the Internet communication around the world is improved, the world became more homogenous, democratic and successful. In modern conditions the speed of spreading influence is much greater than in the past. So, globalization where IT takes part itself and the Internet are necessity, which shows that national states should adapt to this unstoppable process instead of isolation and protectionism politics introduction.

One should bear in mind limitations and hardships while doing this analyses. Because of dynamic changes in the question as well as integration processes and abolishing national borders, statistical and other resources are often unreliable and often differ from one to the other source of information, so the differences are evident on the Internet as one of the most important data base.

In this analyses one starts from data presented on the net with an accent on tendencies and influences, some conclusions and rules could be formed upon. From the following table you can see relatively well the Internet users around the world from continent to continent. 1. Demographic data were based upon the resources from world-gazetteer.com, data on the Internet users were based on <http://www.nielsen-netratings.com/>, and from site International telecommunications union: <http://www.itu.int/>, local NICs and other relevant resources, all visited and table made on 01.10.2008 [6, 7].

From previous table you can conclude as follows [8]:

- Out of total world population the Internet is used by 22% which means that every fifth person in the world uses the Internet.
- Looking at continents, and bearing in mind the percentage in comparison with number of citizens, the largest number of the Internet users is in Asia, and European Union Countries. These two regions have 927 million users, 65% from the world's total user population. (1.463.632, 361). Stated above shows that here as in some other happenings, there is a high level of concentration of information technology in a small number of countries and economically developed countries, and that a large number of countries have a marginal level of the Internet users, and those are mostly developing countries.

**Table 1:** the Internet users in the world and statistics of population

THE INTERNET USERS OF THE WORLD AND STATISTICS OF THE POPULATION						
World region	Population (2008.)	Users on 31.12.2000.	Number of the Internet users in Jun 2008.	% Population penetration	Users in % in comparison to world population	User growth 2000-2008
<u>Africa</u>	955,206,348	4,514,400	51,065,630	5.3 %	3.5 %	1,031.2 %
<u>Asia</u>	3,776,181,949	114,304,000	578,538,257	15.3 %	39.5 %	406.1 %
<u>Europe</u>	800,401,065	105,096,093	384,633,765	48.1 %	26.3 %	266.0 %
<u>Middle East</u>	197,090,443	3,284,800	41,939,200	21.3 %	2.9 %	1,176.8 %
<u>North America</u>	337,167,248	108,096,800	248,241,969	73.6 %	17.0 %	129.6 %
<u>Latin America</u>	576,091,673	18,068,919	139,009,209	24.1 %	9.5 %	669.3 %
<u>Oceania / Australia</u>	33,981,562	7,620,480	20,204,331	59.5 %	1.4 %	165.1 %
<b>WORLD TOTAL</b>	6,676,120,288	360,985,492	1,463,632,361	Average 21.9 %	100.0 %	305.5 %

This is not a coincidence, when we know that European Union countries are world economy leaders concerning economic stability and standard of living. Standard of living in these countries enables elite that uses new technology and the Internet in almost all spheres of life. A high democracy level leaves the possibility of using the Internet so it is clear why penetration rate in these countries is so high.

- On the other hand, the lowest level of application and availability of the Internet is in Africa, Middle East and Australia and Oceania<sup>1</sup>, which affirms the rule that availability of the Internet is in accordance with economic situation of the country, potential of the country, and democracy level in it. In Africa, Middle East the fastest the Internet growth is evident from 2000.-2008. Compared to other countries, which shows that developing countries are more and more interested in its introduction. In the following period we should expect growth in the Internet using in these countries.
- It is worrying that the Internet in some regions and countries is unequally developed, which lessens the effects of the parts that have the Internet technologies. This conclusion is logical as the Internet is global telecommunication network representing the world's information system. In this system, each underdeveloped part influences the whole system negatively. So, highly developed countries are interested to introduce and develop the Internet in less developed countries and in that way this net will be globally more efficient and effective.

Bearing in mind above stated, in the following articles a more detailed attention will be paid to development and using of the Internet in the most developed countries of the world and some continents, for purposes of making certain conclusions and rules.

## 1.2. The Internet state in developed countries

USA is leaders in high technology spheres, and the Internet, and it needs no proof. Leadership in IT and the Internet gave America a large advantage in business world. That's why America developed faster in comparison to other countries. Namely, since 1995. America had an average growth of BDP from 4, 2% in comparison with 1, 8% in Germany or 1, 2% in Japan.

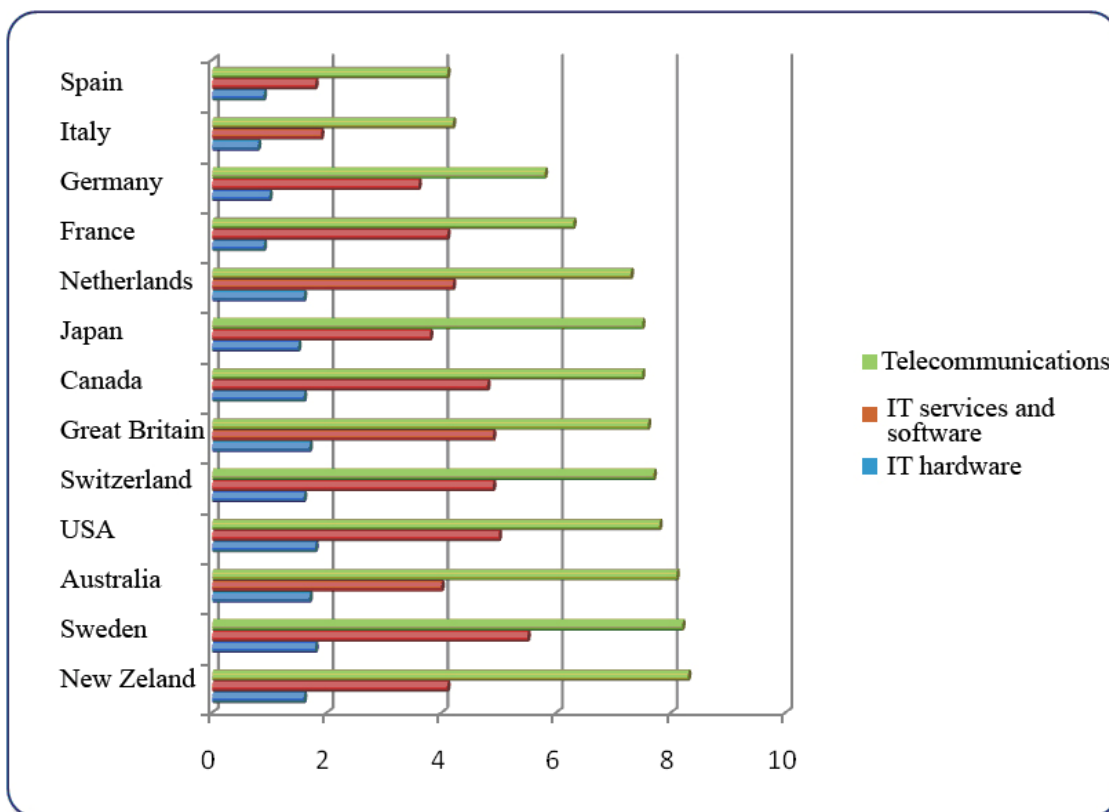
American leadership in high technology and readiness to pay attention to this field brought the largest number of IT producers to this country, the most powerful in the world. There are Microsoft, Cisco or Dell. Out of 50 largest IT producers in the world, 36 are American, only 4 companies are European, and there is no Japanese company. [3].

Advantages of American society compared to Europe and Japan will specifically become obvious during the years to come. What improves general and corporative productivity of work is application and using IT, and not production of it. Europe and Japan at the moment invest less in IT sphere, which could be seen from the diagram, figure 1 [3].

For purposes of closing to America, Europe and Japan should aim to creative imitations and improvement of what American producers make in IT field. Here it pays off to be the follower of the first producer in the world concerning IT production, which is natural, because the leader is the one to break the ice and faces with multiple risks at the way from an idea to its operationalization. The followers wait to see what will happen, walk easy roads, trying to improve functional aspects of constructed IT elements. Followers in this field get much more than they would get from a race and do parallel and specified work on developing IT. Japanese and European companies will pay purchase of IT equipment less than in previous years For example in 1993, American

<sup>1</sup> Australia and Oceania have a small number of the Internet users compared to the world's population because their population gives the smallest percent of the world's population

companies invested 143 billion dollars in conquering and production of IT, while today the same power and level of computing processor power can be bought for 15 billion dollars.<sup>2</sup> The reasons to the stated are in computer price decrease. This tendency will continue with even greater dynamics in the future.



**Figure 1:** Spending for IT in % form GDP-a

If price decrease is continued it is to be expected that in perspective the price for IT will be marginal, or free. Of course, in the future we should expect decrease in differences in IT development between America at one side and Europe and Japan on the other side, which means that the dynamics of IT using in Europe and Japan will increase comparing to the last decade. But, it is hard to think that America will lose its leadership and power, and competitive advantage IT creates on global level. E-trade might help to specially transform other and inefficient marketing canals in Japan. Recent researches showed that productivity in many Japanese companies overcame the productivity in American companies, while productivity in selling sector was 50% of the American productivity. The problem is a larger number of intermediaries in marketing canals, because of that we speak here mostly about the second distribution canal, consisting of a producer, some wholesalers, and some retailers and in the end users. In the situation when buyers or users can buy cheaper Japanese goods abroad than in Japan, by introducing IT, or E-trade, Japanese producers and retail will be forced to lower the prices and bring them in accordance with prices abroad.<sup>3</sup>

Even though the estimation on IT cost is real in Japan and Europe, there are obstacles in these countries which decrease the possibility of using the potential brought by IT and its closing to USA. It deals with the following difficulties:<sup>4</sup>

- Strict laws, and especially laws on working rights which offer high level of employee protection and prevent fast moving of the employees from traditional to new industries, and also moving from one working place to the other inside the same corporation,

<sup>2</sup> The estimation was based on research and analyses given by english economist Paul Donovan from UBS Warburg in Londonu.

<sup>3</sup> Inefficiency of the marketing canals in Japan reached such a level that a Japanese camera in New Yorku, or London costs less than it costs in Tokio. More about this can be seen at: Ž. Radosavljević: Marketing for engineers, Technician Colledge Trstenik, 2002.

<sup>4</sup> Based on research and analyses by OECD.

- There is still a large presence of producing concept, which sees the production as basic source of wealth and country improvement. Even though services have immensely grown there are still considered to be of secondary importance,
- Hindering conditions for opening companies. Comparing American normative and practice we can state that there is a high level of flexibility and less normative, which means easier entrance in different fields, service sector before all. But in Europe and Japan besides birocracy decrease it is harder by far. Analyses show that in Europe you need ten times more time and four times more money to start a business than in America. Previous fact is a result of lesser IT using in Europe in the process of starting a company, than in America. Today, it is not rare that electronic mail may be used to get various documents needed for business sphere and to open a firm, without visiting windows in organizations that give permissions, agreements and approvals. There are far more less possibility for that in Europe, which influences IT credibility on the other hand.
- In the Internet century, limitations of all kinds are not acceptable and impossible. Labour time limitations in retail sector, which means in shops, insisting upon strict rules of price lists and prices and promotions are senseless. German economy Minister has recently said that his Ministry plans to abolish some regulations concerning retail, and which directly make it slower and even unable more flexible sale. The special problem is a regulation that forbids retail business to give discounts larger than 3% from the selling price. In Japan the Internet will introduce stronger competition in supply chains.
- Sociologically structural factor is also one of the difficulties in Europe for more intensive IT application. The data say that at the beginning of the third millennium more than 70% Americans use the Internet, while that percentage in Germany amounts around 60%. This is a large closing to America, because a few years earlier this difference was up to 40%.
- Expense aspect is also present in the Internet usage. Namely, a fee for the Internet connection in Europe and Japan is generally larger comparing to America that influences the number of prescribers and users.

European countries and Japan have certain advantages comparing to America when IT is in question. It is about mobile phones usage which showed to be main connection to the Internet. Mobile phone number is far greater in Japan than in America, while each third Japanese has Internet. Reasons should be searched in a fact that America slowed development and usage of mobile phones in the country through standards. Comparing critics of mobile phone usage it is evident that they are greater in America than in Europe or Japan, especially their influence upon the health condition of the nation.

America still goes behind with an educational system. Even though this country has the best universities in the world it still goes behind Europe and Japan in education. These countries give better educational profiles. This can be a serious blow to America in the years to come. Japan and Europe were in any case slower in development and usage of IT, but their strategies of development and fixed standards provide larger benefits than it was in America.

Information technology has changed way of living radically in developed countries. This is logical and it was stated that the Internet was first activated in developed countries, and there it is mostly used today, with permanent growth in ways of using and broadening usage fields. It refers to communication sphere, to business, culture, fun, etc. These statements are generally known and a lot has been written about them. But dilemma arises in fields of change and influence of IT on national economies, certain activities and corporate organizations.

Optimists and IT admirers say that IT transforms economy. They think of speed of development and economy improvement, lessening of a product's life cycle and services, or organizations, and of the possibility of inflatory blows are if not prevented then decreased. This is why classical or agrarian economy have no value anymore, so IT introduced new concepts of work and business which are opposed to traditional economy. So in modern conditions we can talk about the Internet economy as a new paradigm in developed countries.

Informatics pessimists and sceptics pinpoint that sending E-mail, e-trade or a possibility of direct ordering tickets for aeroplanes, cinemas or games and eliminating tourist agencies as intermediaries in marketing canals, taking information from the site directly are important operation but not sufficiently to consider the Internet a revolutionary innovation that have important influence on business efficacy. IT sceptics as an argument mostly state insufficient usage of IT on management and designing sphere of corporate organizations. It is also stated that its present improvement in USA as in the most powerful country in the world is not more than a bubble.

Who should we believe? Who is right? Is it subjectivity, stereotypes in resistance to innovations and new technologies or they are objective arguments and facts which cannot be brought into question?

As in normal life the truth is somewhere in the middle. Namely, each extreme either way is unacceptable when we talk about science. So we can say that both approaches are unacceptable. Benefits and influences of the IT to the economy are big, may as much as electricity introduction to all the segments of economy and society. But there is a dilemma, when benefits are achieved by these technologies, especially concerning IT, which is a lot shorter comparing to technology innovations in the past.



What is important for objective reviewing of each innovation and so the Internet, is that the Internet does not represent anything special and specific comparing to other technological innovations that were applied in human history. It has, similar to other technologies something in common with telegraph, 180 years ago, but it also has something specific. Telegraph decreased cost and improved communication and informing, but it cannot be said that it influenced economy and applying basics of conventional economic science.

This constation especially gains in its favour when time and circumstances of some innovations are considered. Once discovery of bow and arrow, later of tools and guns made of metal presented a great innovation, maybe greater than the Internet today. According to the above, each occurrence and phenomenon should be considered from the point of time dimension it came to be in. Unless it is done, conclusions can be subjective and thus unusable for certain rule formation.

For purposes of quality approach and discovering the Internet influences on society and business sphere in modern conditions it is necessary to see this influence from the point of view of macro level of developed countries and corporate level. Besides these two levels there is a high level of correlation, so their individual review would contribute higher study in these question analyses. In addition, there is problem in more precise boundary making of where it starts and where macro ends, or micro and mezzo level.

## **2. PROBLEMS OF THE INTERNET USAGE IN DEVELOPED COUNTRIES**

The Internet as a technological solution was introduced with an aim of spreading domination and power of men over men. The same happened with other technologies, so in this question, information technology is not an exception. Domination was at first achieved by having information, when everybody tried to come to the key resource first, for that enabled advantage.

In modern conditions discovering information is important but keeping information is becoming more and more important. So, in modern world the problem is not to find a piece of information, but keep it and thus save competitive advantage. Because of that, today in developed countries a special accent is given on finding technologies to protect information and personal identity of people while in less developed countries, the problem is still to access data and transform it into information and knowledge, as the most valuable resource.

Using the Internet is a problem which attracts attention of information experts. Highly developed countries are able to use the Internet and IT in gathering, distribution, storing and using knowledge, as verified and scientifically confirmed information. As it was stated, knowledge has a higher power comparing to information, so the basic attitude of relevant subjects of society aimed at knowledge, with a tendency to create intelligent machines able to think by neuron nets. So, in the following period we should expect developed countries to aim their attention to wisdom, as the highest level of men's quality.

When corporative management is in question, it shows that the Internet is applied in a large number of operative and executive functions, and before all in production. So factories and lines are organized to be managed from the distance thanks to information technology. In modern condition the accent is put on introducing the Internet and IT in a sphere of services. It shows that this sector has problems with connecting elements of management and service process, and that there are some advantages in introducing IT and the Internet, especially when delivery of a large number of services by the Internet.

It also shows that IT and the Internet is applied in executive functions, on zero workplaces, where production and service delivery and service using takes place. Here, the Internet and its application did not show larger difficulties, as reparation was in technical service's hands and also in finding technical and technology solutions.

In modern conditions, the Internet is least applied in management and organization. But, homogeneity does not exist here, too, as it shows that the Internet is applied more on lower level of hierarchy pyramid where bigger results can be achieved. But the higher we go, the lesser the Internet usage is, even though it shows that it can give greater effects here. So in developed countries one should expect the Internet to be more applied on a level of strategic management, which means in management process (planning, organizing, managing, coordination and control), as well as in some functional fields.

In previous context it is evident that information technology and the Internet create large possibilities in management process rationalization, especially when organization design is in question. Those enable decentralization and a phenomenon called integrated decentralization introduction, where all business sectors will have the possibility to show their results and be rewarded according to them. IT enables integrating of relatively independent units into a unique wholeness. Nevertheless, the practice shows that besides introduced information technology in corporative organizations, centralized organizational structure dominates. Here, the problem is not IT but in dominating classical organization and management suffering from a determinism syndrome, schematism and authoritatively, because of which effects of the IT are absent.

Disregarded role of a human being and marginalization in informatics era shows a large damage in business world. By introducing IT, it was considered and it is still considered that a human role is marginalized, as robots and computers took functions humans had. To prove these attitudes unacceptable is not necessary, as it is evident



that each machine and computer works the way it was constructed and projected by men. When men want to change the way of functioning, they must think about it and then realize it through a project and production. So, humans cannot produce a thinking machine, or a machine to rule over men, but it is laves under the jurisdiction of people. A famous cybernetics Lerner warned people about this around 40 years ago. "However large discoveries in mechanization and authomatization are, whatever systems of data processing are built, humans were, are and will be a decisive member in a complex chain of mutual connections between men and nature - men and machines, they will always be the commanders of all the systems created by men for men"[3]. In new made circumstances the change of relationships between IT and men will move towards an increased role of men in organization at key, critical or different positions, especially in organizing IT usage and their modification for purposes of more successful performing business activities.

Corporative organizations surpass in the Internet usage, which is natural as it is confirmed that by application of informatics technology and the Internet a concurrent competitiveness is achieved and that successful the Internet usage is a strategic advantage which enables a higher security and survival, growth and development of companies on more and more turbulent market. But the Internet is still not sufficiently applied at Ministries, state organs, public sector, etc. In these organizations the Internet soul have the primary place, especially through creation E-Government and modernization of the public sector. In that way electronic Government and the Internet applied in state administration should set an example for other structures to go this way. This does not happen because the state is not exposed to market competition and does not exist on satisfied customer or citizens who pay and support it. It is not rear that in public hospitals, state offices and often Ministries of developed countries mechanic typing and calculating machines can be found, primitive copiers etc. Inadequate IT usage in public sector is present in some underdeveloped countries of the world, as according to Singler Laws each country is a bad host, a little fast and of high quality can be done, while apsolute state is absolutely bad.

Even though the Internet and the ability to use internet services is present in the whole world today, it is still used in highly developed countries. There is a dilemma whether these countries became famous for technology advances and knowledge improved or their leader position helped development of technology and its application in different areas. Precise analyses show that even in a group of highly developed countries there is a different intensity of information technology usage. Some highly developed countries included IT in all the areas, the others use the Internet specially and selectively, and legally bound and forbid this matter. The reasons should be looked for in different factors and forces which influence the Internet, and often in misinterpretations when place and role of information technology is in question in society and corporative organizations.

Practice shows that information technology and the internet itself and educated informatics personnel in business and other organizations are often represented as factors of competitive advantage. This attitude is problematic for it is often considered that by mere introduction of information technology, the competition will be beaten and thus competitive advantage automatically created on the market.

It is indisputable that modern information system is only a potential which enlarges internal power as on national so on corporative level, but nothing more than this. Because of this prof. I. Adizes rightly states: „All of this can be treated as internal factors of support, or internal power, and not as a factor of competitive advantage which our buyers consider to be the most important for them, and because of which we are better than leading competition” [10]. This attitude should be promoted, especially in today's hypercompetitive relationships where the will to gain buyers became a general obsession not only of management but also of employees.

A line of intern and external factors influences the Internet availability in some countries. These factors have some features in common in each country, but also some specifics, which significantly influence introduction and development of the Internet. Some of the factors are specific for only special countries where they exist, others function in specific situations, which means that the factors are dynamic and that they can be seen in the context of general or specific situation in which they function.

### 3. CONCLUSION

From the previous analyses it is obvious that the Internet became irreplaceable information and communication technology in modern conditions. It came into existence as a result of human need to answer to new challenges, turbulences and uncertainties that happened in developed countries of the world. It is obvious that the Internet today is mostly used in developed countries of the world but that there is a heterogeneous intensity or quality in usage. The Internet technology significantly influenced all the fields of life and work, as individuals, corporative organizations or national states. But it created certain problems which as a rule follow all technological innovations and technologies more or less. So, each technology has its benefits but also brings new problems discussed in this paper, especially concerning obstacles in Europe and Japan in question of using information technologies and decreasing the price of this technology. Nevertheless, each new technology application, and so the Internet always have more positive than negative sides, which is logical, as it would not be used otherwise.

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## **DISTANCE LEARNING USING INFORMATION TECHNOLOGY**

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**Summary:** *The development of information technology and constantly innovating educational technology causes changes in the methods and forms of teaching and organization that would be optimal in an age of mass application of the Internet and electronic sources of knowledge. Education is, as a rule, slowly opens up to new technologies in relation to production, transport, services, etc. However, young people who are at home and out of school live in a technologically rich environment expect changes in education in accordance with the imperatives of education for the 21st Cent. In that sense, but is slowly introduced in the education of multimedia systems, distance learning, virtual schools and other technologies that lead to increase in the activities of students, measuring quality of knowledge and progress of students in accordance with individual abilities and prior knowledge.*

**Keywords:** *educational technology, Internet, multimedia, distance learning*

### **1. INTRODUCTION**

The historical development of this complex form of education - learning, dates from the first half of the nineteenth century. It is considered that the first pioneer was an Englishman, Isaac Pitman, a teacher by training, has taught stenographer correspondence Bat in place, long ago in 1840 year. Students are trained to prescribe short paragraphs from the Bible, and the materials are returned to the evaluation of the postal system (New Penny Post System). The following decade, his brother Ben was also done in the U.S., and the association for the development of "learning from home" has already been established in 1873 year.

University of London, 1859 was the first university that offered the level or rank of training for distance learning, based on the external program. Another pioneer in starting this vision of education was the University of South Africa, which were introduced Correspondence Education courses before 1946 year. Distance Education largest university in the UK, Open University, since 1969 year. In Germany is similar to open in 1974 the Fern University in Hagenu.

Around the world today there are more than 90th institutions, often under the name Open University, in English or in translation in the local language, and is modeled on the recently created Open University in England, which primarily emphasize the importance of learning from a distance.

Electronic learning, known as distance learning (Distance Learning, abbreviated DL), entering the international market of electronic learning. Today's electronic learning quite normal phenomenon in the most famous colleges (Harvard, Stanford, MIT), who in their virtual classrooms provide numerous accredited academic courses.

Special interest in this type of learning have a country with a large territory, where the student population enough distanced (Australia, Canada), or the lack of sufficient educational capacity as and when the budget is insufficient for students to use the existing educational institutions. For these reasons, many academic institutions make steps toward implementation of virtual classrooms.

For a long time are used educational programs in education. For the younger age is interesting and useful edu program ("smart game"), which the authors seek to sales of serious educational content using interactive simulation, entertainment games or quizzes.

Example: "little Learner" for future students on the CD-ROM, began its work in 2005 as a fun educational game for children from 4 to 7 year. Contains seven educational and two entertainment parts. That children with games and entertainment can overcome: letters, numbers, nature, society, transport, color, relations between objects and

still full of it. Throughout the adventure of their hero, Mine and Morfek and wizards Dage guide them through a series of adventures, meets children with all facilities which are necessary for the carefree child school starting.

## **2. GENERAL ASPECTS OF DISTANCE LEARNING**

The American Association for the distance learning (The United States Distance Learning Association, [www.usdla.org](http://www.usdla.org)) defines the concept of distance learning as "achieving the knowledge and skills through the submitted information and directions, using different technologies and other forms of learning in the distance." One of the definitions, which in the opinion of the author of the study simply and well define the term, mentioned: "Education is the distance system and the process of connecting students with educational resources distributed" [8]. Education aided information technologies means at least three basic components:

1. Computer Assisted Learning – CAL
2. Computer Assisted Research
3. Distance Learning - DL

Computer-supported learning is most often used and is very suitable for realizing interaction between students and computers in order to improve existing technologies for learning, teaching did more obvious, dynamic and interesting with the engagement of more students' senses in acquiring new knowledge. Computer supported learning includes multimedia educational software, computer simulation, virtual reality, artificial intelligence, etc. The use of information technology will be an individual with knowledge, constant feedback and monitoring progress of students, which helps the teacher to realistically value knowledge to students and refers them to other teaching the media in order to successfully master the new knowledge. Computer Aided Learning to use a relatively long time in education. In the last five years, computer technology has perfected itself so that the educational software from simple DOS applications perfected the three-dimensional virtual reality which raises the internal motivation of students and learning becomes very interesting.

Computer-supported research is, today, significant benefits, in higher education institutions for theoretical research literature from different regions and for empirical research with the use of adequate statistical software (STAT VIEW, SPSS, etc.). Theoretical research literature is almost unthinkable without the use of computer technology, because, today, almost all the major books, papers, studies and collections of papers from the professional and scientific conferences are translated into electronic editions and accommodation on the web portals, publishing houses, universities, libraries, schools, etc. Trend speed of gaining any significant information using search engines to the global computer network, will continue in the next decade, when it is expected that the institutes for publishing textbooks and other publishers to offer their books in the electronic edition.

Distance learning using computers, telecommunications, cable television all the more frequently used in education. Many universities in the world are, in order to level up knowledge that is given to students, instead of previous practice by which the teachers traveled to other universities, introduced the practice of exchanging ideas by using telecommunications technology. Namely professors hold lectures on home school, which is transmitted through the Internet to other locations. This has achieved long-standing intention leaders in education to people instead of traveling ideas, which significantly reduces the material costs of college. Education distance instruction represents a way of working with students who do not require the presence of students and lecturers in the same room.

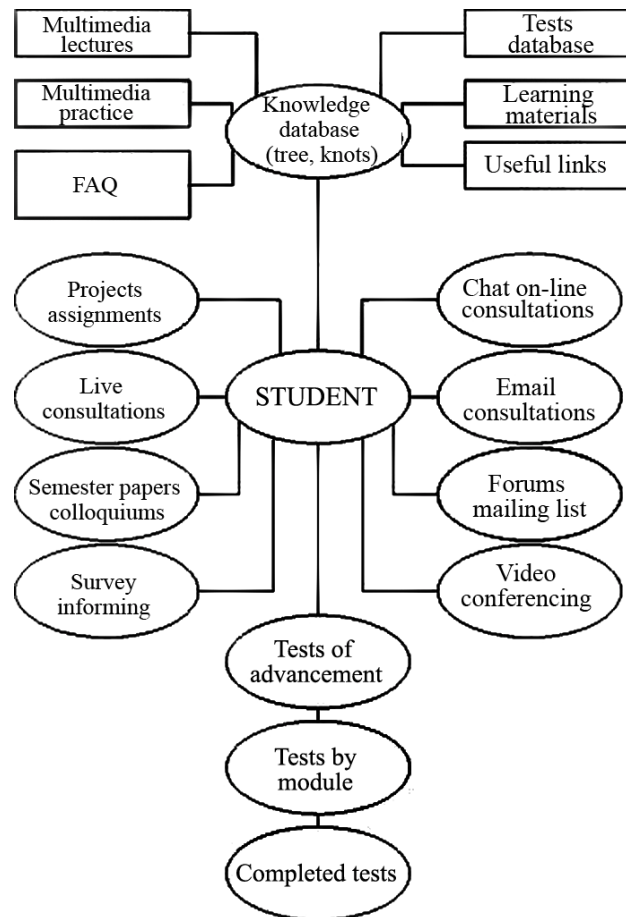
Development of education in the distance dates of the last half century, when they used the radio broadcast and correspondence schools to education was available and students those who could not be transported to school or are not able to attend every class. In terms of rapid technological change and changing market conditions, the American educational system had a duty to provide increased educational opportunities without the increase in material resources.

Many educational institutions respond to this challenge by the development of distance learning. At the basic level, district education takes place when the teacher and students are physically separated by great distance and when to override this gap uses technology (ie voice, video, data and print). These kinds of educational programs adults may provide a second chance to obtain a faculty of education, they can reach out to those who have limited time, distance from college centers or physical handicap and can refresh the knowledge and practice are in line for development of science and technology in their activities.

## **3. QUESTION OF SUCCESS OF DISTANCE LEARNING**

Many cultural workers ask whether the distance students learn as well as students who are studying in the traditional way, in the classroom. Research compare distance learning and traditional education indicate that teaching and learning can be as successful as traditional classes if they use the appropriate teaching methods and technology, if there is interaction between the students and if there is in time feedback between teachers and students (see references Moore & Thompson, 1990; Verduin & Clark, 1991). Multimedia learning materials in

digital form provide greater evidence, dynamism, and the possibility of individualization in accordance with its own interest of students. Intense development of telecommunications technology and computer systems, connection to the Internet and learning based on hypermedia systems enable the best application of computer technology in teaching.



**Figure 1:** Distance learning system (DLS) [9]

Computer program provides a flexible organization of activities, lectures and study materials and a complex evaluation of the work of students. According to the research of developed countries where education in the distance used in the last decade the twentieth century were found advantages to the traditional teaching that is reflected in the following:

- Classes are individualized, creating the possibility that the student is progressing pace that suits his psychological and perceptual capabilities, as well as pre-determined from the field,
- In combination with other electronic sources of information (electronic encyclopedia, magazines, libraries and the Internet) provides the research of the most actual content in line as its own interests
- Permanent or periodic interaction with sources of information increases the activity of students and develops critical thinking and the ability to analyze and make judgments,
- Interaction is established not only with teachers but also with students from other schools, which share knowledge and experiences, and evens level of knowledge in different schools,
- The educational institutions where there are not enough teachers in all cases ensures that instead of people travel information, which significantly reduces costs,
- Educational software that monitors the distance education is designed to ensure periodic evaluation of knowledge in the learning stage, so that the next valuating knowledge through interaction with the teacher or other students made self-valuating use of educational software,
- Ensure the engagement of the best experts in the area, which raises the quality of teaching at the senior level,
- The colleges and schools who have practical training in schools, medical centers, factories and other institutions, allows the monitoring and critical review of practices that make teaching more efficient, and reduce the costs of education. Education distance learning, of course, represents a significant innovation, which in combination with traditional teaching contributes to improving the quality of teaching.

## 4. THE METHOD OF CONDUCTING DISTANCE LEARNING

The teacher who teaches in the distance has a wide range of technological options that can be divided into four main categories:

Speech - In audio teaching aids include interactive technologies: telephone, audio conferencing and shortwave radio. The passive (i.e., one way) audio tools include tapes and radio.

Video - The teaching aids include seen still images such as slides, previously made motion picture (for example, film and video tapes), as well as moving images captured live and combined with audio conferences (one-or two-way video and two-way audio).

Data - Computers send and receive data electronically. Therefore, the term "data" is used to describe the broad categories of teaching resources. In computer applications for distance learning include:

- Teaching with the help of computers (Computer-Assisted Instruction, CAI) - uses the computer as a self-teaching aid for the presentation of individual lessons.

- Education under the control of computers (Computer-Managed Instruction, CMI) - uses a computer to organize classes and tracking of students. The actual program does not have to be carried over computers, although CAI be combined with CMI.

- Education through computers (Computer-Mediated Instruction, CME) - describes the IT application, which facilitates learning. The examples of such applications include: electronic mail, fax, computer conferences live and Web applications.

Press - This is a fundamental element of distance learning and the basis of which are evaluated all other educational systems. There are various printed formats in use: books, manuals, scripts, teaching plans and practical examples.

### 3.1. Which technology is the best?

Although technology plays a key role in distance learning, in the center of attention from the teacher must remain the results of teaching, not technology classes. The key to successful education is a distance, before the election of the system, a detailed study of the needs of students, teaching content requirements and limitations of teachers. This systematic approach will usually lead to a mix of media that serve a specific purpose.

For example:

- A large number of printed - printed material can provide the most basic teaching of content in the form of text, items, and a list of documents necessary for reading, curriculum and daily schedule.

- Interactive audio and video conferences can provide live interaction face to face. This is also an excellent and cost-effective way for bringing guest speakers and subject experts.

- Computer conference or electronic mail can be used to send messages, restore of finished domestic tasks, and other targeted communication with one or more members of the class. They can be used to increase interaction between students.

- Previously recorded video tapes can be used for the performance of teaching lessons and show visually oriented content.

- Fax can be used for distribution of domestic tasks, to send the last changes, for receiving finished domestic tasks and for giving timely information about the results.

The task of teachers is that the application of this integrated approach carefully selects one of several technological options. The aim is to create a mix of learning media to meet the needs of students in a way that is optimal didactical successful and economically acceptable.

Successful applications of distance learning, starting with careful planning and better understanding of the subject complete the requirements and needs of students. Appropriate technology can be elected only after these elements are analyzed in detail. Materials are not created spontaneously; they emerge with heavy work by many individuals and organizations. In fact, a successful application of distance learning is based on the systematic and the joint work of students, teachers, assistants, support staff and administrators.

## 4. KEY FACTORS IN DISTANCE LEARNING

This section briefly describes the role of key players in the distance learning and their tasks.

**Student** - Meeting the educational needs of students is based on each successful application of distance learning and is a test by which to measure all efforts in that area. Regardless of the teaching requirements, the primary role is to come to new knowledge. It is a difficult task under the best conditions, since it requires motivation, planning and capacity for analysis and application of the contents of the. When the lectures are performed at a distance, there are additional challenges because students are often separated from others who have the same subject and interest, have little or no opportunity to communicate directly with the teachers out of classes and must rely on the technical status in order to overcome the gap between physically separated participants.

**Teachers** - The success of any distance learning is to a large extent on the teachers. In the traditional classroom, teachers' responsibility includes the planning of the teaching content and understanding the needs of students. Teachers who teach in distance face special challenges. For example, a teacher must:

- Understanding the characteristics and needs of students with limited, or no, contact face to face.
- Adjust the style of teaching, taking into account the needs and expectations of multiple, often different, the audience.
- Develop understanding of technology, but remain focused on their teaching role.
- To perform successfully as a skilled assistant and lecturer.

**Assistants** - Teachers are often considered useful if there is an assistant who serves as a bridge between students and teachers. To be successful, an assistant must understand the students and harmonize their activities to fulfill their needs and expectations of teachers. More importantly, an assistant must be willing to follow the directive, which establishes a teacher. In cases in which material and technical conditions allow it, the role of assistants is to increase knowledge even when the subjects have little knowledge. Their minimum responsibility is to set up equipment, collect homework assignments supervise examinations and serve as the eyes and ears of teachers.

**Support staff** - they are an indispensable factor for distance learning and ensure that the myriad of details that are essential to the success of the program to be timely resolved. Most successful applications of distance learning and registration form, students, transfer and distribution of materials, ordering books, obtaining the rights to copy, make a schedule, the processing of reports with the ratings, the maintenance of technical equipment and so on.

**Administrators** - Although administrators are usually involved in the planning of district education institutions, when the program becomes operational, they often lose contact and give control of the technical directors. However, district administrators successful education must be more than just the people who give ideas. They work closely with technical and support staff to ensure that the technological resources effectively used for the purpose of enhancing the academic mission of teachers. More importantly, they keep the focus of academic institutions realizing to meet educational needs of distance students their ultimate goal.

#### 4.1. Prerequisites for the implementation of model

Organizational requirements can be divided into:

- 1) Education, and
- 2) Technology.

In the category of educational prerequisites included:

- Acceptance of distance learning as a regular way of studying at their own institution,
- The ability to prepare teaching materials in accordance with the performance of learning technology in the distance,
- The ability of lectures,
- The ability to control the quality of teaching and learning, and
- The ability to support student-users of learning from a distance.

Technological component of organizational preconditions are:

- The ability to use technology required by the student,
- A sufficient degree of technical staff at foreign educational institutions to ensure quality and permanent work of all elements of the technical prerequisites for the implementation of the system of remote learning, and
- The ability of quickly response to technical failures of a system.

#### 4.2. Proposal for technological solutions to distance learning

In the framework of the project is planned by modeling software that provides access to students working materials (converted to digital form) for all curriculum areas. The work material is provided to students through Internet (with the faculty - school) or the Internet (from home) access to all the working materials for formal and informal education. Facilities would be structured as follows:

1. Access to educational facilities,
  - a. audible media
  - b. Visual media,
  - c. Text media, and
  - d. animated lessons (presentations with text and audio recordings).
2. Access to professors lectures (video conferencing with multiple participants)
  - a. On-line one-way;
  - b. On-line two-way (with more involvement of students or teaching. limited number of participants bandwidth range of connections).
3. Co-operation of students / pupils
  - a. Work on exercises;
  - b. Work on the projects;

c. Consultation.

On-line video communications that can be:

- a. One-way, participants listen to lectures
- b. Two-way, participants agreed to discuss

Video communication can be held through:

- Modem speed 56 Kb / s;
- ISDN access speed 128 Kb / s;
- We set the modem speed of 256 Kb / s to 1 Mbit / s;
- Transversal connection speeds up to 2 Mbit / s.

Quality video communication depends on the speed of transmission. With greater speed increases and the quality / image size, and a greater number of participants who participate in the conference. All the video might be saved for later analysis. For the realization of such classes is required following hardware:

1. Server (PC) installed with the Windows server. Internet connections with the locations that are planned for video communication. Internet connections with the public Internet to students / pupils access services. Internet connection with local servers.
2. Computers and software required for video to remote locations.

## 5. BASIC MODULES AND WAYS OF DISTANCE LEARNING REALIZATION

Based software makes the Learning Management System (LMS), whose task is to manage databases that allow users to easily access the desired material, to search facilities, etc. The module for university education will be a facilities related to the primary literature for each subject in hypertext form, lectures professors in writing and Power Point presentations, video sequences clips lectures with professors, aims to practice, examples of realized projects, test questions, instructions for preparing the exam, etc. Each item would have reserved discussion forum through which to Students can read answers to frequently asked questions, to set up new questions and get answers, to send seminars and graduate work, and receive feedback and instructions on how to complete the corrections and what more quality finish their obligations. In this module are provided and computer conferences over which students would be related faculties could follow classes at the same time with different faculties, communicate with each other and exchange of knowledge, which would enrich their experiences, raised motivation and create prerequisites for the interactive classes at different schools. A similar practice exists in the universities of developed countries and implemented in such a way that by organizing students across BIM projector and Internet follow lectures, and when they want to ask questions activates the camera and microphone are in the classroom, which makes constant interaction in synchronic technology classes. The numbers of arrivals visiting professors are, in this way, reduce, reduce costs, time and more rational use. Module for students would include tests for the preparation of the exam with multiple choice and open issues, as well as tests for periodic checks of knowledge that would be teacher sent electronically to the mailbox.

In this way the teacher could observe and analyze the progress of students and better finalize exams. This module is designed and discussion forum for each subject so that students can ask questions, and teachers or staff suit, thus reducing the need for the arrival of students at the university and provides constant interaction between students and teachers.

It is especially important to prepare the organization continue to be aligned with the requirements of the Bologna Declaration and the draft Law on the university by the number of exams decreases, which means that it must increase the involvement of teachers and students and to carry out more frequent checks of knowledge (measurement, monitoring and assessment various activities) students. Information technology with so-called intelligent software can be of great help the teacher to follow, not only outcomes but also the process by which student outcomes achieved. Each step in the process of solving the task would be valued, show the possible errors and the student would be received instructions to properly resolve the tasks.

It should be emphasized that information technology does not exclude nor diminishes the importance of teachers in the educational process, but it provides sophisticated role that reduces the time for the presentation of teaching content that students can independently to read, and remains more time for the development of creative potential, critical thinking development and understanding of principle of solving tasks

## 6. CONCLUSION

Public access to web portal would popularize learning, and hyperlinks to interesting Web sites would popularize foreign language and create awareness to people that using the Internet can reach almost all the information relevant to their training and better information in the field of their interests. It is necessary also to be made permanent evaluation eLearning system and its improvement in accordance with the changes that are happening in



the developed countries of the world, and based on the experiences and attitudes of teachers and students in practice.

Public access to web contents the need to protect the privacy of information about students, and predicts a database of information on students who would be protected by the code and is available only to authorized persons. The file that could be accommodated results progress students must protect and archive on CD's, not only for the protection of privacy, but also for the avoidance of possible abuse by students.

However, in this initial phase, the evaluation of students using the eLearning system would only further information, teacher, and in no way only, and will be for a period of exploitation, of course, impose new organization adapted to the social environment in which we live.

Learning is designed to monitor the activities curriculum courses, but the use of hyperlinks to the data and the opportunity based on fundamental studies of certain areas, which corresponds to the individual interests of students (students) and all others who would be the teaching materials used for formal or informal education. These facilities would be particularly interesting in the field of information technology, management, macro-economies and other areas that will study the future managers and the theory of teaching that would be interested in all the teachers of primary and secondary schools, as well as parents.

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## **MODERN STRATEGIES OF TECHNOLOGICAL MANAGEMENT**

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***Summary** Realization of development without adequate long-term and medium-term strategy of socio-economic sustainable development strategies and technological progress is unachievable without respect of innovative process. In today's world of turbulence and the characteristic globalization by emerging and sudden rapid technological change due to growth unpredictable number of innovations, the introduction of new technologies and new communication, critical factor of transition countries from the group of undeveloped in the group of developed countries, modern technologies and their transfer to countries that do not have capacity potential for creation of innovative technologies. Technological development can be more certain if the environment for which it is assumed certain technology, possesses a deep knowledge of organized, active experience, critical level of wisdom and vision of themselves.*

**Keywords:** strategy, technology, development

### **1. INTRODUCTION**

Man according to their cultural-social and psychological nature is trying to find out more about your future and the circumstances under which the future will take, not only because of curiosity, but that made certain decisions in relation to survival, survival and development, that in the whole facilitate life, i.e. to be more efficient and effective.

Organization of continuous functioning market, in terms of functioning of business and consumer society, in which the top of the capital, is the biggest problem of modern market economy. If it happened that the market fails to work, by economic logic, there would be established to monopoly situation and the lack of integrated markets.

How the market is an integral assumption of the market economy as a whole, modern market economy is not only simple but it is a complex organization of bidding competition, a number of wins and defeat.

Forecasting technological development represents a market-oriented company for a set of information necessary for deciding on plans for production, research and product development, variations, innovation of existing and development of new products expand production capacity, procurement plans, personnel plans, and financial plans.

Survival in the market implies that the positive business will be created the surplus value or profit that the planned orders, among other things, and for the improvement of a very important element (new technologies, training staff, etc.), Which always re-enable survival. The actual technological development demands in the market [1]. Real technological development which by transfer applies the new technology, is that it has a deep knowledge of organized, active experience, a critical level of complex wisdom and vision of itself. In other words, the actual creation of a specific technology in a future time is based on certain statements and assumptions.

### **2. MODERN TECHNOLOGICAL STRATEGIES**

It is not possible to achieve cultural civilization development, and that there is no adequate long-term and medium-term strategy of socio-economic development strategies and technological break through, and is unworkable, and that does not accept the evident technological development, innovation and a certain prediction.

"In today's world of crisis and turbulence characteristic globalization by emerging and sudden rapid technological change due to growth unpredictable number of innovations, the introduction of new technologies and new communication, critical factor of transition countries from the group of undeveloped in the group of developed countries is the transfer of technology, which confirms the example of South-East Asia "[1].

Transfer of technology and effective management of technology becomes a strategic weapon of many countries and multinational companies in competition for global markets and mass consumers. Development of effective strategies in the era of globalization imposes the first identification of opportunities in the economic system and the specific organizational, effective mission in order of contribution to economic development of society.

Effective mission is imperative for every organization and when a defined, each functional sector in the organization defines its mission identified the mission as a whole. Functional Areas represent sectors which are essential for the activities of the company, beginning with marketing and finance, to manufacturing activities.

The primary mission of the company will be realized through correctly - formulated the strategy of functional sectors in the framework of the organization. In the domain of production management, strategic decisions, marketing and finance are the three principal components of strategic triangle and mainly relate to the period longer than one year and for their implementation is needed about a year, as opposed to tactical decisions, which can be drastically modified within less than one year. Both decisions support the management of production as well as the mission of the company.

When it comes to modern tendencies in the strategy of production, its development includes:

- The question of production capacity, order number, the selection of options in the production, quality of product, costs of production, application of advanced technology, reliability, planning delivery, reducing inventories, spare parts and service, increase competitive advantage.

Production Management has a large share of the strategic decisions that are aimed at increasing the competitive advantage of companies.

Factors are very important to increase the competitive advantage of companies are as follows: [1]

- Width production lines,
- Forces of research development,
- Product reliability,
- The time of delivery,
- The value of products,
- After sale service,
- Marketing professionalism,
- Interest in the needs of consumers,
- Professionalism in the management,
- Product design,
- Integration of products in the portfolio companies,
- Computerization and automation of production,
- Application of new technologies in the production process,
- Image and
- Recognition of the company..

### **3. MODERN PRODUCTION STRATEGY**

Modern manufacturing strategy on a global level includes the following components:

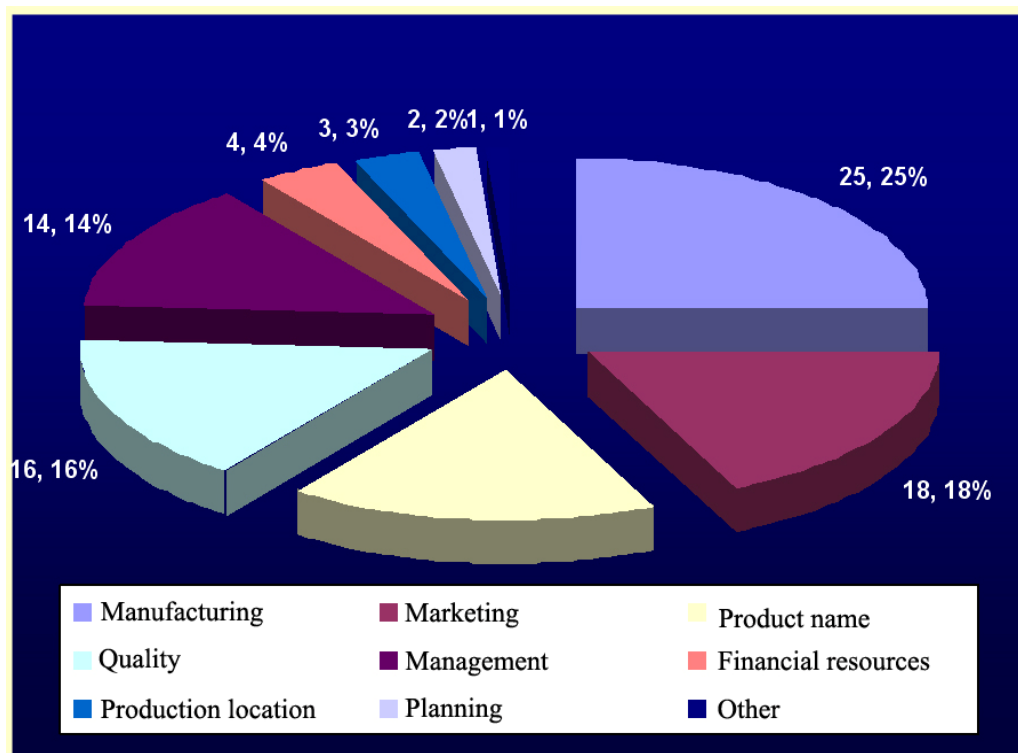
1. Production strategy that defines the entire production process, including the time of the development plan and predicted the quality of products, with the effort of reducing development costs by applying new technology research and development - Lean technology.

2. Business strategy that is based on the decisions of managers, in line with the existing level of technology, and an assortment of quality products, full usage of human resources and maintenance of technological lines of production.

3. Successful positioning of technological facilities for manufacturing and service activities determines the ultimate outcome of the surgery. Fails in locating the plant production and distribution of work in branches of multinational companies affect the efficiency and effectiveness of production. Factors effective positioning for efficient production are: the position of the sources of raw materials and energy, position, major roads and road transport, port, airport), as well as the mapping of the territory using the methods of global geographic information systems.

4. Strategy project production process, is related to factors of production (employees, procurement, planning inventories, equipment), which affects the design of production processes. Preparation of high-quality study of feasibility and viability, taking into account not just financial-economic feasibility and ethnic technological feasibility in terms of raw materials, energy fluids, equipment, and have a good scientific foundation in terms of

applied research, has great importance for the successful interpretation of the strategy project. In figure 1 is shown categories of strategic options.



**Figure 1.** Categories of strategic options (share in %)

5. Supply strategy is based on determining the necessary quantity, quality and prices of production materials. Certificates on procurement of materials must contain certain standard information, including: name, type, class, level of quality, applicable specifications, drawings, process requirements, guidelines for monitoring, as well as the name and number of the international system of quality standards that apply to the product.

6. Disposition business, technological and administrative space, production equipment and furniture, which is necessary for efficient production can be established during the project, but should be subject to review and optimization, after commissioning the plant in operation or in case of re-engineering production processes.

7. Optimal strategy of stock in the process of production, Just-in-time (exactly at the time), the strategy of production without stocks with the minimum necessary amount of materials and no storage of finished products. Rapid development of electronic industry and computer technology has a radical impact on the change of production environment in almost all branches of industry, as highly developed countries in the world and other countries. Introduction of computer integrated manufacturing systems and Robotics, increases the level of productivity and product quality.

Of particular importance for the organization is, first of all, choice of technologies and modes of their procurement. Determining the way for exploitation of technology is a very important, strategic decision by the organization.

Exploitation of selected technology it is possible to implement in two ways:

1. Internal exploitation is considered to be the use of technology for design, development, production and sale of products. The internal technology exploitation, firms operate and participate in a business where such technologies are used, whereby some of them may be the key to success for a business.

2. External exploitation, which implies the transfer of their technological capabilities to other companies that will apply them in their own business. Advantage of applying external exploitation of technology is in the following cases:

- When the technology company can protect through patents or copyrights;
- When a company wants to enter the market that can not be directly broken because of economic barriers, local meanings, etc.
- When the lack of resources for direct entry to the market, when you want to exchange technology with another company, when a company wants to control the potential competition through a contract of license, by focusing them what the purpose of research which they can create their technology, or even preference of specific competitors.

It should be stressed that internal and external technology exploitation are not mutually exclusive. Individual companies, working solely on research development, not the conduct their technology, they are actually only research centers.

Common case is when firms are reluctant to sell technology, or to exploit its technology and provide licenses to others, some develop their technology in some markets and sell them to companies that will use these technologies to other markets. This behavior is depending on the strategic policy of the company.

In figure 2 are shown various production strategies.

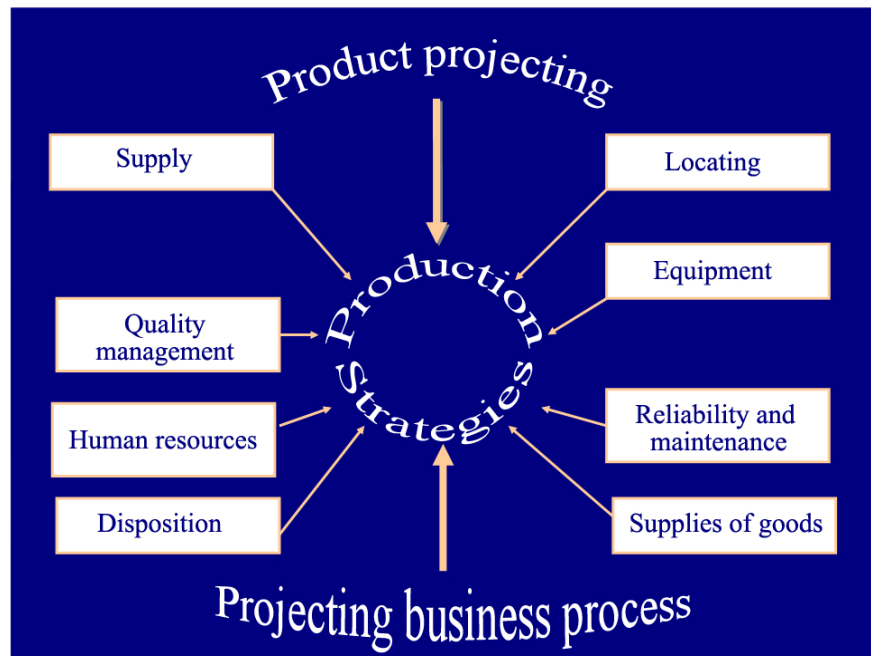


Figure 2: Production strategy

#### 4. OFFENSIVELY INNOVATIVE MARKETING STRATEGIES OF TECHNOLOGY DEVELOPMENT

The basic characteristic offensively innovative strategies that, that is created by, in order to achieve the technology and market leadership in introducing new products and processes in relation to market competitors. Bearing in mind that science and technology generally available to any company, innovative strategy requires the establishment primarily on their own, independent research development, or to significantly fast implementation of new technological possibilities of the other competitors. In other words, offensively innovative strategies can be based on one of the available possibilities of combinations of these advantages.

Innovative strategy involves engagement of key individuals, the necessary consulting arrangements, contract research, good information systems, personal status or their optimal combination. And in addition, one innovation can not get all the relevant scientific and technological information solely from one source, so you should offensively strategy can not be imagined without own strong research and development base within the enterprise.

Own research and development unit has an important role in defending strategy, because it must be generated unavailable scientific and technical information and undertake the proposed innovation to the moment of starting regular production.

Very common case is the establishment of a special enterprise which aims to exploit an innovation that is fully developed in a different place. Such enterprises are mainly composed of a small number of employees and fall into the category of offensively innovators. It is established especially when it is found in opposition, refusal or inability of existing enterprises to accept offensively strategy.

"Offensively strategy for technological development of enterprises requires intensive research and development to make it different, if for a few years does not introduce any innovation in regular production. Coming to their technological innovations, a company rule protects technological innovations, in order to profit, which will cover the high, long-term investment in the development of research "[2].

Application offensively innovative strategies carry with them a certain degree of risk to which a company has to account, there are many cases when individual companies more than ten years do not earn income on the basis of

their own research, and in some cases never. Studies have shown that when these companies were not represented in fundamental research, which represents the core scientific and technological function. Existing interactions between science and technology is a complex process of the inevitable mutual penetration, as well as the conflict of old and new knowledge. Scientific and technological functions and efforts within offensively innovative strategies of companies look for permanent and high material investment, high costs for development research. Regardless of the high share of the costs of research and development in the total cost of innovation, should not diminish the remarkable importance of production planning, market research, propaganda and marketing. Advantages in the market can not be achieved without good research, technology and technical staff, both in Innovative activities, and to work on creating products and related marketing support.

## **5. DEFENSIVE INNOVATIVE MARKETING STRATEGIES OF TECHNOLOGY DEVELOPMENT**

Small number of enterprises can fully offensively that follows a strategy for a longer period of time. Basically, after achieving a successful and original innovations, enterprises can choose an adequate consolidation of its position, following different strategies, from the defensive, imitative, dependent (satellite) and traditional, to the opportunity strategy.

Defensive strategy means that a company has its own research, development, and thus this strategy may be equally intense research as well as offensively, the difference often lies in the nature and time schedule of innovations. Companies that choose their innovative defensive strategy obviously do not have that ambition at all costs to be leaders in the market, but do not want to be on the tail of technological change.

Reasons for acceptance of defensive strategies are avoiding the big risks faced by first innovator.

Defensive innovative strategy generally lacks actual knowledge derived from fundamental research, as well as some exploration and development capacity. Past research has shown that the majority of industrial development research or defensive imitational and that the firm chooses mainly to improvements, modifications to existing products, processes and technical services. Such a strategy is typical for most markets and is closely associated with the diversification of production.

To avoid delay, defensive innovators should be able to quickly adjust, their products not only must-be at least as good as products of the early innovators, but also to have some technical advantages in the market differentiated by the same or a lower purchase price. This can be achieved only with adequate development of research.

Defensive strategy belongs to the option purchase of patents, which can be very useful. Protected by patents, the main source of license revenue for the offensively innovators, who at the same time protect the price level, necessary to compensation costs invested in research and product development or technology.

After buying the license, defensive innovators must distinguish significant material resources for the proper education and training of personnel and consumers. In addition, it must be to provide technical assistance and instructions, and they function as important for defensive as well as offensively innovators. Special attention defensive innovators dedicated to long-term planning of production, this commitment is also typical for the offensively innovators, which means that defensive innovators, as well as offensively, they employ a large number of researchers, engineers, technicians and other high-skill human resources with emphasis on the development orientation work in relation on offensively innovators who put emphasis on research work.

National environment, and especially scientific and technological policies and strategies of technological development at the country level, have a decisive influence in the selection of appropriation innovative strategies. Elements of scientific and technological development must be agreed upon with the potential of the country, available resources, historical experience and future development plans.

## **6. IMITATIONAL STRATEGY OF TECHNOLOGICAL DEVELOPMENT**

This strategy corresponds to those companies that have modest ambitions, and unable to maintain pace with offensively innovators. These companies choose to better follow the leader on the market, which launches a new technology in their industry, and is located on large geographic distances. Depending on the distance, enterprise decides to purchase licenses or know-how, but the central part of their strategy is based on the larger spread of technology, developing the necessary research and development activities and the inevitable education workers.

Entering the market requires companies to follow imitative strategy of technological development, it has a certain, usually the cost advantages of labor, lower investment costs, lower price of energy or raw materials in relation to innovative intense competition. Imitator has savings in expenditures for development research.

Production engineering and structural design are two functions that imitator should be strong, even when identical copies of products licensed. This is of extreme importance for imitates, who does not enjoy significant market protection and must be hold at a lower unit cost in order to achieve success in the market. All imitators

must be more efficient in the production process which is subordinate to the predominantly adaptive developmental work. In addition, service scientific and technical information in imitational companies must be sufficiently developed to enable selection of appropriate products and technologies that exist in the market. Also, the success of the enterprise imitates depends to a large extent and benefits of scientific instruments-technological political countries.

## **7. SATELLITE STRATEGY OF TECHNOLOGY DEVELOPMENT**

Dependent strategy basically means the acceptance of essential satellite or subordinator's role in relation to the technologically strong and leading enterprises. Companies that follow this strategy often, do not try to imitate the technological changes. They do it just in case any of your consumer needs. Basically, all large companies have a number of satellites around them, which they supply various products or services, especially in electronic, automotive industry and machine production.

Satellite companies are not engaged in the development of research and are usually sub-contractors. In this role, there are small businesses in capital-intensive industries. Dependent enterprises are in a large number of cases departments or branches of large firms, which in certain cases, contractors are responsible for reduction of fluctuations in the market.

Many studies indicate the existence of satellite companies, which earn a significant profit, thanks to low costs, specialized knowledge and experience, efficient management, etc.

## **8. TRADITIONAL STRATEGY OF TECHNOLOGY DEVELOPMENT**

The nature and character of the product which express the slow changes, determine a certain aspect of the traditional strategy, as opposed to dependent enterprises that can quickly change the product. With traditional businesses to revise the product is usually motivated by the request of market. This is to some extent, and the advantage of traditional enterprises, because their product does not depend on the behavior of competitors, but rather depends solely of the consumer.

Regarding research and development capacity, traditional and dependent companies do not have them, with what the traditional companies can, through the new creative solutions to improve your product, but these creations mostly aesthetic nature. Technological project, a traditional product from losing its traditional recognition, and any fashion-aesthetic redesign of products can bring certain favorable effects on the market.

In this lies the advantage of traditional products of other industrial products.

The downside of traditional products is insufficient acceptance of products, due to lack of tradition. Enterprises that have recognized a quality product, following the traditional strategy of technological development and can work successfully at a sharp competitive conditions, which are approaching the model of "perfect" competition, or in conditions of local monopolies.

## **9. OPPORTUNITY STRATEGY OF TECHNOLOGY DEVELOPMENT**

Largely represented "opportunity" or a strategy of "refuge", is reflected in the fact that companies which are followed regardless of changes in the market, succeed to find the products and services that consumers are looking for, and no one else is available in quantities required by the market. Such a market requires a shelter to be persistently defended and preserved, regardless of the present, temporary difficulties, and the products and services are not qualified research and development, even when referring to technology intensive branches of industry.

At the end of these considerations about the different types of innovation strategies that can be followed by enterprises in accordance with the resources at their disposal, it can be said that the significant characteristic of industrial development during the twentieth century was the growth of research-intensive industry, the result of long-term adaptive responses of enterprises to the pressures of domestic and foreign competitors in order to preserve or improve its market position. The market mechanism has made differentials to different strategies for technological development of enterprises.

The current era of technological revolution has far-reaching impact on the entire human society, technological innovative changes taking place at high speed and most likely that there is no area of human activity that is not the major or minor influence of these changes. Existing technology to fully developed while the emergence of new innovative technologies with multiple major resources, especially in the technical science, chemistry and electronics.

New changes alter the economic sphere of society by changing the strategic position of companies in the environment. New technologies create new markets, new products and thus new ways of creating competitive advantage. This is especially prominent in areas of high technology, and less technologically intensive fields have not been spared of the influence of these changes.

From the standpoint of usefulness when it comes to issues of major technological changes, it is very difficult to predict the benefits that will have potential buyers, and only enterprise-innovator. For these reasons, very important marketing research after the appearance of the product on the market based on new technologies and adapts the same results of marketing research. In other words, no matter how the new technology perfected itself a product to market is to certify that a new product or accept or reject or required additional technological solutions.

Research shows that companies with quality products and market participation are charged a significantly higher rate of profit of enterprises with low quality and low market participation. Positioning of companies in the market is actually a parameter measuring the success of any innovation.

The application of technological change requires an adequate strategic approach - looking to the technological changes affect the strategic position of companies on the market. Strategic approach is of extreme importance, because it needs an adequate response to take advantage of technological change and be even better than the competition. This implies an obligation to the company should be the appropriate strategic oriented decision making in order to create advantages in relation to competition.

## 10. CONCLUSION

Enterprises operate and develop as part of the technological opportunities that result from the development of science, technology and markets. Such a development is exogenous and independent of individual enterprises, mainly because it continues even when individual companies cease to exist.

In order for a company survive and continue to be developed, it must understand the necessity of innovation and innovation that is historically conditioned.

Development and survival of companies depend on the ability of adaptation and adjustment of foreign environment, as well as existing opportunities that can affect certain changes in the environment in the desired direction. Technological changes are an important aspect in most industries, so that traditional economic theories that are based on understanding the market as a single enterprise environment must necessarily be changed.

Despite existing limitations, companies are at your disposal a range of alternative strategies. For example, it can make use of available resources and scientific and technological potential in different combinations, short term or long-term character. The companies have the ability to associate, to buy licenses to engage in market and technological predictions, or try their own innovation of products and processes. Also, can modificatory existing achievements in science and technology in some elements, depending on its innovative potential, aware always present the risk that is very difficult to predict the outcome of their research efforts, as well as the efforts of its competitors.

A company that does not innovate can be difficult to survive; lose reached their participation in the market, because it will expel its competitors with new products or standard products that are much cheaper, thanks to the application of innovative technologies. Most companies do not promote technological measures that do not want to constantly introduce innovations.

Existing strategy of technological development give enterprises the ability to not have to apply only one of them, but that they can combine or replace the other depending on the business results.

The current era of technological revolution has far-reaching impact on the entire human society, technological innovative changes taking place at high speed, and most probably that there is no area of human activity that is not the major or minor influence of these changes.

New technologies create new markets, new products, and thus new ways of creating competitive advantage.

From the standpoint of usefulness, when it comes to issues of major technological changes, it is difficult to predict the benefits that will have potential customers, and our business innovator that no matter how the new technology perfected itself a product, the market is to certify that the new product, receives, rejected or new technological solutions.

Positioning of companies in the market is actually a parameter measuring the success of any innovation. The mere application of technological change requires an adequate strategic approach, consideration of how the technological changes affect the strategic position of companies on the market.

Strategic approach is of extreme importance, because it wants an adequate response, how to utilize technological change and be even better than the competition. This also implies that the company must be that there is appropriate strategic oriented decision making in order to create advantages in comparison to competitors.



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## **FINANCIAL METHODS OF ASSESSMENT IN DETERMINING THE VALUE OF THE ASSETS AND CAPITAL**

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**Summary:** *Valuation of assets and capital of legal persons (companies, etc.) is one of the most complex and most responsible jobs that the teams of experts (experts) from various professions have a special role of financial experts, mainly court sorcerer and auditors. Task of team of experts is to give more accurate assessment of how the company is worth. Assessment is done in order to come to information about the condition and progress of the company. They are necessary in connection with new investments, changing ownership, the financial position of enterprises, and in cases of major changes. Assessment depends on many factors, among which stand out the functioning of markets, the choice of methods of evaluation and the ability of observers. Special emphasis is given to assessment methods in the world and here.*

**Keywords:** *Book value of the substance, the substance of property value, value, method of mean value, Stuttgart methods, method of extra profit, multiplication method, available financial flow, net cash flow, Method KKV, Method DNT, method LV.*

### **1. EVALUATION METHODS IN THE INTERNATIONAL LITERATURE AND PRACTICE**

Methods provide estimates of the enterprise's value as a result of estimated value of own capital. There are many methods of estimating, but are generally grouped into: methods of evaluation of substances, profitable methods and other methods of evaluation methods of the substance (the value of own capital) base in the Balance Sheet. Substance can be determined as: book value, corrected book value and property value. Determine the book value of own capital is done on the basis of balance made in accordance with the law and international accounting standards.

Book value of the substance shall be determined in the following way:

1. Business assets
2. Loss expressed in the assets
3. Long-term liabilities
4. Short-term obligations
5. Long-term provisions
6. Passive time between

**Book value of substance = 1 - 2 - 3 - 4 - 5 - 6**

The essence of this method is to examine whether all the balance position estimated in accordance with the regulations and standards. If you find a balance position in which it is not done, the assessor estimates the positions and then creates corrected balance. This is done by and for the assets and liabilities arise three pairs of columns in the first column, enters the amount of balance position by official reorganized balance accounting for assessing the value of the substance, the second column, writes the corrected amount of balance position in accordance with the regulations, and if a position correction is not any, enters the amount from the first column, and the third column represents the difference between the amount reported in the second position in the first column, where the difference can be positive (in the third column are indicated with plus) and negative (in the third column are indicated with a minus). At the end of the determined sum of second and third columns, where the sum of the second column gives the updated and liabilities, a sum of third column gives the net amount of adjustments of assets and liabilities.

Property value of the substance is based on the balance of property. Property balance is expressed in the full amount of property, to be achieved by assessing the financial position of the prices on the day of assessment. This balancing is excluded latent reserves, or hidden forms of financing. For each tool: intangible investments, land, buildings, equipment, several plantations, livestock unit, material resources in the preparation, supplies, materials, spare parts, fine inventory, commercial goods, unfinished production, finished products, monetary reserves, liabilities, long-term provisions and the time between the need to determine the price and value all the balance position. Once completed the assessment made the balance of property values and determines the difference for each balance position in relation to book value.

Property value of the substance or its own capital shall be determined as follows:

1. Property value of business assets
2. Loss expressed in the assets
3. Property value of long-term provisions
4. Property value of long-term liabilities
5. Property value of short-term liabilities
6. Property value between the passive time span.

**Property value substance = 1 - 2 - 3 - 4 - 5 - 6**

Yield method based on the expected result that depends on the amount of results and the amount of the price of the capital. Depending on whether the value of own capitals estimated capitalization of expected profit or discounting the present value of profit or pure cash flow, are different: static and dynamic methods

Application of static methods in assessing the value of companies includes two variables - **the amount of stabilization gains and the amount of the price of the capital.**

Stabilizing gain is one that can be assumed with a high degree of probability that will be achieved in the coming period. Stabilizing gain can determine on the basis of: adjustments of the profit, projections of expected profit and a combination of corrected of the profit and expected profit. Corrected gain is the result of adjustments of income and expenditures and can deviate up and down in relation to the gain expressed in the balance of success. With estimates of the enterprise's value on the basis of the profit, takes the annual profit for at least three, a maximum of five years. Given that there is a stabilizing gain, are correction of income and expenditure, so that the position of income and expenditure correct up and down in order to come up to the amount that will be repeated in a long time. Stabilizing gain can be express as gross profit and net profit. If the stabilizing gain takes the form of gross profit adjustment is completed. However, if taken in the form of net profit, continues to be adjustment in the field of determining the tax base. Updated on the tax base is calculated on the result of tax that is deducted from the gross profit and corrected comes to corrected net profit. The essence of the expected profit projections is that the assessor projected profit expected for several future years. Expected profit projection assumes knowledge of the possibilities of the enterprise from the standpoint of technical - technological, organizational and personnel aspects, as well as the dominant environment (inflation - etc.). Uncontrolled growth of loans significantly enhances mass inflation. Projection of the expected profit precedes analysis of factors that have influenced in the results in previous period. After that the assessment is made of earnings in the coming period. Considering that the future uncertain, the assessor projected profit usually expected in three variants: most likely, pessimistic and optimistic.

After determining the stabilization gains and the price of capital, value (V) is estimated by applying the formula of capitalization.

$$V = \frac{D}{\frac{k}{100}} \quad \text{where: } D = \text{stabilization gain} \quad k = \text{capital price}$$

In the literature, and practice, this method is called and the method of multiplication and then the formula for assessing the value of companies is:

$$V = D \cdot \frac{100}{k}$$

Applying the methods of capitalization, multiplication and it is estimated the value of own capital of the enterprises which serve as a starting point for negotiation of buyers and sellers. Of course, acquisitions of companies can be made by estimated values, but at a higher or lower than the estimated value, which is happening more often. When it comes to capitalization stabilized profit determined on the basis of realized profit corrected evaluation is based on stabilizing gains that can be determined in two ways: on the basis of arithmetic average corrected profit from previous years, on the basis of ponderable average of corrected profit from previous years. Stabilizing gain is determined on the basis of average arithmetic when the assessor came to the knowledge that the corrected gain in the previous years has not significantly oscillated and to not take in the coming years. When realized gain in the previous years significantly vibratory, stabilizing gain is determined on the basis of ponderable average realized profit corrected in previous years. Assessor is mandated to assess the likelihood of repetition of the conditions for the realization of gains from last year in the following years. When

it comes to Capitalization stabilization law combination of the profit and expected profit, stabilization gain is determined on the basis of the average from the previous year, profit from the previous year for which the assessor will assess the conditions to achieve profit from the most likely repeated and expected profit for next year.

Estimator projected expected gain in optimistic, pessimistic and probable variations. In this case, when there is a Capitalization stabilized expected profit, stable profit is determined on the basis of ponderable average, which is calculated by applying the following formula:

$$\text{Ponderable average expected gain} = \frac{a + 4m + b}{b}$$

where: a = pessimistic projections of expected profit, m = most likely projection of expected profit and b = optimistic projection of the expected profit

Value by applying dynamic methods is estimated on the basis of expected results and the price of the capital. The expected result can be express in the form of profit or in the form of net cash flow valuation of enterprise application based on the present value of expected profit making plan assumes balance of success for the time period for which the expected profit is projected. Planned balance of success is made on the basis of fixed price, and they are governing sales and purchase price on the day of assessment methods sold by effects. To ensure comparability in terms of inflation, it is necessary to balance the success of the official re-calculate the value of money on the day of assessment. Value based on the present value of expected gross profit is estimated discounting projected gross profit of the current value. Discount factor corresponds to the price of capital, which in itself contains a tax on the result. Gross profit from last year capitalizes and then reduced to present value as the expected permanent annuity. Due to business uncertainty estimator projected gross profit in pessimistic, probable and optimistic variations. For each variant determined present value of expected gross profit, and to value companies is the weighed average present value of expected gross profit.

Net cash flow is understood differently, and, according to international methodological guidelines recommended by economists Zappa "financial flow of the company" for each year calculated as follows:

<b>Available financial flow</b> = Net profit after taxation + Amortization – Increase in net working capital + Invested capital
--

When the estimated net assets directly, the cost of capital includes the tax on the result, and is pure cash flow quantified in the following way:

<b>Pure cash flow</b> = Gross profit + Amortization + Charged principal long-term financial placements – Repayment of principal long-term obligations – Outflow of by the replacement old principal assets
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Evaluation companies, based on the present value of expected cash flow, are done by pure cash flow discounts the present value, cash flow from last year as a permanent annuity calculation, which is a replacement for residual value, and is obtained by years gathered.

Other methods of estimating companies include some of the most popular methods used in international practice, such as:

- **Method of mean value,**
- **Stuttgart method**
- **Method of extra profit and**
- **Method of multiplication.**

**Method of mean value** is treated equally the importance of net asset value of assets (the substance) and the value of net assets estimated capitalization profit. The value of own capital is obtained by applying the following formula:

<b>Company value</b> = $\frac{S + NAK}{2}$
--

where: S = property without substance intangible investment nak = net active estimated by capitalization of profit

Stuttgart method is carried out to update the estimated property substance. The basic formula for assessing the value of the company is:

$$V = S + 5 \cdot (D - k \cdot V)$$

where: V = estimated value, S = property substance determined exclusion of nonmaterial investments, D = stable profit and k = rate of return on own capital

By sorting this formula is obtained:

$$V = \frac{S + 5D}{1 + 5 \cdot k}$$

**Method of extra profit** applied in companies that earn extra profit. Estimated value is determined by the formula:

$$\text{Estimated company value} = S + a_n (D - iS)$$

where: S = property value of net active (substances) with the exclusion of nonmaterial investments; D = stable gross or net profit;  $A_n$  = *discounted factor from IV financial tables*; i = rate of return on own capital.

Multiplication method is the application of a corporation whose shares are sold on the secondary market. Value determined by applying the formula:

$$\text{Company value} = \frac{P}{E} \cdot D$$

where: P = *Market value per share*,  
E = *Net profit per share and*  
D = *Number of shares sold*

## 2. EVALUATION METHODS OF CAPITAL HERE IN PROCESS OF PRIVATIZATION

Companies and other legal entities which prepare the privatization program evaluation established base value of total capital, or property, as well as lower and upper limit range of values of capital, or property. Our methodology for estimating the capital and is prescribed in the instructions on the application of methods for assessing the value of capital and assets ( "Sluzbeni Glasnik of RS, No. 45/2001, 57/2001, 45/2002) value of the capital the subject of privatization is estimated by applying methods updated book values,. KKV method. Value of the capital the subject of privatization and evaluates the implementation of the following methods: discounting cash flows, DNT method and the method of liquidation value, which is method of LV.

### Method KKV

In the development of estimating the total capital by KKV define the basic KKV and lower and upper limit and KKV. Primary KKV determined by the total assets reduced the amount of loss and the amount of total obligations (obligations, deferred revaluation gain, long-term provisions and time between the passive). Total assets, loss and total liabilities are established on the basis of the last annual accounts the subject of privatization. Subjects privatization determine the lower limit range of valuation by the capital value multiply coefficient of 0.5. Subjects privatization determine the upper limit range of share capital by the value of the capital coefficient multiply 1st If the Privatization Agency to assess the value of the capital deviates significantly from the value of capital that could be achieved on the market, the Agency can make assessing the value of capital by applying methods of DNT, and methods of LV.

### Method DNT

When creating estimates the total capital value method DNT define the basic DNT value and lower and upper limit value of DNT. It is projected the real cash flow after debt service and the estimated value of cash flow in the residual period. Cash flow projected for the period in which it is expected stabilized, which can not be less than five years. The value of cash flow in the residual period shall be determined by the stabilized net cash flow from last year projections multiply the coefficient with the expected growth of net cash flow in the residual period and share with the difference between the discount rate and expected growth rates of net cash flow in the

residual period. Present value of net cash flows from the period for which projections are made as well as the present value of net cash flow in the residual period established by the implementation of the selected discount rate. Discount rate is the cost of own capital the subject of privatization. Discount rate is calculated as the sum of the following three components: the real rate of return on investment without the risk, the risk premium on investment in the subject of privatization; premium for risk in investing in our country. Agency publishes the yield rate and premium. The total rate of investment risk in the subject of privatization shall be determined as the sum of individual rate risks are estimated for the following elements: the size of the subject, the quality of the organization, management and staff, financial position, product sales potential, the possibility of reliable prediction business. Individual elements can be generated to rate the risk of the most 5%, but the overall rate of investment risk in the subject of privatization can not be less than 5%. Basic DNT value equals to the sum of the current value of net cash flows from the period for which the projections were, enlarged for the present value of net cash flow in the residual period. DNT lower limit value of total capital shall be determined by increasing the discount rate to 5 percentage points. DNT upper limit value of total capital is determined by the reduction of discount rate of 5 percentage points.

#### **Method LV**

When creating estimates the total capital value of LV is determined by the basic liquidation value of total capital. Evaluation is carried out starting from the assumption of regular liquidation of the subject of privatization. Under regular liquidation means the termination of the subject of privatization and sale of his property by prices that are formed depending on the conditions in the market. The basic value of the total capital equal to the difference between the liquidation value of the assets the subject of privatization and the value of its liabilities increased for the regular costs of the liquidation. The liquidation value of property means the amount of money that could be achieved by selling individual pieces of property in the regular sale.

### **3. CONCLUSION**

Conclusions about the value of total capital the subject of privatization is the range between the lower and upper limit value of total capital. Conclusion about the total capital of the subject of privatization by method KKV is a range between the lower and upper limit value of total capital.

Lower limit range of the total capital value of the subject of privatization is the bottom border DNT value in the event that this is greater than or equal to the total value of primary liquid capital. Lower limit range of values of total capital is the primary subject of the privatization of the liquidation value of total capital in the event that the higher the lower border of the DNT values and less than the upper border DNT values. Lower limit range of the total capital value of the subject of privatization is a 80% basic total liquidation value of capital in the event that this is greater than or equal to the upper border DNT values.

Upper limit range of the total capital value of the subject of privatization is the upper limit value of DNT in the case that this is greater than the liquidation value of basic capital. Upper limit range of the total capital value of the subject of privatization is a 120% primary liquidation value of total capital in the event that this is greater than or equal to the upper border DNT values. If the call for public auction published in the period of more than 30 days from the date of assessment of valuation, or property,

Agency shall revaluation valuation, and property assessed in accordance with this ordinance. Revaluation is done from the date of assessment valuation, and property to the date of publication of a call for public auction. Revaluation is done by applying the monthly index of retail price growth in the Republic of Serbia, which is used for the current month growth index of retail prices for the previous month. Legal status of persons who made the change, in addition to estimating the total capital, are obliged to express his and the ownership structure. Ownership structure of capital shall be determined on the basis of: from the court registry, the central registry database; bookkeeping state; other relevant documentation. After the status changes made confluent the balance sheet of status change in accordance with the regulations governing compilation of accounting statements.

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## **APPLICATION OF NEW TECHNOLOGIES IN HUMAN RESOURCE MANAGEMENT**

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***Summary:** Important prerequisite of application of new technologies in the management are human resources and professional management. Although the new technology with the implementation of winning more conditions (the material) the human factor is decisive, in the same or similar business entities on the market in the activities you perform. Awareness of investment in human resources, in order to improve business efficiency, is prevailing in the modern market relations. In this paper attention is paid to the importance of human resources management in general and the problem of optimal performance, with an important note that the visible manifestations of crisis in the education of new generations of managers. The importance of human resources management is perceived, short review, in the context of certain types of management, to the importance of specific activities in the circumstances. The role of the manager of human resources and the action is connected with the managers of other specialties.*

***Keywords:** management, human resources, new technologies, management, manager, training, skills, market awareness, competitiveness, staff, employees*

### **1. IMPORTANCE OF HUMAN RESOURCE MANAGEMENT IN GENERAL AND THE PROBLEM OF OPTIMAL PERFORMANCE**

Important prerequisite of application of new technologies in the management is human resources and management. Facing the challenges of technological development and the market requires managers trained for fast adaptation of the work process and the functioning of economic entities to the changed conditions of business. It can be achieved by developing procedures, training new leaders to quickly prepare management employees to the new needs in the present competitiveness activities performed by economic entities. The willingness of managers and employees to respond to market changes is a prerequisite of success given the operationalization of development and work.

As management, as a form of professional engagement, means connecting the material and human factors in order to achieve optimal business results, the relatively limited material forms and achievements of the human resource is the factor that can bring the advantage of particular economic entity in the market game. Move the level of expertise and professionalism managers and employees is practically unlimited and the human capital included the potential advantage of a specific subject in the same or similar technological and material conditions of business. Awareness of investment importance in human resources is in order to improve business efficiency, prevailing in the modern market conditions. This setting directs the management of human resources, because the people, their needs, motivation, and pleasure become the center of attention to human resource management, as to understand that human capital is the main tool of competitive ability and advantages in the global market.

The realization of optimal use of resources should be a comprehensive economic entity to consider the need for employees of certain professions in the context of available personnel, to plan the reception of new executives (external strategy security personnel), reorganize current perpetrators, and to all by using the skills, personality, financial necessity and non material motivation to achieve maximum business results in the given conditions (internal development strategy of human resources). It is a significant investment in professional training and work involved the creation of conditions for needed experts. Human resources management in the realization of the mentioned relations and striving for efficiency optimization business requires competent managers, able to



quickly respond to events in the market, and most efficient way to manage and work organization achieve business goals. Optimal management of human resources requires a collectivity of manager performance to mobilize and stimulate employees to achieve maximum operating results in its own interest and the interests of collectivity in which the work.

In searching for theoretical and practical solutions to all present market demands more and more prevails that a rational economic organization according to subject people, but people adjust existing organization. Putting the center of economic events of people in relation to the technology caused the additional requirements in the expertise of managers who manage human resources. First is a sufficient education and its practical application, knowledge, and overcome their treatment skills with employees, the adoption of information and their transformation in the following activities, related to knowledge of the functioning of the market system, the organization of economic entity and its business, as well as knowledge of the psychology of competition and, in particular, own human resources.

Managers capable of decisive influence in bringing the necessary personnel with the labor market and expertise, as well as the retention of experts from its own human resources, different motivating factors, representing established the perceptivity for describing the economic entity for that work, as well as the perspective of each offender. Ensuring the necessary staff and the profession depends on the knowledge of managers about the offer on the labor market, the ability of forecasting market trends, from a detailed insight in their own human resources-employees as a source of needed staff and experts, the ability to establish contact and cooperation in the process of engagement necessary staff and profession. The role of the manager of human resources is "to connect management of human resources with corporate strategy", with managers of other specialties.

The process of inclusion of employees in management ("participatory management") is a phenomenon that has good and bad sides, from the standpoint of the interests of economic subjects. It is the added motivation, encourage initiative and creativity of employees, and possible manager limiting of human resources in certain emergency situations when you must come to express his competence and decision in his position.

Making notes on the importance of human resources management, its theoretical and practical concept, it is necessary to turn to some limiting factors that hamper the practical expression of the optimal management of human resources developments and their impact on the application of new technologies in the management and new technologies in general. Namely, the extensive study of IBM's ("Global study on the management of human resources") points to the present general concern for the training of future managers of human resources-"management staff. This phenomenon is multi conditioned. It is on the growth of new markets, as a result of accelerated technological progress, with some uncontrolled manifestations, which requires increasing the number of existing managers, on the one hand, the other side, on the withdrawal part of experienced managers (mainly due to retirement or leaving the management of other reasons) . Economic entities that just do not react to the appearance of good moves, primarily the development of new management personnel, will encounter with the serious business problems, without real opportunities to start teaching the strategy of economic growth. This problem is sharp and the problems that occur among the existing management personnel, and they, often, as reorganization of inadequate staff and the generation gap among the control, which negatively affects the organization of business and economic entity. Fluctuations present that staff have positive and negative consequences on the necessary organization of staff in the micro and macro environments.

In the above study emphasizes that the biggest concern for the training of future managers of human resources ("training of new leaders") in the area of Asia-Pacific region (88% of respondents), Latin America (74%), Europe, Middle East and Africa (74%), Japan (73%) and North America (69%).

As the resolution of training new manager of human resources multi condition problem, it is necessary to maximum involvement of commercial entities interested in its realization. One of the first steps in this process is a new investment in its resources and maintains a quality staff and their additional training, to attract managers with the labor force, their selection, in order to create prerequisites for the competitive management of this important economic resource. This process is preceded by assessment of the need for human resources in certain activities, for some period. As for Serbia should be pointed out that the code we made only a rough assessment of the need for human and material resources, which is insufficient basis for appropriate action in some areas.

## **2. INFLUENCE OF HUMAN RESOURCE MANAGEMENT ON THE APPLICATION OF NEW TECHNOLOGIES IN THE TYPES MANAGEMENT**

To the intensive application of new technologies in the management and application of new technologies in general, which are located in the cause-relations and interaction, it is necessary to manage human resources to bring the desired level, which can respond to market demands in relation to each area (marketing, health, insurance, information technology, finance, banking, etc.) which are required managers specializing in the area. Human resources management in general is that the pre concrete management of human resources in certain social and economic activities, where people manage to function and in a manner that determine specificity and

require individual activity. With the knowledge of human resources management profession specific manager should know the technology, process and organization of economic or non economy entity, where, in coactions with employees, we strive to achieve maximum business results.

Management is, in any case, the socio-professional activity in which creativity plays an important role and skills of managers, especially managers of human resources, where there are no practical limits of new forms of action caused by technological development and day-to-day changes and developments in the global and the local market and service, which is necessarily designed to react to new activities and measures, new ideas and concepts which checks are in the market place, in its non definition, eternally in motion. Management is, of course, skills, with the help of techniques and procedures, "useful knowledge that is applied in the process of planning, organization, management and control with the aim of achieving effectiveness and efficiency of organizations. To the application of new technologies in the management of all types of the possible need is a real base of human resources professional whose management it is possible to accomplish the task of permanent progress of human society. In order to achieve the task the role of human resources management in the application of new technologies in management we turn in certain circumstances, in that sense, in some social and economic activities.

## **2.1. Health care**

Management in health care is confronted with the need for improving the activities of implementation of the new technological achievements and the organization, which is a task for professional managers for the conduct of education and management processes using the new knowledge. The aim is to achieve a higher quality of work requires restructuring of medical institutions and health houses, which are nucleus of health care. Thus, for example, the actual implementation of capitation support in primary health care in Serbia, which is reflected in the reorganization of health homes based on the principle of the selected physicians, which, as a new way of financing, follow capitation. Practically, the initiative is to health homes that are good in providing preventive services and be rewarded for such performance of their duties. It is clear to what extent the good prevention in health care can affect the performance of other health and medical activities, as from the performance of further treatment, and from the standpoint of cost savings and other forms of rationality in health care. Here in the personnel management and organization of work they stimulate to raise the quality of the provision of health services.

The basic prerequisite for functional reorganization of health care is the transformation of health management, as well as the work of all employees in health care. Management is required to make important strategic decisions for the further reform of the health system, it's functioning and development of the adopted principles, in which employees in health care must have a complex role. Here they use to come to conclusion from the general part of this review about the necessity of "participatory management", self-government managers and employees, including those in certain segments of the reorganization of health care institutions in which work, particularly related to the profession, which is engaged in the entire system of providing health services in institutions.

## **2.2. Energy management**

Energy management includes, in the context of topics of our work, implementation and use of new technologies in the field of energy management processes and energy efficiency and renewable energy sources. The need for competent management and planning in the field of renewable and alternative energy sources all the actual, a question of alternative sources of energy culminated in the "gas crisis" made stopping gas from Russia, Ukraine, which led to the interruption of delivery, and our country and several countries of Europe. How important the issue of power often depends on the economic and political relations between countries, which are more or less influential in the field, it is necessary to consider long term solutions of alternative energy sources, in order to avoid exclusive dependence on individual sources that are in possession of several countries. This is the task of energy management that is able to competently manage and plan work energetic plants in the context of energy available.

Search for new technologies and alternative energy sources is intensive in its managers must actively participate in order to be able to organize new ways and methods of work. All these activities should be monitored constantly conscience about the importance of protection of human environment that requires a reconstruction of the existing plant and equipment.

Development of new technologies must be directed to the forms which saves energy whose stocks are, mostly, limited to the projects from "the field of energy efficiency. Energy management is an area in which the required application of new technology and "advanced techniques".

### **2.3. Information technology (IT Management)**

For the successful work of managers in the management of the various activities, in the way we have to determine in the above, it is necessary to the knowledge of information technology when it is not possible without seriously addressing any matters relating to the management and organization of collectivity and systems. With basic knowledge in the field of information technologies, which are acquired through regular training and work, there is a need for new skills, which involve significantly higher level of digital knowledge economy on the basis of modern information technology. In addition to this knowledge the manager must, in good measure, control and employees or participants specific business processes.

### **2.4. Financial and banking management**

Although the financial and banking management can be treated as types and subtypes of management, they can be considered as a separate species, due to certain specifics of the banking business.

Financial economic objectives and any other subject are the primary goals of performing his activities. It is a sensitive issue of performing the activity so that the financial manager must take the main role in the realization of financial needs and plans of the company, co-ordination and control of making business decisions of competent authorities. How is the segment of the economic entity, or other collectivity requires cooperation with managers of other business segments. The entire activity of these organizations focused on increasing the financial capabilities of enterprise, which is a prerequisite or a consequence of successful business.

Bank management is, generally, financial management, banking and insurance and includes the specifics of banking business.

### **2.5. TQM management (ISO 9000-ISO 9014)**

It is a managerial approach in the economic entity or other collectivity focus on quality, based on the participation of all employees or personnel involved, and the long-term success through customer satisfaction or customer service, in favor of the collectivity and the individual employee.

This role requires the management to ensure continuity of quality and uninterrupted in the right sense of the word, because any interruption often means losing a customer. It is a demanding concept of management, multidisciplinary in the forms of execution and those who search skill animations, in the right sense of the word.

### **2.6. Management of Public Administration**

Good governance and public administration organizations are a prerequisite for the success of its work, which significantly determines the performance and functioning of the state and quality of life of its population. Public administration must be able to operational efficiency and professionalism in carrying out the important contributes to the implementation of the program and acts of government. To public administration had crucial influence on the functioning of the state's management, in addition to fulfilling all the conditions for which we have highlighted the need to have managers managing human resources in general, need to master methods of public management, is thoroughly familiar with national administrative practice (in all its manifestations), with the European legislation in this area and with the European administrative standards. Only the qualified management will be able to carry out the reform and modernization of public administration.

## **3. CONCLUSION**

Appropriate management of human resources, is a prerequisite for application of new technologies in the management. Although the new technology with the implementation of winning more conditions (the material) the human factor is decisive in the same conditions of subjects in the market and the activities they perform. We have to move the level of expertise and professionalism of managers and employees practically unlimited and the human capital included the potential advantage of a specific subject in the same or similar technological and material conditions of business. Awareness of importance of investment in human resources is in order to improve business efficiency, prevailing in the modern market conditions. It is necessary and eliminate limiting factors that hamper the practical expression of the optimal management of human resources developments and their impact on the application of new technologies in the management and new technologies in general, we also pointed out in the elaboration of these topics.

It is a significant investment in further professional development work involved and the creation of conditions for needed experts. Human resources management in the realization of the mentioned relations and striving for efficiency optimization business requires competent managers, able to quickly respond to events in the market,

and most efficient way to manage and work organization achieve business goals. Optimal management of human resources requires a collectivity of manager performance to mobilize and stimulate employees to achieve maximum operating results in its own interest and the interests of collectivity in which the work.

In the context of application of new technologies in the management of the business managers are important issues related to modern technology and e-business: how to adopt new technologies and how new technology interest potential customers and partners, which are reasons for the introduction of new technologies and to evaluate the effects of realized introduction of new technologies in the collectivity for which the manager works, and how to create conditions for the conquest of new technological solutions in the management and maintain competitiveness in the market of ideas and their practical realization in the field.

To the application of new technologies in the management of all types of the possible need is a real base of human resources professional whose management it is possible to accomplish the task of permanent progress of human society, which is practically unbordered in responding to the needs of human ideas of time and degree of development of the human community

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## INFORMATION TECHNOLOGIES AS FACTOR OF IMPROVING OF MARKETING ACTIVITIES QUALITY

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**Summary:** *The twenty first century is the century of information, and actually, business success more and more depends on the having and using (usage) of relevant market information. Consequently, information technologies as a means to realize market activities successfully are becoming highly significant. Actually, an appropriate application of information technologies contribute to the improvement of business operating quality of the whole organisation.*

**Keywords:** *information technologies, marketing, Internet, integrated marketing communications*

### 1. INTRODUCTION

Unlike recent economic history, when comparative advantages based on natural resources dominated, today the situation is essentially different. Non-materialistic factors of business success – knowledge, technique, technology, human capital etc are becoming more and more significant. The core of most of the mentioned elements is basically *information*. Therefore, it is not difficult to anticipate the insisting of some theorists to mark the end of the twentieth century and the beginning of the new millennium as the period distinguished by *information revolution*.

One of the basic difference between a man and other living creatures is the capability of precise, clear and consistent communication. In time, by the applying of contemporary technical-technological achievements (printed media, radio, radio, TV), the opportunity for a mass one side communication has been ensured. However, in 90s, commercial usage of the Internet provides both mass and interactive communication of the people all around the Planet at extraordinary low costs. It is important to point out that global "network" would have not been established in the first place at all unless, previously, information, i.e. electronic technologies had been developed.

From the point of view of the theory of economic growth and development the technological progress through its contemporary forms (biotechnology, microelectronics etc.) effects dominantly the level of the results achieved by national economies. The factors of economic growth which do not mean the increase of capital or labour "stocks", are, in reference books, often referred to as a residual factor (or Solovljev residual – after a Nobel Prize winner who was the first to explain the effect of technological process on economic growth in an econometric way). About 50% of the rise of GNI (GNI – Gross National Income) of industrialized countries is the result of the factors having a residual character [1].

The impact of contemporary technologies on economic growth is also expressed in the domain of more specific levels of economic activities aggregation. Economic activity and living standard in cities and regions where high technology companies run their business are higher than in other parts of national economies. One of the best examples is certainly the area of "Silicon Valley" in California, USA. As the region where (geographically) are concentrated internationally competitive hi-tech companies, Silicon Valley represents a key of a successful economic growth and development, as well as a recognizable symbol of a strong industry and entrepreneurship spirit [2].

## 2. TERM DEFINING OF CATEGORIES

### 2.1. Information Technologies

Since it is relatively a new discipline, it is no wonder that there is a significant number, often heterogeneous, definitions of information technologies. In “**The Lexicon of Management**“ jointly the definition of the following term is quoted – information and communication technologies (*Information & Communication Technologies – ICT*). Also it is pointed out that the mentioned technologies “process information as the basic resource and specific features of information determine its basic character: invisibility of information applied, its complete heterogeneity, dependency on the whole and context, impossibility of usurping. They are becoming more and more important for a successful company running and are used to collect, process and transfer information. They include information hardware and software, applied information systems, business information systems, decision support systems,..., electronic communication systems etc“[3].

On the other hand, Keith Fletcher precisely provides the definition, but also an clarification of information technologies. Flacher states that information technologies have three basic parts:

1. computing,
2. microelectronics and
3. telecommunications.

The combination of the above mentioned components ensures a large number of products and services. Considering the extraordinary heterogeneous structure of the term, it is very difficult to give a precise definition. “According to one definition information technology is collecting, processing, keeping, presenting and transferring of information in its all forms. Information technology includes computers, information network, videotext, computer data bases and softwares as well as fax machines, mobile telephones, cable television and other forms of personal and mass communication“ [4].

In literature there are some *more specific definitions of information technologies*, so that the mentioned term refer only to computers or information systems. In that case a less specific term is introduced – **electronic technologies**. “Electronic business operating means the operating of business processes by applying of electronic technology. Electronic technology means a combined usage of *information technologies and telecommunications*“ [5] /emphasised by: **D.B.**/.

Taking into account the clarification of Keith Fletcher in this paper, the term information technologies will refer to the less specific version of the technology definition.

### 2.2. Marketing

In the core of marketing it is the satisfying of the needs and demands of buyers/customers. The first application of the fundamental marketing concepts lead back even to ancient Greece. However, theoretical establishing of marketing as a clearly determined scientific and practical discipline is related to the second half of XX century. Etymologically, marketing is an English word with an Anglo Saxon root -market (*market*). In the Serbian language it means a “term including all the features and measures taken by a company to give the best offer of goods“ [6]. Naturally, the mentioned marketing definition is “too specific“ and can be used only as etymological clarification.

Today the **defining of the term marketing** the most often includes two definitions [7]. American marketing Association (*American Marketing Association – AMA*) considers marketing as the “process of planning and executing conceptions, prices, promotions and distributions of ideas, goods and services so that the exchange satisfying the needs of an individual and organisations can be created“. British Chartered Institute of Marketing (*Chartered Institute of Marketing*) states that “Marketing is a managing process responsible for recognizing, forecasting and satisfying of the demands of consumers followed by profit making“.

## 3. INFORMATION TECHNOLOGIES AND MARKETING

In order to monitor the changes occurred due to direct application of information technologies **the concept of value information chain** has been developed. Relation value chain is made of five parts, which correspond to the elements of the less specific definition of information technologies. These are the following steps: *data collecting and transferring, data operating, data reading, models and decision support systems*. According to the mentioned concept, the basic information value is expressed through the larger income of future transactions and /or lower costs of given transactions.

“The Internet and other technologies effect traditional marketing in three ways. *Firstly*, they increase efficiency of already established marketing functions. *Secondly*, e-marketing technology transforms a lot of marketing strategies. *Finally*, information technology has changed the behaviour of consumers fundamentally by the

transferring of power from companies to those holding a mouse in their hands“ [8]. Information technologies are changing “4-P“ concept fundamentally (completely new products are introduced into the virtual world followed by new price forming methods, more contemporary models and methods of communication with customers are established...).

Some authors believe that the effect of information technology so big that it goes beyond the bordering lines of a new industry representing, actually, a new way of business operating. A kind of *informatics revolution is coming into force*. “Today everything can be changed into zeros and ones: pictures, sounds, voice, text and data. And everything can be reproduced...Digital technology has led to the development of the whole bunch of products: computers, interactive television, personal digital accessories, digital telephones...Technology has found its way to the simplest products...” [9].

### 3.1. New conditions in the surrounding

At the beginning of the new millennium some radical changes have occur in business surrounding. In the last decade of XX century it already could be concluded that the new calendar era will be recognized by the change in the consumer philosophy, and consequently in marketing. The surrounding has become more turbulent. Competition, so typical of capitalism slowly has made room for *hyper competition*, which reached the extensions no one could even dreamed of. Market struggle among those offering goods and/or services resulted in a different way of thinking of customers – who, actually, are becoming more and more *schizophrenic* in their demands. In these new circumstances (Hyper competition of companies and schizophrenia of customers) it became necessary to change the way of company business operating.

The marketing of 60s and 70s was slowly, but steadily going into economic history, since in the new millennium “there are products for satisfying almost all the needs. The needs of customers are, actually, more than satisfied: they are *hyper satisfied*. Certain limitations, however, have already started to show up on most of the developed markets referring to strategic marketing bases (segmentation, targeting or the choice of target group and positioning) as mechanisms of improving of competing advantages and its transferring into business opportunities and new products“ [9]. In developed market economies more and more attention is paid to “creative processes – lateral thinking and lateral marketing“, and not to “endless vertical market dividing“, as marketing guru Phillip Cotler points out.

The changing of the surrounding that companies run their business in certainly contributed to the increase of information technologies implementation. The world has become more complicated, the competition is “hotter“, and the demands of customers have been changing very fast. Marketing, which is actually established on the satisfying of customers' demands, taking the danger of competition into account, faces a big challenge. It is necessary to collect, process and interpret a large number of data, all with one particular aim, to make customers satisfied and becoming No 1 on the market leaving competitors behind. The only way out of the mentioned situation was the implementation of information technologies in marketing.

To apply the contemporary achievements of information technology, firstly it was necessary to develop hardware, software and telecommunication technologies. The first computers were made after the Second World War. In the beginning those were big computer machines having modest application possibilities. Three trends in computer development can be noticed: central computer, minicomputer and microcomputer. When **hardware** appeared, it was necessary to develop **software**. Marketing managers were having a dilemma at choosing of the programme that will be used in everyday specific marketing problems. Is it better to choose an *application software*, which has not been designed only for the solving of their specific marketing problems or a *software tailored to their needs* that they will order from a specialised company. As a rule, smaller companies choose the former option, while big enterprises prefer the latter one. The *Table 1* provide an insight into the advantages of both alternatives.

**Table 1:** Advantage of purchase of “final“ or “tailored“ software packet

“ Final application“ software packet	“ Tailored“ software packet
Cheaper	More efficient
No uncertainty of development	Better implementation into the system.
Suitable for smaller companies	Easier to adjust

For marketing communication is particularly significant, both *internal* (within a company) and *external* (between a company and customers, suppliers, financial institutions...). Hardware and software enabled keeping a large number of information items in data bases. However, it became necessary to connect computers to have an

efficient information exchange. To achieve this set goal, **telecommunication technologies** are developed. Today it cannot be imagined to operate business with no digital telephones, fax machines, optical fibers...

In order to have cheaper communication, **networks** are formed within a company (*intranets*), but also among independent enterprises (*extranets*). The most famous network connecting millions of individuals and companies is certainly **Internet**.

### 3.2. Internet – a new business surrounding

The appearance of Internet has led to the revolution in numerous fields of human activities. It could be called an “information highway”. “Internet represents a global network of all mutually connected computers and computer networks through Internet protocol – IP. This includes a large number of private and public computer networks which enable customers a fast and easy access to large quantities of information and active marketers a high quality channel and medium for research and action marketing presence...” [10]. Internet actually connects the whole planet through the network of servers which are mutually connected in different ways.

The forming of the “network of all networks” is related to the year of 1969 when the Ministry of Defense of the United States of America initiated the project of the forming of Agency network for advance research projects (*Advanced Research Project Agency Network – ARPANet*). The relational network is considered the advance network of Internet since it provided the option of decentralized information transfer among computer networks. During 80s the basic project concept is applied, apart from military purposes, for scientific research too. Universities all around the world are connecting so that they can exchange data and results of the research they performed. From the mid 90s of XX century Internet has become fully commercialised and globally popular.

For marketing managers it is essentially important to be familiar with the **basic characteristics of Internet as a medium**. It is an *electronically opened medium with no censorship* and the exchange of large quantities of information is possible. Since it is the “network of all networks”, Internet is considered a *global medium*. A particular advantage is the fact that Internet is a *multipurpose medium*. Its application can achieve a wide range (as other means of mass communication), but also focusing on target segments. Also, two important features of relational network are *interactivity* (two way communication of message sender and recipient) and *dynamics* (at minimal costs daily updating of textual, audio and video formats may be achieved.).

Numerous factors contributed to exponential rise of the number of Internet users:

- *a friendly software for Internet using* has been developed;
- *a universal network access* has been achieved all around the world;
- *access costs are being reduced* all the time so Internet is becoming available to a larger number of people;
- *quantity of useful information is being increased* on “global network”.

In **Serbia Internet** appeared in February 1996 when the national academic network was connected to Internet through BeoTelNet provider. In the same year the first domestic providers started to operate. “According to Telekom statistics, in Serbia almost 800,000 households has the access to Internet: 600,000 dial-up, 90,000 ADSL, 80,000 cable and 10,000 wireless. The estimation is that about 1,600,000 people has access to Internet” [11].

### 3.3. Marketing research through Internet

Marketing research have a long tradition. The first research of this kind, according to the literature available, were performed back at the beginning of the nineteenth century in USA. A large number of institutions and individuals tried to **define** this preliminary stage of marketing process. *American Marketing Association states that* “marketing research is systematic collecting, recording and analysing of data referring the issues regarding the marketing of goods and services“. The **subject of research** may be market opportunities, some particular instruments of marketing mix (product, price, promotion, distribution), marketing performances etc. The **process of marketing research**, in simple terms, includes five stages: 1) problem defining, 2) research plan developing, 3) data collecting, 4) data interpretation, 5) summerising of results and reporting.

“Internet is ideal for transferring information into a surrounding, but also for collecting information from the surrounding. In research sense Internet represent an irreplaceable resource of **secondary data and information**...” [10] /bolded by: **D.B./**. Enterprises choose secondary research through Internet to: *view the situation in a surrounding* (wishes/demands of consumers and/or customers, actions of competitors, measures taken by state administration...), *keep to be informed about the innovations in their range of activity*, *find new partners*... “The level accessibility and easily accessible data of secondary resources has significantly increased during the last several years, which is mainly the result of the appearance of computer networking of information mediators, whose data bases can provide detailed and updated facts about consumers and subscribers“ [4]. However, marketers have to pay attention while researching, particularly the secondary ones, because it is fact



that Internet is open and uncensored medium and it offers anyone to upload some information on the world network, even if it is incorrect and subjective.

We point out, that, lately, Internet has been used as **a means in the collecting of primary data** through *questionnaires and focus groups*. Marketers, while performing relational research have to take into account demographic characteristics of Internet members of a community (mostly this refers to educated populated which originate from developed countries). It is no wonder that the **role of Internet in market research is more and more significant**, since by the application of the mentioned medium *a far higher efficiency* is achieved, but also, *radically lower costs*, of the procedure itself compared to traditional methods.

### 3.4. Impact of information technology on promotion

“**The main role of a promotion** as a marketing instrument is to *inform potential customers and to develop affection, to move to action*, i.e. purchase of a product...Promotion can be used to *increase the frequency of purchase, to have an impact on various product usage, to strengthen convincing, to turn a disadvantage into an advantage, to break wrong attitudes and prejudices etc.*“ [10]. Obviously, promotion can “correct“ smaller mistakes on the market that technical staff can make while producing a product; but this marketing instrument can also “unhelp“ a high quality product unless marketing is created as a systematic and planned activity [12]. Promotion, itself, means certain **advantages and disadvantages** regarding other marketing instruments (Table 2).

**Table 2:** Survey of advantages and disadvantages of promotion

Advantages	Disadvantages
The most flexible marketing instrument	Often unavailable communication means
Effect of overflowing (regarding product, market and time)	Possibility of message misunderstanding due to tradition, culture symbols, literacy...
Easier adjustment to other instruments	High costs

All the mentioned distinctive features of promotion have to be taken into consideration at planning and performing of marketing campaign. It is the only way in which promotion can contribute to the realisation of strategic and tactical objectives of a company.

To achieve optimal results in promotional mix there are **three key factors**. Each of them contribute equally to the rise or, on the other hand, fall of a product quality in the eyes of customers.

- 1) **Auditorium** – is an important, very important, *target segment* we refer to. To communicate a message it is necessary to have the right comprehension of potential consumers. Due to this every marketing company starts from market research. It is necessary to know tradition, value system, way of decision making, culture... population we refer to. Primary and secondary data of that type are actually obtained through market research. Without them even the best quality company will not make any results because target group will not understand what is being told.
- 2) **Means of communicating** – is in cause – consequence relation to auditorium. *The choice of communication means* is directly effected by previously obtained data about auditorium. Depending on the level of auditorium aggregating, *several communication types* can be differentiated - specific, selective and mass communicating. Actually, information technology has made the biggest impact on the means of communication. It is not strange because “the term *information technologies* refer to collecting, processing and transferring of information, so it is not surprising that they are expected to make a strong impact on communicating process“ [4].
- 3) **Objectives and company's needs** – it is necessary to decide in the best interest of a company. We have to know, for instance, what costs a certain campaign will make, what results we can expect, how we can improve results... When all the data are collected it is necessary to make a positive decision referring a certain activity only if it is in the best interest of a company. As in life, there is no sense to act for the damage of your own.

The stated factors equally **contribute to a successful promotion**. At the same time they are the **factors of product quality improvement**. Unless viewed appropriately they can leave even the best quality product unknown to the majority of customers. On the other hand, a successful combining and synchronizing of the above mentioned factors can reduce negative consequences of certain product shortings or misacting on some element while mix marketing performing.

### 3.6. Integrated marketing communication through Internet

The changes in business surrounding, “in early 90s, when it was obvious that marketing communication has an essential impact on the development of relations with customers and making customers loyal, a new marketing concept was developed – integrated marketing communications” [13]. The mentioned conception occurs as a result of the tendency of companies offering goods and/or services to establish an interactive relation with a customer. “4-P” philosophy, mentioned at the beginning of this paper, is more and more replaced to “4-C” concept (*consumer needs, costs, convenience, communication*). Marketing and communicating are now considered two parallel processes which basically consists of the same elements.

The appearance of integrated marketing communications is related to the wishes of marketing activity executives to review and redesign traditional promotion mix. Actually, marketers wanted to coordinate all promotion instruments more effectively so that they could join them into a unique for of a company communicating with surrounding. In the core of the new concept is the intention is to “send a consistent message about a company and its products and service to various target groups by various communication forms and through various media” [13].

The appearance of **Internet** opened a new horizon regarding the opportunities available to companies. *Traditional communication paradigm* (based on one way communication achieved through the media of mass communication) is being replaced with *integrated (interactive) paradigm*. New philosophy of business operating enables a successful realisation of all three **functions of marketing communicating**: informing, reminding and persuading. “Global network” provides *interactive and multiway communication (many to many)* unlike classical mass media (TV, radio, newspapers). Internet, also, contributes to the *development of marketing relations with customers after “one to one model”* twenty four hours a day, seven days a week all twelve months a year.

Two **the most popular communicative Internet services** are:

1. **WWW** (World Wide Web) – this application “represent a software basis for the development of commercial contents on Internet”, since it is “a global structure which enables simultaneous usage of information and integrates informative contents and servers in a fast, cheap and unique way” [14]. Main advantages of Web sites forming are flexibility, low costs of designing and uploading on network, easy updating, interactivity...
2. **E-mail** (electronic mail) – relational application widely used. The expansion of “new mail” was largely contributed by the companies which operate on “network of all networks” by offering a free account opening

In short, future is in communication channels integration, and Internet is becoming an irreplaceable medium in all the aspects of promotional mix.

## 4. CONSLUSION

Our intention in this paper was to show the dialectic relation existing between information technologies, on one hand, and marketing, on the other hand. First, different information achievements found their application in the world of economy, since the results of informatics revolution significantly improved business operating of organisations where they were directly applied. Not long time ago marketing departments started to direct project assignments to computer experts to provide hardware and software for their companies so that their business process could be improved. In such a way a “magical informatics circle” was formed through which the experts in economics and technical profession try, on daily basis, to solve the problems an organisation faces. It is no wonder that informatics revolution left visible traces in the field of marketing. Today information is the most important resource and basic component of every marketing process. From day to day marketers try to communicate with potential customers and discover what they want. This exchange of information should result in a product and/or service which will satisfy customers and give necessary satisfaction. Products of information technologies provide an effective and efficient way to realise this assignment.

However, all business entities have to be aware that the application of new scientific-technological achievements is not the objective for itself, nor it itself will solve all the problems. Moreover, the usage of information technologies includes significant finances funds. Due to the reasons mentioned, top-management has to be cautious! Information technologies are not just “in” but a pure necessity. The principles of cost/benefit analysis appear to be the only objective criteria at final decision making referring information technologies as a factor of the improvement of marketing activity of a company.

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## **VISUAL IMAGE OF COMPANIES IN 21<sup>ST</sup> CENTURY**

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**Summary:** *This study elaborates the importance of visual identity of the companies in growth. The main elements of graphic design and visual identity are mentioned. It is explained how one should act when building a visual identity and company's image. One of the most important facts is: the job should be left to professionals. Still, there are situations when a client-designer relation simply cannot work. It can often be worse to have bad solution than no solution at all.*

**Key words:** *Visual identity, company, Logo and/or sign mark, Business card, Memo, Envelope, Vector graphic, Logo, Typography, Calligraphy, Pictography, Brand, ...*

### **1. INTRODUCTION**

Visual identity of the company is set of graphic display creating first impression with potential clients, investors and partners. It consists of the following elements:

- a) Logo and/or sign mark
- b) Business card
- c) Memo
- d) Envelope.

Depending on business branch, there are other useful elements:

- a) Bookmark
- b) CD-DVD
- c) File
- d) Case, etc.

Some of these elements are used by banks and insurance companies, as well as certain MLM companies. In the 21st century, it is known that even the slightest space should be used for advertising, which can only be beneficial.

According to the definition of the famous graphic designer F.H.K. Henrion, visual identity of the company is a set of overall concepts comprising visual presentation of the company. The objective of the visual identity is to draw clients' attention, but also to contribute to the recognition of the company. Message sent by visual identity should be in a form that is recognizable, legible and comprehensible, and should make the company stand out among the competitors. No matter what the main practice of the company or the quality degree of business is, the company cannot stand out among competitors without well-devised visual identity. It is of utter importance to consign devising of visual identity to the professional – graphic designer. Depending on the size of the company and the task itself, visual identity is designed by teams of professionals, creating a final version. It is quite obvious that visual identity of Coca-Cola Company is created by army of designers and marketing experts.

Identity design includes all visual elements, starting from choosing suitable colors used in identity creating. It is very significant that elements be legible and recognizable regardless of their size, position and color. One also should take black and white version into consideration, for some of the elements would be used for printing on lighters, etc.

It is common practice in developed countries to pay up to 10000 euros just for the logo. In Serbia, visual identity is not taken into consideration significantly. Only small number of companies actually hire the designer (or

design agency) in order to solve the visual identity issue. That task is usually performed by a member of personnel in the company or somebody's friend, relative, etc. There is an unwritten rule that in Serbia every person has all the required knowledge. That is the reason why most works are done by dilettantes who 'know certain someone'.

The objective of the visual identity is to make company recognizable. In variety of companies with the same work domain, it is necessary to emphasize the difference between them at first sight, and it is necessary that they have a recognizable style in order to build an image. Of course, visual identity may be good or bad and that is very significant because the company's visual identity is the starting point for all succeeding commercials, campaigns, operations and overall image. Good visual identity provides good results, promotes company productivity. If it is bad, the company will face problems trying to attract clients. If the company doesn't pay attention to its image, what are the chances for well-done work? Such a company seems unconcerned which is fatal to business.

Visual identity of the company is actually the result of the agreement between client and graphic designer. It is a combination of the image client has about himself and image that designer has about the client. One of the most important issues while creating visual identity is a target group. The visual identity of the magazine for teenagers would be completely different from the one created for car lovers. It is also the case with big companies. If the main domain of company's work is production and distribution of women's clothes, it will have stylish logo with simple colors. When the target group is properly specified, more than half of the work is successfully done.

Companies already successful in doing business need new visual identity from time to time. Having in mind that the company already possesses the image, recognition and reputation, usually the existing visual identity is improved – redesigned. In that way the company retains already acquired recognition. Important part of redesigning is to respect the disposition of the existing graphic elements, as well as to use the existing corporate colors. Sometimes it is more complicated to perform redesigning than to create brand new identity. In certain cases, it is very complicated to take all the elements into consideration with a successful identity as a final result. Companies that choose redesigning also face another issue – confirmation of redesign by clients and competitors. That is why it is important to carefully and professionally perform the redesigning, and the company should have trust in a choice of proposed solution. Therefore redesigning of visual identity costs more than a completely new solution.

Main principles of company's identity are the following:

- a) Name of the company – if the company is the new one, choosing the name is crucial because the name presents overall domain of work. The name must be in accordance with elements of marketing (advertising, sales promotions, public relations, etc.);
- b) Company trademark – graphic symbol must be in accordance with the elements such are: representative function, precision, attractiveness, simplicity, possibility of application, etc, including variations (positive – negative, size, etc);
- c) Company colors – depending on work domain of the company;
- d) Logo – represents stylized letters of company's name or its abbreviation; it usually stands for trademark, but can also be complementary to trademark;
- e) Typography – represents specific type of letters chosen from existing typographic models in process of creating the visual identity of the company;
- f) Preparation for printing of the documents – here we talk about space organization of a/m elements.

## 2. GOOD AND BAD VISUAL IDENTITY

Image speaks louder than thousand words. Good and bad visual identities shall be shown and comparatively commented in pictures.

- a) Logo and/or sign mark - On figures 1-4, logos are shown. They will be explained separately.



**Figure 1:** Impos Design – bad logo



**Figure 2:** Vertigo coffee bar – good logo

Figure 1 displays logo of Impos Design Company which represents typical example of visual contamination: too many colors (blue, white, red, yellow and green). Logo is bad because it does not represent anything, and also it

is not connected with some geometric figure. Bad try of making a logo in 3D version. The typography is illegible.

Figure 2 displays logo of the café Vertigo. This logo is clear, simple and monochromatic. It represents work domain of the company. Logo consists of a cup of coffee (sign) and name Vertigo, Latin name for stirring. If you look closely to the coffee arm, you can observe it represents the stirring which is the main step before coffee sipping.



**Figure 3:** Multi Task CS – bad logo



**Figure 4:** PINK boutique – good logo

Figure 3 shows logo of Multi Task Company. It is defined as a bad combination of colors (even 5 – red, white, black, blue and brown). It also consists of signs and names. However, the sign represents the building that is badly displayed. Combination of signs and names seems like drawing made by children's hands, and every company tends to be perceived seriously.

Figure 4 shows logo of Pink boutique. In accordance to client's wish, this logo represents a couple going to shopping together. The point is that customers of both sexes feel welcome in the boutique. Although represented by human figures, the logo is not complicated. It is not swarming with colors and is attractive enough.

#### a) Business card

Business card is not just a set of information on paper. It is now the aspect of advertisement, the way to remind a person about potential business partner or client. It plays a significant role in every businessman's life.

In developed countries, there are various opportunities to make business cards. In our country, they are of average size and not much effort is made in their printing. It is practically impossible to make a business card that is not rectangular in size or is without perforation, foil, plastic, etc. Sometimes one cannot find a place in Belgrade for making such business cards.



**Figure 5:** Examples of interesting business cards made in foreign countries

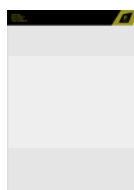
We mostly use the simplest business cards in our country. There are even business cards with photos of the owners, so these cards become a mixture of ID card and business card. twofold cards are rarely made because clients find it too much space for writing. Graphic designers do not often get clients' permission to be creative. That is why our graphic design is out-of-date compared to foreign brands.

#### c) Memo

Memo should consist of basic data about the company. If it has pretty design, it will make positive impression on the way company is doing business and it will earn more points with business partners.

There are no strict rules about memo colors. Sometimes even black and white memo gives suitable impression about the company. However, memo with colors are preferable, but without exaggerating in colors or data.

In left upper part there are the name and address of the company, phone number, etc. In right upper part there is a company logo. Physical separation of logo from text part provides great opportunity for logo to be remembered and recognized.



**Figure 6:** Example of simple memo

#### d) Envelope

Envelope is the final and the most superior stage of visual identity. It is not necessary to have a designed envelope, but it will certainly make end user distinguish it from the others and pay attention to the contents. However, envelope design must fulfill respective requests regarding post office service.



**Figure 7:** Envelope

Envelope should consist of company logo and basic information: company head office, phone number, fax number, etc. These data are usually put in the left upper corner of the envelope.

It is significant to have a space for post stamp on envelope. It is also advisable to make logo visible in order for people to recognize a company that sends the letter.

### **3. GRAPHIC DESIGN ELEMENTS**

As mentioned before, persons who are in charge for visual identity are graphic designers. Graphic design has its own definition as well as elements, such are the following:

1. Vector graphic
2. Logo
3. Typography
4. Calligraphy
5. Pictography.

William Addison Dwiggins first used the name of ‘graphic designer’ in 1922, and the name became widely accepted only after the Second World War.

There are a number of definitions of graphic design and all of the definitions have respective followers.

Graphic design is a design discipline dealing with making of printed solutions. In modern terms, graphic design implies also graphic elements adjusted to electronic media like Internet or television.

Another definition puts graphic design into type of applied art that also includes combining of typography, illustrations, photography and print in order to convey the message via visual communication.

Recently, graphic design involved new technologies like video records, film or multimedia. Although mostly two-dimensional, it does not exclude three-dimensional objects (package, industry design, design of exhibition area, even architecture).

Graphic designers make all of the solutions in vector programs (CorelDraw, Adobe Illustrator, etc.) because it is suitable for modifications.

#### **3.1. Vector graphic**

Vector graphic or geometrical modeling is a manner of displaying image by geometric figures like dots, lines, curves and polygons. In principle, vector shapes are much easier to remember than bitmap images. Also one of the important characteristics of vector shapes is their adjustability to various sizes, without losing quality. For that reason, they are suitable for printing. Almost every computer graphic displays nowadays transfer vector image into bitmap format. Bitmap image is saved in memory and contains data for individual pixel of each image. Term ‘vector graphic’ is mostly used in context of two-dimensional computer graphic. Almost every 3D display is made by 2D vector technique (with dots, lines and polygons).

#### **3.2. Logo**

Logo is the most important element of company’s visual identity. It is connected with brand making, for logo makes company recognizable. Logo is the basic graphic presentation of brand. The first impression is the most important and clients evaluate company having logo in mind. Due to many available media nowadays, logo should be easily transferred to stationery, video, clothes and other material for marketing. That is why logo must be imposing, nice, simple and recognizable. It must not resemble existing one, and especially not one of the



company that has similar or same work domain as the company creating visual identity. This can be viewed as company's incapacity to create recognizable style without copying. This situation could be fatal to business. As the main communication element, logo is placed on package, business cards, business papers, advertisements, catalogues, time schedules, billboards, brochures and it lasts as long as company does. There are many clothes trademarks founded in the 19<sup>th</sup> century and they still, with refreshments and modifications from time to time, use their original visual symbols: Mitsubishi was founded in 1870, Nestle in 1875, Coca Cola in 1887, Michelin in 1898, Shell in 1900. There is a long process of designing and tests behind these apparently simple solutions, such are Mercedes' three lines and circles. In most of the cases, these solutions are the most successful. Typography and visual symbol refer to important facts about the product using graphic language – color and shape. Consumer receives this information on an unconscious level and that is why each element and detail of the logo must be carefully devised. Logo represents strength, culture and identity of the company. Good logo is easily remembered, draws attention and is simple. On pictures below, you can see old and new logos of local and foreign companies.



**Figure 8:** Kodak logo – old and new



**Figure 9:** Xerox logo – old and new



**Figure 10:** NIS logo – old and new Picture



**Figure 11:** Zastava logo – old and new

### 3.3 Typography

Typography is the effectual element in graphic design, using letters in the purpose of art. Letters are combined with graphic elements and images, thus joining all elements into whole. Color and size of letters are much more important in graphic design than in text typography. Color is used for emotional effects in order to convey tone and nature of the subject. Term 'typography' originates from Greek words typo and graphia, meaning to tap and to write. Typography also originates from the first moulds used for seal making. In modern appliance, use and learning of typography is widely spread, including all aspects of designing, letter disposition; records and architectonic letters; posters and billboards; advertisements; business communication; logos, etc.

Up to digital era, typography has been a type of special profession. Digitalization has improved typography to such extent that now typography is easily used by new generation of designers and amateurs.

Pictures below display examples of typography applications in creating visual identity and company's brand.



**Figure 12:** Using typography to create a visual identity of a company and a company brand



There are visual identities whose main elements are tightly connected with typography. Font applied in logo may make company recognizable in the market.

Font is important factor of each brand. Appliance of respective font can distinguish company from competitors and make it recognizable and interesting. Standardized font appliance helps to visually connect different printed and electronic forms.

### 3.3.1 How to choose the right font?

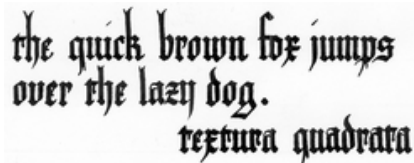
When designing visual identity of the company, one should avoid system fonts delivered with operative system or graphic programs. The reason for avoiding these fonts is their widespread use. They are characteristic for image creating of the company. You should use font that is imposing and diversified. If possible, it is recommended for company to create its own font. Thus, it will have recognizable font that others will not use due to copyright. It is rare in our country for company to have its own font. It is common thing in developed countries, although it is quite expensive to create it.

Font should have many styles. Roman (common one), italic and bold styles are usually not enough. Sooner or later the need for other styles arises.

Font that will be used in catalogues, labels and other printed material, should be supplement to visual identity. It is recommended to avoid modish fonts. Most of the fonts are related to certain graphic trend are not long-lasting. Visual identity is made to be long-lasting, so the font should not look out-of-date in few years.

### 3.4 Calligraphy

Term ‘calligraphy’ originates from Greek words kalos and graphia, meaning fine and to write. Calligraphy is the art of fine handwriting with pen, ink pot or other writing kit. Figure 13 shows an example of calligraphy lettering.



**Figure 13:** An example of calligraphy lettering

Although calligraphy lost much of its importance in Europe at the beginning of the new age, it is still recognizable as type of art, and a hobby. It is still applied in creating certain documents, posters or writing in books due to some special events.

### 3.5 Pictography

Term ‘pictography’ originates from Greek words pictus and graphia, meaning painted and to write. Pictography is a primitive type of lettering based on picture use. Pictograms are notifications developed from series of little pictures of people, animals, things, etc. Pictograms are read as symbols, and we use them in traffic (traffic signs), on airports, sports facilities, hotels, etc.



**Figure 14.:** Pictography example

## 4. BRANDING

Effective and consistent identity is a first step towards creating company and solid image. Business identity affects every business aspect and plays important role in overall experience client will have with the company. Internet pages, ads and other material play the role of solidifying business identity and allow clients to immediately identify with message of the company.

Good graphic design is very important for creating and developing of the brand, successful presentation of the company, its products and services. Qualitative brand is distinguished by recognizable identity, simple design and message remembered in the media. Design is simplified, adjusted to speedy life style.

## **4.1 Brand making**

Brand making is a long term process requiring certain investments. There is a possibility for every product to become a brand. It is necessary that it communicates with consumer in systematic, comprehensible and creative way. The first step is to create clearly defined brand strategy; team experts within professional agencies are in charge of that. In order to create successful brand strategy, it is necessary to make detailed analysis of market, products, needs and wishes of consumers, and perhaps the most important thing is to make good analysis of competitors. That kind of analysis provides knowledge about 'essence' of the product, which means differences between products compared to products in the same categories, but from competitors' companies. Brand strategy is then created depending on provided results.

## **4.2 Choosing name of the company**

There are certain parameters used for determining name of the company:

- Name may be personal (Mercedes);
- fabricated (Kodak, Xerox);
- an adjective (Duboka);
- a metaphor (Nike, Oracle) or the abbreviation (BMW).

Whichever name is chosen, it must be unique.

It is recommended to avoid names that resemble some other, more familiar names. Furthermore, the name should be easy to pronounce and remember.

You must take relation local-global into consideration when choosing the name. For example, if we have products specific for local area, it is good to keep local name, while in other cases products could be given foreign names. Sometimes the name of the company or product is understood as vulgar or inconvenient in different countries. 'Pionir' Company had that kind of problem in American market with Negro candies – that word is inappropriate for people of different race and it has nothing to do with nice chimney sweeper on the package.

Choosing a name is an important step; there are various techniques of testing the name.

## **5. VISUAL IDENTITY OF THE BRAND**

Nowadays average store has more than one thousand products on its shelves, mega stores even ten thousand and more. In order to distinguish the products, it must have a recognizable design. Visual presentation of the product is the logo and design of package and accompanying material.

### **5.1 Package**

Modern consumer does not have enough time to browse every shelf and that is why the package must be recognizable. It must differ from packages used by competitors, must be visually attractive, legible and without too much information, easy to carry, handle, and maybe even suitable for some other, subsequent use in the household. All of the elements of inner and outer package convey information about the product and affect the attitude and evaluation of the consumer – whether the product is healthy, exclusive, widespread, for younger or older population, etc. It is also the case with various companies. It is very important for package to be in accordance with business dealings of the company, employees, as well as to follow trends and not be outdated compared to competitors. It has become very difficult to gain and keep clients, so special care must be taken about each business aspect, especially about the first impression of the company.

### **5.2 Book of graphic standards**

The main aspect while making strategy work on visual identity is creating the rules of graphic standards providing detailed and overall instructions for implementation of visual identity elements of a product. Apart from detailed logo description, it also consists of detailed description of documents for business correspondence (memos, pack lists, invoices...), business cards, letters, files, instructions for web pages design, brochures, as well as promotion material in the sales area, shirts, bags, cups, etc. The rules of graphic standards specify rules of communication with consumers and business partners, and provide easy recognition of respective company or product.

## **6. AMATEUR DESIGNERS**

Only companies and products with recognizable and unique image succeed in attracting new clients and consumers. All available media are used for promoting commercials, campaigns, in order to solidify presence of companies and brands. There are billboards, posters, leaflets everywhere, reminding about companies and products. It is money well invested. No matter of available budget for promoting, by good brand planning, strong visual identity and choosing the right communication channels, most of the companies succeed in creating suitable brand image and thus provide success in the market. Nonetheless, it is not to be forgotten that recommendation of satisfied client is still the best advertisement.

Therefore it is very important that experts are engaged in creating visual identity and brand strategy. However, it is not always the case in our country. There is always a friend, a relative who will make business cards in few days, and if necessary, also memo or billboard in one hour time. That is out of the question in developed countries. Their common practice is to engage designers. That gives them advantage compared to our countries.

## **7. CONCLUSION**

In our country, clients are usually not aware of what they want, in what way they want to present the company, even the colors they would like to use in creating visual identity. They even want designers to copy some solutions they saw somewhere. That puts designers in problem because there is a copyright issue. Usually there is no cooperation between client and designer in these cases. On the other side, absence of specific parameters for determining market success of the design make our designers knowing the fact that income comes before esthetic experience, like in developed countries. Designers working abroad emphasize that designer is in charge for products he/she is designing or advertising, and that designer and client have the same objective, sale that is.

One of the major problems is that clients want to be designers themselves, while, on the other side, designers do not give up their ideas. Both designers and clients are dissatisfied in our country – designers with low prices of their work, and clients with thinking that each price is too high.

It is rather difficult to explain clients that visual identity must fulfill all market needs. It must be serviceable for all kinds of printed advertisements, as well as for advertising on the Internet. Also the gifts, such are time schedules, files, pens, lighters, are very important – they also represent advertisements. Therefore it is the best solution to engage experts for creating visual identity, for the image of the company should be duly construed from the very beginning.

In most of the cases, graphic designers must explain to other people the design work. All people know what is a lawyer, an economist or a manager, but graphic designer is still a new profession to them. That makes clients unconfident and they prefer visual identity to be done by amateurs they are familiar with.

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## **PRIMARY ASPECTS OF CREDITING AGROCULTURAL PRODUCTION**

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***Summary:** In order to realization of the development of agricultural production are required adequate investments. Managers in the field of agricultural production have an important role in the management of investments and provision of investment profitability. When evaluating the effectiveness of investments in agriculture, must be observed the specifics of investments in this sector. In the agricultural sector, it is necessary to credit the production based on the profits that should provide adequate and properly organized agricultural production.*

***Keywords:** managers, investment, agricultural production, effectiveness, credit*

### **1. INTRODUCTION**

Agriculture is an important economic sector of Serbia. Production characteristics of soil, climate and water resources Serbia have great potential in agricultural production, which unfortunately is not used. Agriculture can make a significant contribution to the economic development of the country only with adequate agricultural policy. Correlation between agriculture and its impact on other areas of the economy are of great importance for development because it directly or indirectly employs a large number of people, to participate in foreign trade, ensure public safety from the aspect of food, especially contributes to rural development and ecological balance. Necessary changes in this burden and slow down political reasons and the influence of interest groups and prespor process of strengthening democracy and open political system. The absence of clear vision in the agricultural sector is the agricultural policy opterečenu heritage from the socialist period without any major or structural changes. Agricultural land is largely in private ownership, which carries most of the agricultural production. Central planning of agricultural production planning neadkvatno the prestruktura in the market due to inadequate production of the social circumstances and unclear government strategy to commercially oriented agricultural producers.

The gross national income agriculture participate with close to 21% in exports to participate with 26% and employs about 10% of employees. The overall structure, the average agricultural farms in Serbia up to 3 ha (actually, 2.37 ha), a total of 778,891 producers only 5.5% processed over 10 ha. Agricultural sector in general is not able to join the market competition with the competition in the European Union. The process of opening to the markets of Europe and the rules of market economy allows declarative increase trade and liberalization of trade but in our trade in agricultural products is a greater pressure of competition in the domestic market and less opening new markets for our agricultural products.

Where agriculture is today is (and where is located the years) is completely contrary to that which is supposed to be, according to projektovanim development. General financial exhaustion and lack of working capital and investment funds, neorganizovanost, incoherence and usitnjenost economic agriculture, low productivity and competitiveness are the main determinants of our agriculture.

In many accumulated problems in particular stand out next which characterize our agriculture production:

a) inadequately defined market prices of agricultural products and concealing the actual costs and the value of the overflow potential profits to other branches

b) there is no market that you need to enable the increase and more efficient structure of the land. Lack of opportunities to land the state farms offer for sale or lease, the absence of long-term loans for the purchase of land and broader economic uncertainty in the long-term investment.

c) inadaptability banking sector in agricultural lending, lack of agricultural profitability, high level of risk, and inadequate implementation of legislation by which the land provides bond.

d) a low level of foreign investment due to slow and inefficient privatization in the Company for the production and processing of agricultural products.

e) a low level of production performance and low production.

f) there is no institutional framework for the adequate distribution of agricultural-food products necessary for the functioning of markets

d) the absence of adequate technical, organizational and personnel qualified emergency authorized institutions agricultural producers.

Development of agriculture involves incorporation of the traditional times to modern agriculture, and develop models of modern agricultural farms whose products will finally become competitive on the international market that are clearly defining strategic goals. At this time, in Serbia, there are no officially defined policy objectives which would be included in the Law on agriculture. The agricultural development strategy with clear objectives and the development of agricultural production with them to define the economic, social, political and environmental interests and to:

a) building a sustainable and efficient agricultural sector is efficient in the world market that allows the growth of national income

b) the production of quality food

c) providing an adequate level of support the standard of living of agricultural producers

d) insurance support sustainable development of villages

e) the preservation of the environment from the effects of the impact of agricultural production

f) preparation of agricultural production for proper integration of Serbia into the European Union

d) the creation of conditions for the domestic policy to support trade in agriculture in accordance with the rules of the World Trade Organization.

Rights, accurate, timely and inexpensive information helps subjects in the field of production agroindustrijske to undertake appropriate activities in the process of management, planning, design in ratarskoj, animal production, fruit growing and vineyards in the food industry. Helps resolve bottleneck in the reproduction units. Reduction currents flow of funds is an important prerequisite fast turnaround capital, a better use of resources is an important factor of faster development of agriculture in general. All of this is possible with a good management team and entrepreneurial way of thinking and behavior. Theme production in agriculture must be in accordance with economic principles of business work and earn, and not preživljavati or create losses.

Our common interest is the faster development of agriculture, providing food security of citizens, and the provision of competitive export of strategic and operational reserves. In addition, our joint interest is to improve economic conditions in agriculture (processing, agricultural science and education) and overflow the smaller part of new shares in other economic areas, or staying the majority of new value agricultural subjects available.

## **2. COURSE, STARTING POINT AND OBJECTIVES OF RESEARCH**

Subject of the research involves content, comprehensive and time dimensions of research. Contextual dimension to specify and I developed the content of research. Integrative dimension make concrete area in which research will be realized. Time dimension is precisely the period in which will be made concrete research.

Subject of the research are needs of the agricultural sector for loans. Agricultural sector are necessary short-term loans to cover the needs of financing of production to sales and billing product, medium-term loans for fixed assets, which should last several years and can not be financed from one production cycle and long-term loans for the purchase of land.

Currently, in Serbia there is not enough credit funds available for this sector. Financial sector provides very little credit assets and sell them, mainly through short-term loans. There are a small extent in the medium-term banking and credit, but the biggest part is before processing than primary production. There are no services for the rental of machinery, or there are long-term loans for the purchase of land.

Subject of the research is so far the lack of clearly defined objectives of agricultural development, as well as the methods and means for their realization (regional and BRANCH), slow and elemental process of production, ownership and organizational transformation of enterprises in primary agricultural production and food industry. Agriculture and selling its products is in the way of change.

They will include three main elements:

1. completion of transition from socialism to a full market economy,
2. integration and joining EU

### 3. radical reconstruction and modernization of the agricultural sector

Farmer must analyze your household, which has the potential of its land, machinery, buildings, livestock and people. Must take into account the capital which is available as well as the possibility to increase the use of credit. Furthermore, the analysis of the market, i.e. what consumers want to buy, how much they are willing to pay for it, the quality of what they seek?

Subject of the research are also activities related to the development strategy for agriculture that are in charge, first of all: the Ministry of Agriculture, Forestry and Water Management, Ministry of Finance, banks and the Government of the Republic of Serbia.

The aim of the research is identified in a defined research problem and determines the ultimate aim of the research, which is first reduced to striving to improve a specific investigation of human activity and consequently updates scientific knowledge about appeared research. The aim of the research in the field of agriculture is to increase the competitiveness of the agricultural sector in the domestic and world market through the application of important research that will increase the quality of agricultural products and the satisfaction of domestic spending, a main aim of the research is encouraged the process of transfer of knowledge from institutions in the agricultural farms for the needs of the farmers. Such a mechanism of transfer of knowledge, indirectly, will strengthen research and policy making process priorities applied research, and also will connect researchers and producers of food.

The main objectives are:

initiate and maintain research placed emphasis on the analytical approach and the research focused on solving the economic and production constraints of agricultural producers as opposed to the previous academic and produce targeted research to include agricultural producers in the process of defining the priorities of research and decision-making to introduce rational planning research projects with the aim of solving the problems of agricultural the manufacturer of the base that will generate research projects and to finance priority research to develop strong links between researchers, agricultural advisors and agricultural producers through which the transfer of technology and information relevant to agricultural producers better equip research institutions to the needs adjust farms and conducting research contractual ensure availability and continuity of research resources for the production of public goods useful to all agricultural farms encouraged and supported cooperation between the various research institutions in the implementation of applicable research.

The private sector in the Serbian agriculture is prevalent, but is insufficiently developed. Attention to economic policy, above all, financial support, and other forms of activities, should focus on strengthening the economic power of family farms. The key is the question for which a solution should be urgently found that:

How Balkan farmers transformed into a modern, productive type of West European producers (farmers), in the competitive range, quality and price of products on the world market?

A significant contribution to the transformation can be given to establish business cooperation with banks, farmers, trade, industry inputs, food industry, scientific and professional and educational institutions, etc.. This assumes a selection of; vital farms; with tradition, experience, juvenile labor, the spirit of enterprise and initiative, as well as their training and education for business in the market economy environment. It is necessary to create the conditions for gradually grows into in the modern food manufacturers by the model of Western farmers and agro-businessman.

Requires a transition wider environment: industry inputs needed agriculture. companies in internal and foreign trade, food and manufacturing industry, the banking system, state institutions, etc.. In addition, it is necessary for the development of market infrastructure, the establishment of the labor market, capital, land, goods, information, services, etc.. In short, the process of transformation of agriculture is not possible without transformation of the economy as a whole, and beyond. The general notion of transformation includes the changes in society, economy, politics, morality, culture, way of thinking, understanding, behavior, etc.

### 3. AGRICULTURAL POLICY-OBJECTIVES AND PRINCIPLES

Agricultural policy is a part of economic policy directed towards agriculture and rural development. Agriculture, as very sensitive economic sectors, there is a significant part of state aid in many countries of the world, in which the state intervene different measures to meet the goals of the policy, where the first profit target. In addition to direct payments, the subsidies that are paid per ha of land, liter of milk or throat cattle unit now, the intervention is implemented through the management of foreign trade policy, monetary and tax policy. It is in agricultural products, in relation to industrial products, faster and stronger reflect changes in the world market, price changes, changes in the costs of industry and trade. Due to the above is logical that, regardless of the world trend of liberalization of trade, agricultural policy and continue to have the task to protect domestic agricultural production. Agricultural policy is a process that is shaped and adapted to the demands of the economic environment - within the national community, and the influences that come from the world market. It is

necessary to know the trends of development and mechanisms of agricultural policy beyond the borders of Serbia, because it is no longer possible to make agrarian-political decision accepting only narrow local interests. Political changes made in 2000 and re-acceptance of the principle of free trade, agriculture occupies an important role in the economic and political decisions. On one hand, the domestic production by agricultural protects much of the developed West, and with the other terms of the home environment imposed limitation of domestic protection and adjustment agriculture market principles. This means that the modern agricultural policy - no matter if the word on pricing, incentives, customs protection measures or rural development can not leave to chance. Good management of agricultural policy is clearly observing the entire situation and the domestic and international market of agricultural products and identification consequences caused agrarian-political measures. On the political scene in Serbia today's political program of the most important political structures define the basic objectives of agricultural policy through:

#### **1. Strategy:**

- a) Development of cattle keeping, fruit growing and viticulture, agricultural-production of vegetables
- b) changes, modernization and standardization of processing industry
- c) The development of village and managing commodity farm - farm
- d) Raising the production of the higher technological level
- e) The preservation of the environment
- f) more quickly and efficiently turn on the science and education as support to agricultural production
- g) Structural changes (production, institutions, property), the market changes.

#### **2. Priorities are defined by:**

- a) Management of the market of agricultural products to the reduction of the influence of monopolies. Senior level business connections, well-organized professional associations of agricultural producers, increase land property, higher level of cash benefits scheme
- b) higher level of quality of life with the improvement of infrastructure in rural areas, with appropriate social policies, which will stop the migration of young people
- c) Promotion and support additional development program, which will increase employment and income from agriculture in the village
- d) Improvement of existing technology and the transfer of new production of agriculture. Well-designed export the final product with insured quality with the application of European and world standards.

#### **3. Restructuring of agricultural production is expected through:**

- a) Technology modernization of production capacity
- b) the strengthening of the role of agricultural producers in the market of agricultural products
- c) Budget incentives targeted commercial agricultural households
- d) Changes in agricultural structure and the structure of production technology
- e) to support the overall development of rural areas by improving the utility and social infrastructure.

**4. Participation and entry** in the European market is planned integration in the EU common agricultural policy with the market of 450 million people, and this goal will be achieved through:

- a) creation and functioning of a market economy
- b) the ability to survive competition
- c) Adjustments whole set of rules EU practice.
- d) the fulfillment of the criteria the European Union means:
- e) Faster reforms in agriculture
- f) adoption, harmonization, customization and implementation of the law in the field of agriculture
- d) adoption of regulations on competition set with the rules of the EU (acquis communautaire)
- h) Defining the rules of the gradual reduction of customs duties and other duties
- i) Establishment of efficient customs procedures.

#### **5. Approaching the European Union agriculture can be seen through:**

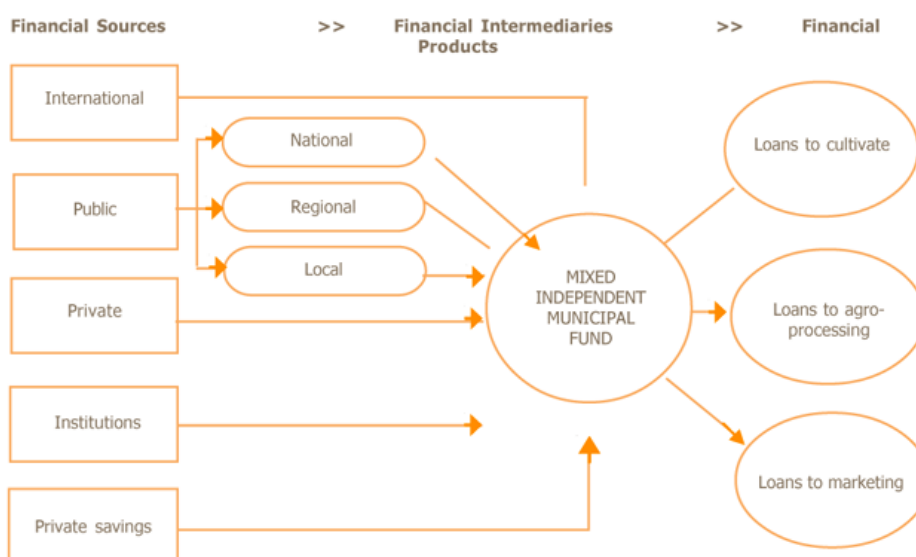
- a) startup standards of quality and safety of food products
- b) harmonization of veterinary and fito-sanitary system with the EU (higher exports to the EU)
- c) foundation for rural development institutions, which is in compliance with EU regulations
- d) Improving the quality of products
- e) Providing favorable loans scheme assets and agricultural sector
- f) Establishment of good counseling services.

#### 4. CREDIT AS A BANKING PRODUCT

Financing of agriculture is, and already several years back, attractive and acute question of Serbian agriculture. Almost all the problems and obstacles in the development of agriculture comes from a lack of funds and not the existence of a clear model of agriculture financing. Until 1994 The agriculture is funded by us from the primary issue. However, to leave the system and transition to the financing from the real source of the problem are all the more sharpened, caused the impossibility for agriculture to engage scarce and very expensive bank funds. When the specifics of the agricultural production, primarily: the seasonal character, a small ratio of trades of funds, low accumulation and small possibility of self-condition constant need for agricultural use permanent additional funding and to primarily in the form of loans.

Improper agricultural policy, especially credit and investment policy which has not recognized these needs of domestic farmers, with almost continuous recession in the economy and lack of financial markets and instruments, has led to falling investments in agro-technique, causing less yield and grow in all areas of agricultural production. It is still have negative consequences for the deterioration of productivity and the financial position of all types of agricultural subjects, and within the national domestic agriculture becomes powerless to the elections for competitive advantage and better export results in the international market.

Statistically speaking, although the last few years and increased participation of primary agriculture and the entire agro complex in creating the social structure of products in the country compared with the period from the beginning of 90's. This increase is not followed, and more investment so that the difference fell to the burden, first of all, available natural resources. On the other hand, investments in agriculture was almost never appropriate to its economic power. For example, in recent years the participation of agriculture in total gross national product range from 20 25% (participation agro complex 35 40%), while investment in agricultural production only 7% of the total investment in the economy of Serbia. Figure 1 shows the flow of credit scheme.



**Figure 1: Credit flow scheme**

For argument how important investment for domestic agriculture should not spend a lot of words. Since agriculture in Serbia a few years back is not going in step with the progress of agriculture of western European countries, even in the technical-technological, in terms of organizational, and so even in the overall productivity and efficiency, it is clear that the results of several years and a non investing huge difficulties in approaching the EU agriculture in Serbia.

Economic revival of agricultural production made with large investments in order to intensify production, which with its means greater investment in irrigation systems, modern machinery, infrastructure facilities, reconstruction cattle fund, many years now, and investment in other necessary inputs. At the same time any of these investments farmers can not be carried without a credit support. Financial exhaustion of agricultural producers in the individual sector is more than obvious. Elevation income of these producers lack the existence four member family, which witnesses and information about the high percentage of mixed farms and non agricultural (classification according to the sources of income) in the total number of farms in Serbia. 778,891 number of farms, only 18% or 138,738 is clean farms according to sources of income, and even 2 or 3 of the total number of farms belong to the category non agricultural farms, according to the same classification criteria.



In the spring sowing this year farmers are entered, also financially limited, due to outstanding debts to submit products from last year, and because of unpaid state subsidies last year, which are in the amount of about 1.7 billion dinars (about 20 million euros ) transferred to this year, based on a premium for milk, industrial plants on the basis of regress for the cattle and the measures to encourage exports. In addition, the application of VAT in agriculture has raised the price, and will not be compensate significantly higher prices of agricultural products this year.

Increase investment activities in the agriculture involves various activities such as:

- a) the acceleration of the privatization process,
- b) the acceleration of activities in the adoption of a comprehensive legislative-legal regulations, which regulate the financial markets and the establishment of appropriate institutions,
- c) encouraging the development of savings -credit cooperatives,
- d) the introduction of new options and forms of credit (leasing and etc..).

In order to fulfill the role of the most significant increase in investment should have a state and as a true strategic partner in agriculture and to note the creation of a stable political and economic environment for the total investment in the economy in the form of long-term security and stimulation of agricultural policy. In this regard, the Ministry of Agriculture since 2004. years trying to help build market loans from the budget, consider that all the specifics of agriculture and its need for external sources of funding. The attitude of the Ministry of Agriculture to the developed market of credit one of the most important conditions for successful agriculture is a significant step on the road to understanding and incentives for domestic agricultural producers.

In seeking to find ways of financing the agricultural environment, which encouraged the development of stable and continual development of agricultural activities, besides the indisputable need to develop stable agricultural production, primarily in farmers of natural persons, it is stimulating and other activities that provide productive and easy life in the village. 1z Therefore aim of this regulation is that activities that are aimed at the development of the village to provide support for the inclusion of interested farmers for engaging in professional agricultural activity.

In finding solutions to agricultural finance the Ministry of Agriculture usually offer short-term and long-term loans.

The development of credit markets will gradually go, in the meantime will be to build and credit history of each manufacturer, which means that the bank will recognize their good customers and will be able to offer better credit terms.

Short-term loans are granted only by physical persons farmers inscribed in the register of farms through the commercial banks that have a proper open a checking account.

Natural persons, farmers may be short-term loans approved under the following conditions:

- a) If you have with the land surface to 1 hectare, with up to 10,000 dinars.
- b) If you have the land area and up to 5 hectares. amount to 40,000 dinars.
- c) If you have the land area of over 5 hectares. amount to 80,000 dinars.

Short-term loans granted by the end users with a duration of return to 12 months and interest rate of 5.5% on an annual basis without a currency clause. Interest together with all the principal back by the end of maturity loans. Holder agricultural farms use their own bill as a means of providing for the return of loans.

Long-term loans are granted to all agricultural farms (natural and legal persons) inscribed in the index over the commercial banks.

Long-term loans will be granted for the following purposes:

- a) the construction and purchase of irrigation systems and equipment for irrigation,
- b) Buy agricultural machinery,
- c) Raising the many years now,
- d) Raising glass houses and plastic houses
- e) Credits livestock production

Long-term loans are granted to all agricultural farms to the next procedure. Commercial banks run investment program of its clients, with the obligation to provide the bank itself and its own 30% of the value of investments Fund for the Development of RS, whose Board of Directors, with security the prior written consent of the Ministry of Agriculture, but the final decision. Annuity (loan rate) is calculated and paid quarterly. During the delay repayment (grace period) calculated intercalary interest and attributed to the long. The value of investments accept only new investments, which are made from the moment of submission of required credits. Loans are granted under the following conditions: repayment period to 5 years with interest rate of 3% on an annual basis using the currency clause (determine the amount of debt in euros at the time of release of loans in the course and Calculating debt in dinars, the official exchange rate by the middle the National Bank of Serbia on the day of the calculation). Deferred maturity (grace period) is 12 months, except when the loans granted for the construction and purchase the system for irrigation, as well as equipment for irrigation, raising many years now, crediting livestock production, where delayed maturity (grace period) is 3 years .

Documentation required for approval of long-term agricultural loans:

- a) extract from the register farms BPG certification of agricultural farms
- b) Photocopy of identity card holder agricultural farms
- c) proof of the basis by which uses agricultural farms (proof of ownership, lease, agreement on giving the land to use. decisions of the competent authorities, etc.).
- d) Proof of an open account with commercial banks, in accordance with the Regulation on the registration of agricultural farms
- e) Confirm the Board of public revenues to the user credit has paid all tax liabilities due to the application for credit
- f) Business Plan for the demands of over 15,000 EUR
- d) List of assets securing the relevant documents of ownership and the assessment of market value of assets security

Request for bank credit includes the following information:

- a) address
- b) Contact
- c) household members
- d) property household
- e) type of field crops and area under the same
- f) and numerous types of state cattle Fund
- d) information on the income of household members and realized a total premium. subsidies, regression and other incentives for agricultural production paid farm outputs in the current year
- h) other incentive credits for development of agricultural production approved agricultural farm outputs and also limits their repayment
- i) Other liabilities (credits loans ...) of certain members of the household and the work experience of households in agriculture
- j) information about the project

Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia has introduced a means for encouraging the development of villages and to:

1. Improving production
2. Improving the racial composition of cattle
3. Purchase of livestock in the country (and home cattle, horses, sheep, goat, pig, poultry, bees, fish and unconventional forms animal production), the import of cattle, and machinery (tractors. Small tractors, combines, picker. Presses, lawnmower and other up machines) and equipment for agricultural, horticulturing and cattle production.
4. The construction or adaptation of buildings for accommodation and breeding of cattle (material and construction works carried out by the authorized construction companies).
5. Protection from erosion and wind protector busts (a forestation and backfilling erosion vulnerable areas.
6. Construction of support walls, embankments and other forms of protection from the negative effects of erosion and wind.
7. Improving Placement: facilities and equipment for the improvement of marketing (refrigerator car, kiln, warehouses, vacuum, packing, calibrators, etc.).
8. Certification of organic production (by authorized certification house).
9. Promotion and protection of local products (building brands recognizable brand with the marketing activities).
10. Rural Development and the promotion of activities in the village.
11. Activities related to the preservation of rural communities and promote economic, cultural. sociological, ordinary and other characteristics of the end of the village.
12. Improve the quality of life in the village (solving infrastructure problems: rural lighting, rural roads ....).
13. Diversification of rural activities providing alternative income for farmers (agro-eco-tourism, traditional rural craft production, processing)
14. Management of water resources (of solving the problems of water supply. The construction of sewer networks, tanks, rehabilitation water flows).
15. Education of the rural population.
16. Association and organization of the rural population to joint activities.
17. Activities aimed at protection of the environment.

For each investment for which the request is submitted is required: the dinar, which is their own participation in the listed investment as well as the dinar amount seeker credits expected from the Ministry of Agriculture, Forestry and Water Management, information about the production of which the branch of agricultural production contributed to the planned investments, description, production technology which would be invested (that kind. cultivars, race, method of planting density and rearing, in which the area in which the extent and what the results (yield) expect such as security of market, species the final product, a way of sales, potential

customers, the expected annual costs of production on which the request relates, the expected annual income in the production of which the request relates, the expected financial result.

## 5. CREDIT MARKET

Agricultural sector are needed:

1. Short term credits required for the financing of the agricultural production of primary production to sales and billing product
2. Medium-term loans for fixed assets that last for several years and financed from more production cycle
3. Long-term loans for the purchase of land and processing capacity

In the market of credit present financial sector provides very small loans to very restrictive conditions and where the loans are placed mostly in short-term loans. To that end, it is necessary to constitute a market of loans that will be available to all participants in the chain of production. There are, in a small extent and medium banking loans, but the biggest part is before processing than primary production. There are no services for the rental of machinery, or there are long-term loans for the purchase of land.

Other types of incentives through credit arrangements the state, either directly or indirectly, the Fund for the Development of the Republic of Serbia and Vojvodina Pokrajinski Fund, funds of local governments and a private fund. This funding is made with reduced interest rates. Ministry since 2004. The program began security short and medium farmers loans and legal persons with the aim to speed up the process in which the banking sector with manufacturers and to improve the production through the provision of cheap credit.

The fact is that only processors and input suppliers have access to credit lines, producers come in a very negative barter arrangements (via defined parity for inputs) with processors through the organizers of production, or directly with the organizers of production. Interest, which is paid at the end of the manufacturer, is a few dozen percent in the period from sowing to harvest. This system is unsustainable and extremely expensive for the producer. The best way to stop it is to enable producers to have access to short-term loans before sowing. States should in the sooner time eliminate causes that hold back development of credit markets and create the conditions to assume the role of the banking sector in the financing of agricultural production enabling access to credit everyone in the chain and to stop funding the only network processors and organizers of production.

The lack of commercial credit for agriculture can be attributed to:

- a) general lack of credit in the economy;
- b) the specific risk and low productivity that are related to agriculture;
- c) no available warrantee;
- d) relatively small height of lending that is required agricultural private sector and that is associated with relatively high fixed costs for the establishment and monitoring;
- e) the lack of credit history of the manufacturer;
- f) lack of expertise in the banking sector for the assessment of agricultural business plans and ignorance of basic characteristics of certain types of agricultural production;
- d) lack of experience and expertise with the producer for the development and presentation of business plans.

Increase in credit will depend on the number of political, legal and economic factors of development that will restore confidence in the investment, and from the aspect of the current world economic crisis is a special and significant problem. Agriculture is one sector and its share in total credit markets will depend on how the investment in agriculture profitable in comparison with investments in other economic sectors. Development policy, which has the aim of improving profitability of agriculture will ease access to credit. Lack of credit, in fact, only a symptom of other problems, not the problem itself.

The main goal is the creation of conditions for the commercial credit and financial sector said the needs of farmers for short-term, middle term and long-term loans.

One of the most important conditions that should overcome the problem of loan-security warrantee. The greatest number of farmers has land as an ideal tool for the bond. This is property that can not move easily destroy or otherwise destroyed. However, banks often do not agree to accept the land as a bond for the property can not prove due to outdated registration system. When the ownership of the land and proven in the bond, payment of loans, in the case of default, is long and expensive job that may take several years. An additional problem is the high price of registration rights to retain land-registration cargo, what is a high cost for small loans.

Security can be carried out and the burden on the machines that are purchased, but there is a problem of falling value of machines in the long periods of repayment. For short-term loans in the bond of goods through the "warehouse" is excellent and widely applicable bond. Warehouse as a credit guaranty document provides a simple operational system transfer ownership of the products but rarely accepted form of security for specific policy the National Bank of Serbia and its control functions placements of banks and their security. This kind of warrantee should be legal and institutional support to be accepted by the wider banks.

The change of attitude in the banking system and to achieve greater readiness to give credit requirements:

- a) establish a system of security-warranty that will not represent the brakes when the loan contract
- b) update the current record of registration of land and improve the administration to be held in the state updated
- c) reduce the fees for the registration of warranty, which should cover only administrative costs
- d) simplify the procedures so that court Integration loans can more quickly to get the value that is as bond.

### **The actual condition of the banking sector**

As a result of the lack of marketing of credit, banks do not have enough trained personnel, who would be able to carry out the assessment of creditworthiness and the quality of the business plan of the potential client-farmers. The current banking network is not well developed in order to satisfy the requirements of farmers, especially in the area of private farms. This is due to present the attitude that such loans farmers a great risk.

Very small number of farmers has expertise for the presentation of appropriate agricultural investment plans for loans with a lack of willingness of banks to create special sectors.

Medium-term loans and leasing for the purchase of machines are just one of the ways to safeguard the capital during the purchase. In the market of the developed is a variety of financial arrangements that should lead to the connection deliverer's machines and their users. One method is leasing that farmer is paid monthly or quarterly rental for the machine for a certain number of years, often with the right to buy the machine, if, at the end of this period is reduced value. The machine remains the property of land owner and can be back at any time in the event of default, without a court application. These transactions develop before the financial intermediaries, but suppliers have machines. Another method is to purchase the rate where the farmer is paid per month for the machine in a period of time and at the end of this period machine belongs to him. These jobs also perform specialized organizations. Both ways facilitate the problem of finding funds for the usually necessary procurement.

### **Micro-financial organizations-funds**

Financial groups are groups that are in other countries successfully secure resources in rural areas, where commercial banking has not yet found the right way. Financial groups provide credit for its members from funds that were created with the help of donors or commercial banks. When a member does not perform duties, the group takes collective responsibility. Control should be flexible, supervisory requirements lower a total costs than bank's.

### **Stimulating measures for the development of credit markets**

Banks and other financial institutions should be encouraged adoption and implementation of legal provisions that encourage diversification of their activities and creating conditions for safe operations. However, they should be aware of the fact that the transformation will not happen quickly. Probably the last activity of the banks engage in, is the provision of long-term loans agriculture.

States should not play a direct role in providing loans, subsidies or any other measures.

The provision of credit in the market. The involvement of the state is granting loans based on the Non-criteria, the reduction of the legitimate market for the commercial sector, and the reduction of state resources for the proper development of its function assistance. If the subsidized credit, as now, demand is greater than what could be guaranteed real costs, and promote investment in the less profitable companies. Interest rate is a rational mechanism that ensures that profitable investments available funds at the expense of less profitable. As a rule, the loan companies that are partly or fully owned by the state has resulted in the return of funds does not apply strictly.

Fund for the development of agriculture is a significant provider of credit. This source of credit should therefore be gradually abolished over a period of time. Fund should be closed in the period of several years so that would not approve new loans, but would be carried out rigorously late collecting payment and repayment of loans with arrived term. Instead of previous practice, the money should be channeled through agriculture commercial banking sector. Part of these funds could be fixed for a specific credit line for

strategic needs such as the purchase of agricultural machines, systems water supply and the like. This could become a revolving fund for that purpose. The Ministry has initiated this credit, which shows excellent results in the increase investment agricultural sector and the gradual opening of the banking sector to agriculture.

Providing loans should be implemented:

- a) withdrawal of the state from direct credit transactions;
- b) short-term to medium-term credit and credit lines for specific strategic needs that would be obtained through the sector commercial banks based on the credit funds which now controls the state;
- c) assessment to long-term loans that would be obtained through the sector commercial banks and on the basis of funds collected through the medium of bonds.

### **Reform of financial subsidies and benefits to agriculture**

The entire system of financial subsidies and benefits to agriculture (direct payments per hectare and throat cattle, pay-per-liter of milk, plants, etc.). It is necessary to rationalize, do it in practice easier and cheaper. Reform of subsidies and benefits should be to ensure:

- a) simplification and reduction of subsidies (grouping in the group),
- b) to achieve fairness separation of the non-commercial manufacturer and equal allocation of resources to users and groups,
- c) progressively and gradually introduce changes,
- d) security and stability in the amount of subsidies to farmers which will allow easier adoption of business decisions,
- e) easier control and the introduction of the register of agricultural farms, which should enable easier management of payments and control use of subsidies.

The main task of the new approach of encouraging participation in the agricultural production should enable the rapid changes in the structure of state intervention in agriculture within the agriculture and increase competitiveness in accordance with the significant integrating Serbian agriculture in world agricultural production, and ensure the stability of the profits of agricultural producers by significantly raising total subsidies in agriculture, but with the application of measures is one of the important goals of adjustment of domestic price with the average European prices. The aim of introducing the new approach would raise the standard of living of the rural population and enable the realization of profit in the agricultural households.

Financial subsidies and benefits, it is necessary to regulate for a longer period in order to enable the production of agricultural producers of the long run production plans and, in accordance with the team, and predicted future profit.

### **Business connection in agriculture**

Business connecting in agriculture is necessary to encourage and to professional, financial, media, because the manufacturers association in a variety of cooperatives and their networking at the regional and national levels.

It should be noted that almost all countries in the developed market economy, there are different types of cooperatives (cooperatives), which technological, economic, and marketing to promote agricultural production and operation of small farms. In the fragmented farms, as has our agriculture, business connectivity can significantly assist the farmers time to market, more favorable position to banks and capital market, and more.

## **6. CONCLUSION**

In the coming period will be necessary to increase investment in science and infrastructure, investment in human factors professionals and knowledge, particularly in the private possession. Investments in human expertise and scientific knowledge, or better said in the staff, the long-term and cost-effective investment. Professional services to work with farmers practically do not exist. In other words, work with farmers has been. In that time comes, it is necessary to reaffirm the work of advisory (professional) services.

The service would have the task to:

mediate and coordinate the relations between the manufacturers, production planning orientation of farmers, intervene in concluding post-purchase and sales, for example, gives tips about: the protection, meteorology, technical and technological knowledge, "intervene in the lease and purchase of land, mediate between producers and markets, banks and state. Advisory activity must orient towards commercial family farms and provide them market information, should organize programs in the form of daily rates for existing farmers.

In connection with this, we need a new way of thinking and work in the educational and research institutions, companies, associations and administration. In fact, it is necessary to create the appropriate economic and social conditions in rural areas and ensure their contribution to the economic growth of the country, i.e. the achievement of the basic tasks and goals in agriculture and to economic, political, social and environmental protection.

We need the economic sustainable and efficient agricultural sector, which can compete on the world market constantly contributing to the increase in national income.

Political aims to realize the agricultural sector to prepare for integration into the EU, means access to the European Union and access to the WTO.

Social goals are to meet the food needs of consumers in terms of quality and safety, ensure the support of standard of living for people who live from agriculture, and are not able to follow the development of its economic reforms.

Protection of the environment means that the natural environment protection of devastating influence the effects of agricultural production. To the participants in the production chain of agricultural production requires a lot of

effort, both by those in the primary, so the processors and distributors of agricultural products. You think of all forms of protection and possible pollutants, and to: water, land, food and other in agriculture.

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## **RESEARCH OF CUSTOMER BEHAVIOUR FOR STRATEGY IN SERBIAN GARMENT INDUSTRY**

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**Summary:** *The problem that exists in our garment industry is that we analyze and follow trends that have already taken place on the fashion scene so while a collection is being accepted and the preparation for production is getting completed a new fashion demand is here, and the old one hasn't got accustomed yet. Fashion companies that do not invest in the development of products and production technology get into danger and can't "keep place" with fashion trend although they try hard.*

**Key words:** *costumer behaviours, men's population, garment*

### **1. INTRODUCTION**

An important element for a consumer, his development, business policy and his bringing optimal solutions means market research. For all these activities it is not necessary to possess knowledge, experience and intuition but also a whole rang of information from a market. Market research serves to recognize needs, wishes and consumers' demands and so it ha an influence on planning and product development, selling, distribution and price forming. Market research is an activity directed towards learning all the facts important for bringing those decisions that would enable successful business from one side and successful satisfaction of needs and consumers' demands on the other side.

In fashion world are so many fashion agencies for fashion prognosis with directions for next seasons (spring-summer, autumn -winter). The prognosis in these agencies is on the different aspect of researching [1]:

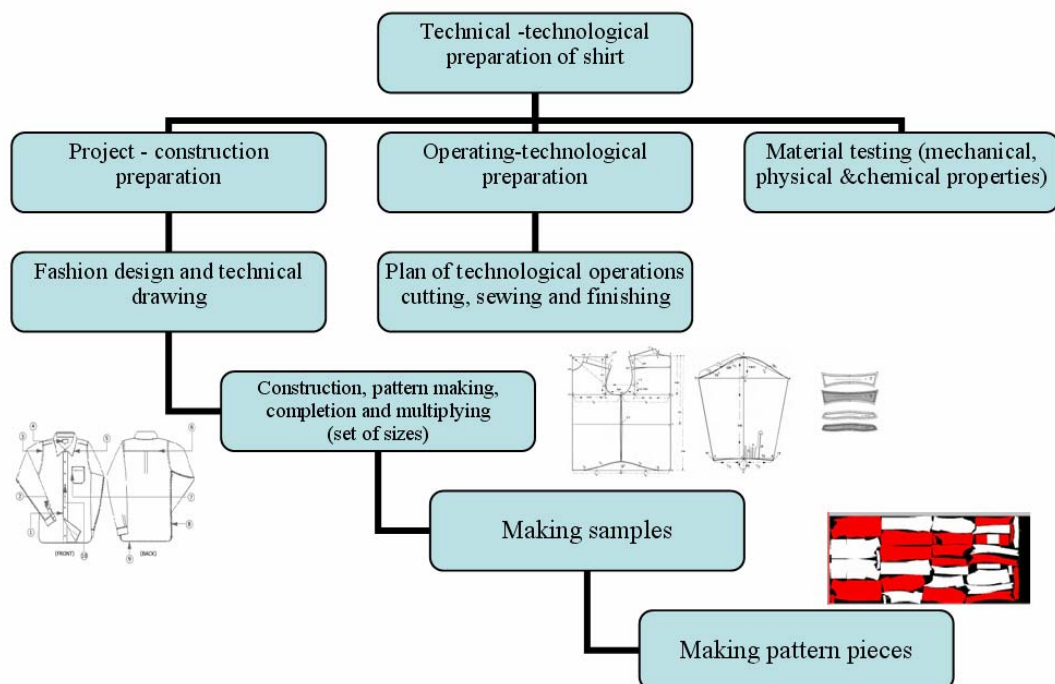
- ❖ researching designers about row of material, fashion trends and forms,
- ❖ researching and analysis of sociological and psychological influence on fashion trends, lines and colors,
- ❖ researching influence of music, painting, moves, cartoon, etc.
- ❖ media influence on costumer.

The concept of research must cover an interest for design, buyers and profit and to improve designer's creative process and by market research to get the very information about consumers' demands of their reactions to offered articles of clothing in odder to get the base for future business, determine aims and strategies. Therefore, in practice it is necessary to do research and explain all phenomenon and laws relation to contemporary production - market, in odder to get information that would show what kind of products should be created, so that it could be accepted by the market and a design being a creative discipline can make products with the very different characteristics consumers demand. The modern technical-technological preparations of manufacturing consider „voice of customer“ and use CAD/CAM technology, on figure 1.

Interest of the garment manufactures for fashion prognosis and analysis for design, costumers and profit is in the table 1.

**Table 1:** Concept of fashion marketing [1]

Interest for fashion	Height	Interest for costumers and profit	
		Low	Height
	Low	design	Fashion-marketing concept
		Breakdown	Orientated on marketing



**Figure 1:** Technical-technological preparation for production process with CAD/CAM

Fashion agencies for prognosis give necessary information's to designers, garment manufactures and fashion magazines.

For season autumn–winter 2009 "Carlin Presentation", "Designer Forum", "Promostyl", "Desinger Intelligence", "Delfo" and another agencies give us presentation in January 2007 on internet, on figure 2.

In our country garment manufactures and fashion designer don't have supports with fashion agencies. All information about fashion trends, colors, fabrics and fashion lines they discovery from case to case, from fashion magazines seminars and infrequently on trade fair and fashion show on site.

Assortment of colors and fabrics are often limited with:

- subjectivity of fashion designer,
- no-informing,
- prices of textile materials,
- request of poor market, etc.



**Figure 2.** Presentation fabrics, styles and fashion trends [2]

## 2. THE RESULTES RESEARCHING OF MARKET

To confirming needs for researching and analysis of domestic market for new fashion bring in practice researching in 2008 with questionnaire. We are checking 640 people – mans in Belgrade, all age and profession.

Questionnaire has 3 group of question:

- o Styles and preferences of costumers.
- o Following and accepting fashion trends.
- o Buying clothes.

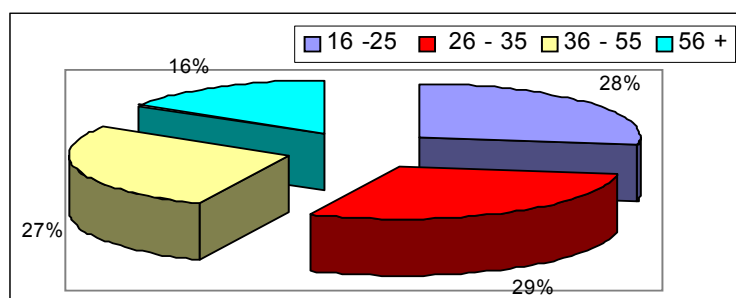


On the age of men's population we have segmentation of market – 4 age group, in the table 2.

**Table 2:** Segmentation

Group	Age group
I	16 – 25
II	26 – 35
III	36 – 55
IV	55 +

On figure 3 we have see, for all men's population dressing have large meaning (above 80% in the first three groups and approximately 16 % in IV group).



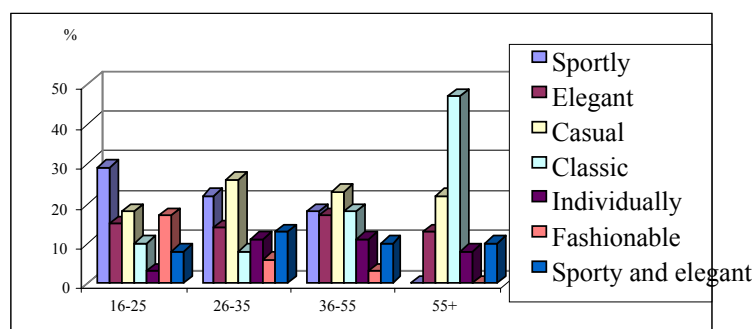
**Figure 3.** Meaning of dress

On the question "Why are you taking dress?" almost persons from II group are said because they enjoy (70%). The little % must dress, because they are the older men's (41%).

**Table 3:** Why are you take dress?

Dress because :	16-25	26-35	36-55	55+
Must	15	16	32	41
Enjoy	56	70	63	52
Distinguish yourself	29	14	5	7

Styles we are looking with aspect of costumer–fashion (figure 4).

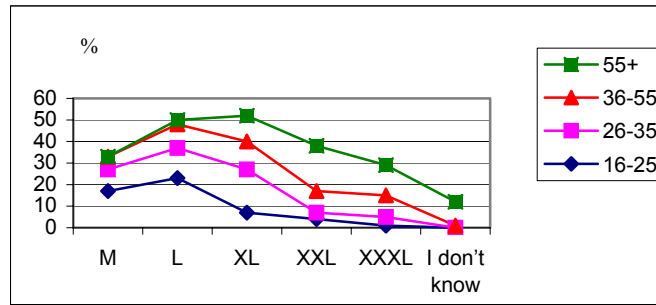


**Figure 4:** Fashion style

A large number of not standardized fashion products, not harmonized sizes and quality of production are danger for gaining an access to the world market. This problem can be solved by introducing the system of sizes according to SRPS ISO OR SRPS EN standard, on figure 5.

All groups inform about fashion constant or periodic, in the table 4.

Many mans don't have a fashion ideal, except the younger's, in the table 5.



**Figure 5:** What's your size?

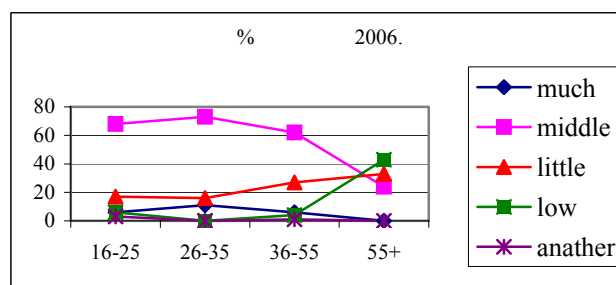
**Table 4:** Inform about fashion

How often you inform about fashion? (%)	Age			
	16-25	26-35	36-55	55+
Constant	37	37	30	15
Periodic	50	60	58	33
Infrequently	13	3	12	50
Never	-	-	-	2
Form where you inform about fashion? (%)	Age			
	16-25	26-35	36-55	55+
Magazine	33	32	35	22
Fashion show	10	15	8	4
TV	42	27	39	23
Advertisement	11	8	7	-
Street fashion	9	6	5	6
Public	9	2	2	5
Boutique	11	5	4	4
Fashion store	5	5	2	6

**Table 5:** Fashion ideal

Your fashion ideal is: (%)	Age			
	16-25	26-35	36-55	55+
Somebody in public	20	9	7	14
Somebody from TV-a	14	12	8	13
Fashion designer	8	9	6	-
Friend	18	12	10	8
Parent	4	1	3	-
Nobody	34	37	66	65

On the figure 6 are answers on the question "How much you accept fashion trend?". In this researching the younger's group accepting the fashion trends (70%).



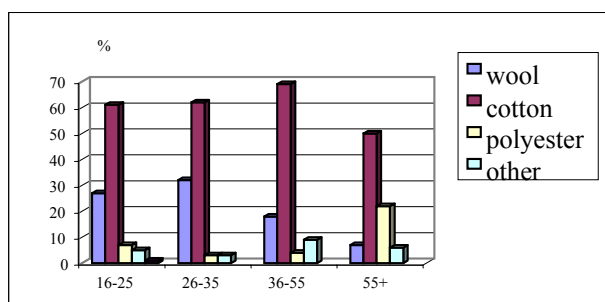
**Figure 6:** How much you accept fashion trend?

They are accepting the fashion trends because of the color, pattern and fashion detail, etc., table 6.

**Table 6:** Elements of your accept fashion trend

Your elements of accept fashion trend? (%)	Age			
	16-25	26-35	36-55	55+
Color	29	27	27	16
Quality	26	12	22	38
New fabric	10	13	6	11
Fashion detail	21	22	20	14
Pattern	14	26	25	31

All examinees like a natural fabric (cotton), on figure 7.

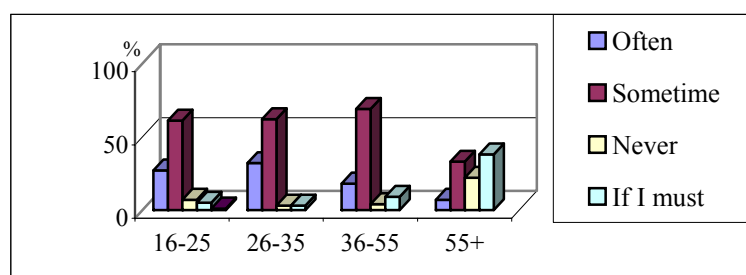
**Figure 7:** Your favourite fabric

Color, a like aesthetic quality is element for customer buying garment and accepting new fashion, in the table 7.

**Table 7:** Favourite color

Favourite color (%)	Age			
	16-25	26-35	36-55	55+
Black	29	27	27	16
Blue	26	12	22	38
Grey	10	13	6	11
White	21	22	20	14
Red	14	26	25	31

The almost buying cloths sometime or often, on figure 8.

**Figure 8:** How often you are buying garment?

For buying clothes motives are from needs to pleasure and for younger's population are want to have something what another don't have, but to be like another in generation, table 8. So, interesting is to a lot of mans themselves buying clothes and for just a little one women's buying (women's often buying men's and children garment).

In table 9 we can see what costumers looking for when they buying garment. On the first place is appearance (41%-28%), then quality (20%-34%) and price (13%–19%) for the older mans.

Shopping places are very deferent. The older mans buying ready-made clothes in stores, but younger's like a modern fashion rooms, in the table 10.

Very often a buying cloth not delivers expectation (approximately 75 %), in the table 11.

**Table 8:** Why are you buy garment

Why are you buying garment: (%)	Age			
	16-25	26-35	36-55	55+
I want to have something what another people don't have	33	25	18	8
I want to have something what another people have	14	11	3	3
Need	16	19	35	59
Pleasure	37	45	44	30
Who have influence on you when you buying garment? (%)				
Wife	-	25	13	25
Family	27	24	14	8
Friend	9	-	1	7
Seller	4	1	1	1
Nobody	41	50	69	75

**Table 9:** What are you looking for when you buying

	I group	II group	III group	IV group
Appearance	41	38	31	28
Trade mark/Brand	8	8	4	3
Fashion	20	16	9	6
Quality	24	21	34	20
Way of payment	1	2	5	6
Price	4	12	13	19

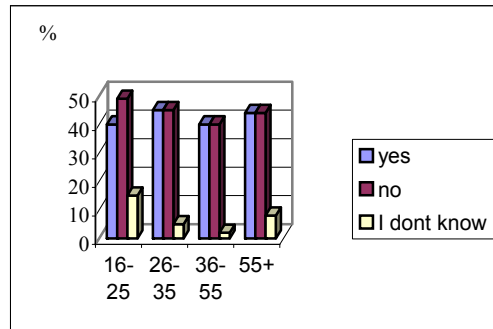
**Table 10:** Where are you buying

Where are you buying? (%)	Age			
	16-25	26-35	36-55	55+
In fashion store	3	12	27	30
In fashion rooms	49	50	22	9
In the street	18	14	14	10
Sale	11	8	7	16
In the all place	19	16	30	35

**Table 11:** New cloth

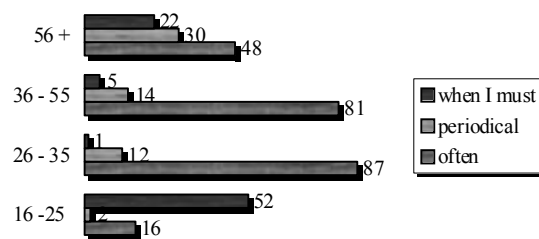
How often buying cloth not delivers your expectation? (%)	Age			
	16-25	26-35	36-55	55+
Constant	21	16	9	13
Periodic	71	79	85	53
Infrequently	6	5	4	25
Never	2	-	2	9
Often mistake on buying cloth? (%)				
Color is fail after a few washing	30	31	30	24
Cloth is changing appearance	26	25	19	29
Cloth is changing dimensions	22	25	32	22
"Breaking" seams on cloth	18	19	16	15

Examinees are not to be acquainted with consideration about label on garment. In Serbia we have new standard for size and label on garment (SRPS EN and SRPS ISO), but lot of production of garment not use new standard.



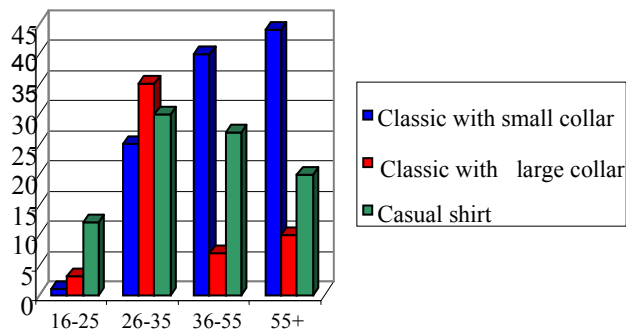
**Figure 9:** Do you believe in label on the garment?

The last years a men's like to dressing a casual wear (t-shirt, tracksuit, etc.), but classic and casual shirts is a basic part of a men's wear.

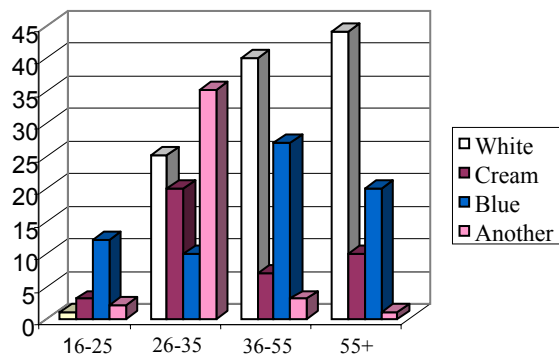


**Figure 10:** How often you buy a new shirt?

Except the basic colors (white, crème and blue) probationers from 26 to 35 years old like a shirts in another trends color, like green, pink, yellow, red, figure 12.



**Figure 11:** What is your favourite shirts?



**Figure 12:** Your favourite shirts color?

### 3. THE ANALYSIS OF RESULTES RESEARCHING

There are great problems in our garment industry in connection with the market survey, keeping up with competitors, investments in its own development, creating original designs and scientific approach to the introduction of new products to the market. Therefore the first step is the survey of consumers, learning the facts about the sale and the estimate of fashion trends. It is also necessary to establish size and consumers' purchasing power, how suitable the garments are for our market, to eliminate weaknesses in sale channels, distribution and promotional activities.

The costumer needs, desires and requests for clothes in Belgrade, in Serbia might identify on hoard data about accepting fashion trends and influence media. From statistic analysis date from questionnaire we conclusion:

- Growing interest for casual, modern and sporty-elegant fashion style.
  - Distinct is transition from formal to no-convetional look.
  - Costumer desires from modern garment owner emphasize personality and life style.
  - Costumers looking for modern product, but not emphatic style, comfortable and simply.
  - The lot of examinee (about 50 %) looking for color and quality when buying clothes they.
  - Costumers likes a cold colors (black, blue) because of influence psychologically and economical reasons.
- Today designing and getting of new ideas in fashion industry should become an organised process that requires thorough, systematic approach that is given a basic direction both by a designer and a capable manager team. Such an educated and creative team ensures designing and gaining new articles of clothing as being the most important element in the development of garment industry done as planned and continually according to current situations and priorities.

In our fashion industry this process is neglected, so many firms are struggling for their existence. It is necessary to do Ansoff's matrix are useful techniques used to find out strong and weak points in a fashion industry, in the table 12 or SWOT analysis (table 13) in order to get marketing weapon and overcome all existing problems, that is to take all advantages and eliminate weaknesses of the firm.

In the table 14 is alternative strategy for Garment Industry "Prvi maj"- Pirot.

**Table 12:** Ansoff's matrix in a our garment industry

Product Market	Today	New
Today	<b>Market Penetration</b> 1. More orders by existing customers and consumers 2. Winning customers and consumers over from competitors 3. Converting of nonusers to users 4. Opening of new shops/stores 5. Extension of working hours of shops/stores 6. Price reduction	<b>Development of fashion product</b> 1. Modification of garments 2. Different quality levels of garments 3. New design of garments 4. Strong retail brand 5. Spreading of garment range 6. Eco- tags on clothing
New	<b>Development of fashion market</b> 1. New segments of marketing 2. New channels of distribution 3. New geographical region	<b>Diversification</b> 1. New supply on a new market 2. New shops on a new market

### 4. CONCLUSION

Manufacturing garment is very important for economic every country. Markets researches, consumers' wishes, requests, and criteria mean inevitable and dominant task for a producer of garments, because by obtaining all these information a production can be directed, business planned with advanced defined aims and strategies. Marketing enables greater flexibility and better organization for more successful reaction to market demands.

Market analyses are perhaps difficult procedures for fashion industry, because they need time to see strong sides and opportunities although they are too eager to identify weaknesses and threats. It is important to be aware that

once when weaknesses are identified, some steps to change them can be taken by training, so there is possibility to make it a strong side. That's why Ansoff's matrix and SWOT are useful techniques used to find out strong and weak points in a fashion industry.

Development of buying and sale clothes by internet is one of possibility indicator of costumer needs. Modern way of communication and manufacture garment like "Made to measure" is next step for strategy in Serbian garment industry.

**Table 13:** SWOT analysis for new collection

<b>STRENGTHS</b> - Futuristic design - Good image - Reaction to a new fashion trend - Quality of textile fabric and production - New economical form of model - Short period of development of a model and short period of duration - Automization of production processes - Industrial training conducted by specialist - Ecological requirements	<b>WEAKNESSES</b> - Very high price because of fast changes - Small series with a large number of models (3-5 articles in work order) - Manufacturing of only three sizes - Bad covering of foreign market - High price of energy - Condition and price rise of raw material because of introducing VAT - Short time for optimalization of products
<b>OPPORTUNITIES</b> - Consumers' wish for new designs - Marketing of products into a new markets - Market - Establishing «show room» objects - Making e-mail catalogue - Value of labour - Production of garments made – to – measure	<b>THREATS</b> - Import of similar articles of clothing at low prices - Competitors have lower price - Competitors have better distribution net with more sales places - Quick obsolescence of technology

**Table 14:** Alternative strategy of SWOT - Analysis of Opportunities and Threats (mark 1 to 5)

Strength (S)		Weakness (W)	
Advantage of geographical location	3	Liquidity	4
Size of garment manufactures	5	High production expenses	3
Development of infrastructure	4	Calculation methods	3
Range of production programme	3	Problems with sale	2
Industrial tradition in region	5	Low level of technology	2
Production capacity	5	Profit trend	2
High quality of garments	4	Structure of capital	4
Stability of suppliers	2	Decision - making speed	3
Energetic collecting of all resources	4	Lack of market information	4
Harmonization of production programme	3	Difficult enter to new markets	3
Total value	<b>38</b>	Total value	<b>30</b>

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## **OPTIMIZATION OF WAREHOUSE SELECTION IN SUPPLY CHAINS**

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***Summary:** Most dilemmas regarding selection of the most suitable warehouse arise most frequently from the fact that there are a number of different alternatives with respect to technological solutions to the problem of warehouse implementation. Warehousing is designed to mitigate the discrepancy between temporally and quantitatively different flows of goods leaving the production process and the goods purchased and delivered to customers. Technical equipment and warehousing technology greatly affect the quality of delivery services and warehousing costs.*

**Key words:** optimization, supply chain, warehousing, optimization

### **1. INTRODUCTION**

Warehousing is primarily focused on implementing warehouse-related tasks characterized generally by the following:

- 1) provision of continuity of customer supply,
- 2) preservation and protection of goods against damage and loss,
- 3) improvement of product usability,
- 4) provision of the cost-effectiveness of procurement.

Warehousing is designed to mitigate the discrepancy between temporally and quantitatively different flows of goods leaving the production process and the goods purchased and delivered to customers. Warehousing should address the following major issues:

- ♦ the quantity and type of goods and storage location;
- ♦ the quantity of goods to be ordered to fill up warehouse stocks and the right time to do it.

The reliability and safety of warehousing, the level of mechanization and automatization and warehouse turnover volume determine the speed and rationality of the order execution process.

The above stated suggests that the construction of a delivery warehouse is justified only in cases when demand is so high that delivery warehouse costs are not higher than the achieved transport cost savings. The smaller the quantity of manipulated goods, the greater the warehousing costs per unit of goods. In cases when goods are not supplied from a delivery warehouse, but rather from a central one, transport costs increase relatively evenly, both for the larger and smaller quantities of goods being transported. A comparison between the transport cost increase and a reduction in the central warehouse storage costs indicates that:

- ♦ large delivery quantities should be stored in decentralized warehouses;
- ♦ small delivery quantities should be stored in a central warehouse.

### **2. WAREHOUSE SITE**

Warehouse site is closely related to the issue of the number of delivery warehouses required. Selection of a delivery warehouse site is a factor that affects the customer supply rate and supply and delivery costs. Major factors used in identifying the delivery warehouse site in the customer service area are the following:



- ♦ **quality of delivery service.** – Any delivery service is designed to provide rapid satisfaction of customer needs. In order for it to be successful, customer desires and needs as well as competitive delivery service offers should be considered;
- ♦ **distribution of demands within the service area.** – The uniformity of demand distribution throughout the service area and the quantity of demands concentrated at certain points in the area should be identified;
- ♦ **demand development.** – Demand development forecasts should be used to replenish the current demand, with special attention being given to the quantity and distribution of demands within the service area;
- ♦ **traffic links.** – Good traffic links are among major preconditions for rapid supply of goods to delivery warehouses and customers;
- ♦ **transport and storage costs.** – Costs of transport of goods to the delivery warehouse and from the warehouse to the customer, as well as the warehousing costs themselves should be defined and compared.

The results of the comparison should be used in establishing alternative delivery warehouse sites (locations). TPS implementation costs are incorporated in the goods value, but they do not increase the usability of goods. Development of TPS processes is characterized, on the one hand, by their continuous integration with the production process, and by an increase in importance in the goods distribution process resulting from an increase in the volume of material goods production and degree of specialization, on the other. Therefore, there is an increasing effect of TPS processes on the stability and efficiency of the production process, permanent focus being placed on their rationalization benefiting the national economy and social community.

### 3. TECHNICAL EQUIPMENT AND WAREHOUSING TECHNOLOGY

Technical equipment and warehousing technology greatly affect the quality of delivery services and warehousing costs. Technical equipment must be harmonized with the requirements referring to the type of goods, volume, weight and number of ordered goods, the quantity of goods to be ordered etc. in order to implement labour- and space-cost savings, reduce the manipulation extent and ensure a rapid flow of goods and thorough control of all warehousing procedures and processes.

The first issue to resolve is the one referring to determining the most suitable place for storing goods in a delivery warehouse, aimed at ensuring optimal warehousing commissioning. The following criteria should be observed:

- ♦ order frequency: the higher the order frequency, the closer the commissioning area to the warehousing area;
- ♦ joint order frequency: the items that are often jointly ordered are to be stored next to one another;
- ♦ volume and weight of the selling unit: the goods that have high volume or weight per selling unit should be stored as far as possible from the commissioning area, whereas those of low volume per selling price are to be stored as close to the commissioning area as possible.

The above three criteria, however, are often neglected, as any free space in the warehouse is to be occupied or goods should be stored by type (e.g. cooled products, hanging textile products, etc.) in most cases so as to take the load off the warehouse in situations when there is a multitude of goods types as well as high non-uniformity of spatial distribution.

### 4. WAREHOUSE SELECTION CRITERIA

Most dilemmas regarding selection of the most suitable warehouse arise most frequently from the fact that there are a number of different alternatives with respect to technological solutions to the problem of warehouse implementation (fig. 1).

Warehouse optimization can provide a number of benefits:

- ♦ faster material flow results in reduced amount of tied up capital and faster production;
- ♦ transport rationalization, attained by the division of labour and through simplifications of the procedures and operations employed;
- ♦ reduction of the overall distribution costs;
- ♦ improved exploitation of means of transport and transportation personnel;
- ♦ packaging cost savings, reduction of transport-related damages, losses and theft of goods, etc. are implemented by standardized loading units;
- ♦ secondary effects with transport and manipulative equipment manufacturers.

Warehouse optimization solutions require the implementation of a set of fundamental systematic steps to be taken, which include the following:

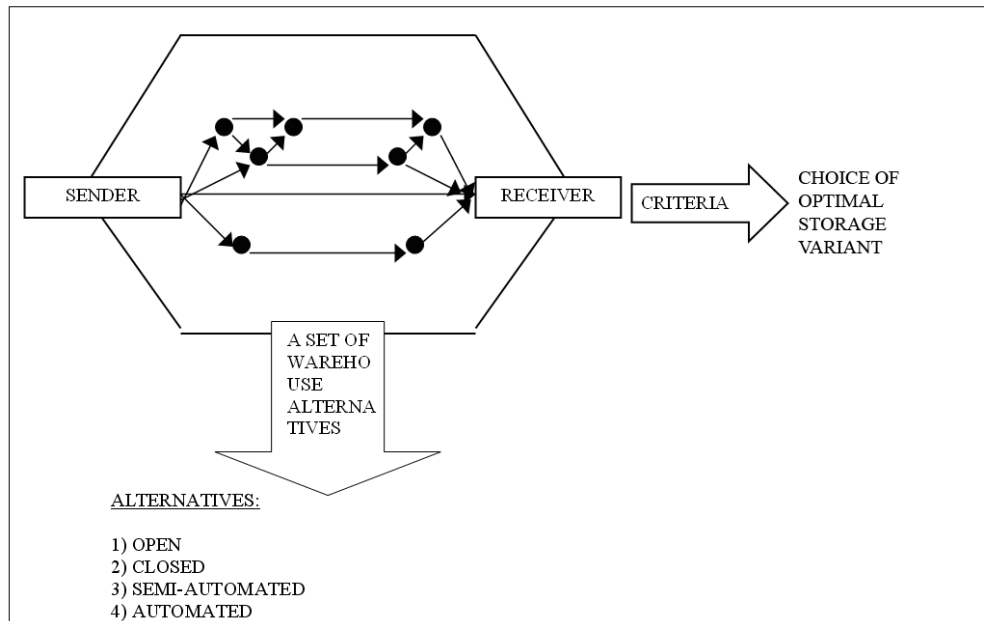
- 1) to define conditions, preconditions and factors essential to the development of warehouse alternative solutions;

- 2) to define a set of warehouse alternative solutions – i. e. to specify potential combinations of warehouse implementation types,
- 3) warehouse optimization as based on a pre-established set of criteria.

Definition and specification of conditions, preconditions and factors essential to the development of warehouse alternative solutions include determination of fundamental characteristics, being the following: warehousing requirements; potential limiting factors; current traffic infrastructure; regulations and stimulatory measures, etc.

Definition of warehouse alternatives includes identification of all actual warehousing capacities.

The warehouse optimization process is aimed at selecting the most suitable type of warehousing out of the set of potential warehouse alternatives using the pre-established set of criteria.



**Figure 1.** Selection of the optimal warehouse alternative

**Open warehouses** are used in cases when goods are not affected by atmospheric conditions. The goods are stored unpacked. The warehouses are free, but fenced. Goods that require protection from atmospheric conditions (rain, dew, snow and ice) as well as normal temperature, air flow and humidity are stored in **closed warehouses**. These goods should be also protected from the potential effects of other damaging factors. Closed warehouses store valuable goods packed in either standard or special packaging, used for storing different or specific types of goods, respectively. Warehouse facilities are located in buildings that have normal or adjustable working conditions.

There are two basic types of warehouse optimization:

- ♦ optimization (rationalization) of current technical and technological warehousing solutions;
- ♦ optimization of newly designed technical and technological warehousing solutions.

The process of warehouse optimization, when newly designed solutions are used, is characterized by the following:

- ♦ a considerably larger set of alternatives can be developed, as there is a reduced occurrence of limiting factors;
- ♦ investments in this case emerge as a dominant characteristic of the set of optimization criteria.

The alternatives are evaluated through case-specific technical and economic criteria.

The set of criteria generally adopted in warehouse optimization comprises the following:

- ♦ material,
- ♦ quantity,
- ♦ location,
- ♦ productivity,
- ♦ financial investments in the system,
- ♦ warehouse integration,
- ♦ delivery deadlines,
- ♦ environmental criteria, etc.

Quality evaluation of a warehouse alternative solution can be made from different aspects of entities that are being evaluated, yet certain criteria can be irrelevant for some aspects.

If a set of optimization criteria  $K_1, K_2, \dots, K_n$  is defined for a certain warehouse problem and if  $m$  – alternative warehousing solutions  $V_1, V_2, \dots, V_m$  are defined for current conditions, where each alternative represents a sum of logistic activities  $V_i = \sum L A_j$  ( $i=1,2,\dots, m, j$  – a set of all logistic activities within a single warehouse alternative), there emerges an issue related to selecting the alternative  $V^o$  out of a set of defined alternatives that will have the most suitable value in the set of values according to the set of criteria

$$K^o = \sum_{x=0}^n K_x \quad (1)$$

The problem is resolved in a simple manner when a single criterion with an exact measuring scale is involved. However, if a certain warehouse alternative with respect to a greater number of significant criteria is needed, the problem is resolved by the method of multi-criteria optimization.

## 5. OPTIMIZATION MODELS FOR WAREHOUSE SELECTION

Examination and measurement of warehouse operation and identification of warehouse types can be used in attaining the following objectives of organizing the warehousing process in production: to optimize stocks of subjects and instruments of labour required for production supply and equipment; to implement effective supply of production within planned deadlines; to store goods with respect to wastage, breakage or in terms of a decline in quality of stored goods; to organize rational pretreatment, finishing touches, processing and packaging in warehouses as part of production technology performed in warehouses. This all should be accompanied by good organization of labour and business operation of certain warehouses, including optimal exploitation of warehouse space, equipment and warehouse workers and minimum warehousing costs. Good organization of warehousing operation necessitates efficiency in gaining an insight into the storage and status of subjects and instruments of labour being stored, which should be provided by records kept within the warehouse administration.

Designing of the most adequate warehousing system enables definition of warehousing economy, in terms of both investments and production exploitation of warehouses.

The optimization methods (models) most commonly used include the ABC and the PROMETHEE methods.

Optimum warehouse is obtained by selection based on defined criteria and warehouse type.

The use of the ABC method: warehouse A is used to store large quantities of goods the flow rate thereof being high, warehouse B stores medium quantities of goods the flow rate thereof being medium, and finally, warehouse C stores small quantities of goods the flow rate thereof being low.

The use of the PROMETHEE method in optimizing warehouses in an enterprise based on established criteria:

**Table 1:**

Criteria			Type of warehouse			
Mark	relative importance	requirement	$S_1$	$S_2$	...	$S_m$
$K_1$	$z_h$	max/min	$d_{11}$	$d_{12}$	...	$d_{1m}$
$K_2$	$z_h$	max/min	$d_{21}$	$d_{22}$	...	$d_{2m}$
...	$z_h$	max/min	...	...	...	...
$K_n$	$z_h$	max/min	$d_{n1}$	$d_{n2}$	...	$d_{nm}$

A multi-criteria preference index should be defined for each pair of alternatives i.e. warehouses according to the following formula:

$$\pi(S, b) = \frac{1}{\sum_{h=1}^n z_h} \sum_{h=1}^n P_h(S, b) \cdot z_h \quad (2)$$

where:

$n$  – number of criteria being evaluated,

$z_h$  – relative importance of criteria

$P_h(S, b)$  – preference function

Warehouse types are mutually compared, the preference index is specified and the dependency table is created (table 2).

**Table 2:**

	$S_1$	$S_2$	...	$S_m$
$S_1$		$C_{12}$	...	$C_{1m}$
$S_2$	$C_{21}$		...	$C_{2m}$
...	...	...	...	...
$S_m$	$C_{m1}$	$C_{m2}$	...	

where C stands for the preference index obtained according to the formula (2).

The formulae (3) and (4) are used to derive the net flow value (5).

$$\Phi^+(S, x) = \sum \pi(S, x) - \text{flow output value} \quad (3)$$

$$\Phi^-(S, x) = \sum \pi(x, S) - \text{flow input value} \quad (4)$$

$$\Phi(S) = \Phi^+(S) - \Phi^-(S) - \text{net flow value} \quad (5)$$

The net flow value is used to obtain an optimum solution, i.e. warehouse, the highest flow value being also the most suitable one.

## 6. CONCLUSION

Major warehousing tasks include the following:

- ♦ provision of the continuity of both the production process and customer supply;
- ♦ preservation and protection of goods against damage and loss,
- ♦ improvement of product usability (i.e. fruit and vegetable ripening, drying of semi-manufactured wood products, etc.),
- ♦ provision of cost-effectiveness of supply,

Successful implementation of the above tasks is dependent on a number of factors, major ones being the following:

- 1) warehouse site,
- 2) warehouse capacity,
- 3) warehouse technology and
- 4) organization of warehousing operations.

The interdependence of warehousing and transportation in supply chains:

- transport structure is predetermined and characterized to a large extent by the delivery of goods from a central warehouse or from a number of warehouses (within a single distribution system);
- in cases referring to large spatial dispersion of customers, transport services from the central warehouse are very expensive, whereas these warehouses enable, in cases like this one, a high degree of adequacy (reliability and safety), as well as a high degree of mechanization and automatization of warehousing operations, reloading and order execution procedures, issuing of transport dispositions, as well as identification of required means of transport and time of their departure from the warehouse.

The effects of warehousing on other subsystems are not as pronounced as in the transport process, but they are highly important, particularly in terms of the quality of delivery service and costs related to order execution, commissioning and packaging processes.

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## **MODERN CONCEPTS AND TECHNOLOGIES OF CLIENTS RELATION MANAGEMENT**

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***Summary:** It happens nothing occasionally. Concurrency on the market requests quick answer and detailed knowing of client. The survival on the market depends from dynamic what loyalty client earns, and it is generally know, that satisfactory clients bring the most profit. Possibilities of renewed and additional sale to the satisfied and loyal clients is ten times greater and bring double more profit in the relation on the sale to new buyers. It can oblige to necessity of customers. It is challenge to do that on economy warrant way. Finding the way is essential of CRM (Customer Relationship Management).*

**Key words:** Customer Relationship Management (CRM), Electronic CRM (e-CRM)

### **1. INTRODUCTION**

In the time, when market becomes, and concurrency serious, it is not easy attract, and more less client restrain, and anyhow, already choosy and little bit particular buyer. More care about client and development of longterm-personalized relations, becomes cadre of each business. The concept "client in center of attention" is solution decidedly, if it wants development and success of company. That is essence CRM system, which make market match and modern management.

Introduction of CRM system in company, requests some vision, which involve all business levels started from the highest organization level. On the occasion define its, directives for the future cooperation with clients; it is necessary strategy for goals attainment. CRM strategy to allowing for finance goals, and business strategy of company, that it presents outbuilding of marketing strategy. CRM strategy determines modus with which company earns profitable relations with clients. Strategy goals must be measurable with CRM tools. In the center of attention is not product, already to oblige the client, and in that way, makes pleasure to it and increase its loyalty. Only on that way it can ensures a significant advantage in refer on concurrency and long-term success on the market.

However, only CRM technology introduction is not enough that company would be orient to the client. For that it is necessary to change the way of thinking in the company, culture, and behavior and organization structure.

### **2. CLIENT IN THE CENTRE OF ATTENTION - ESSENCE OF CRM SYSTEM**

#### **2.1. Transforming transactions into relations**

Relation with clients' management invades more significant place in company business strategies. CRM system cadre is transforming transactions into relations, in reference to among gentle relations. Transforming transactions into relations, unfold under bigger tensions as transaction are bigger, because that transaction does not matter every day. If transaction has less frequency, it is bigger challenge transforms those in the relation because you have fewer chances to show to your client that you wish that you were different, that you are good in yours job and that they can to believe you. In that case, it must to find to invent accent for communication. It must make contact link. In that chain, the best PR is company employers.

In the small enterprises, connection with clients is very strong, even on friendship level. It exist conviction that when business grow up it comes to depersonalization, so that connection with client becomes disconnected. That

can be exceeding with help of three important factors. Those are system, client oriented process and people. Because of that, CRM is essential as tool, which will collect all information, on one place.

You must initiate yours clients, if you would transform transaction in the connections. Experience creates itself, but and great investment in CRM system is not successful guarantee if fail and the third necessary link - motivated employers. If employers are satisfied, they are loyalty, so that and efficiency is higher.

In the management with client relationship, must to come to spontaneous employers' behavior. That is intention of mission because clients cannot victimize. Valuation of somebody effort is a magic, which gives staying reason, and client staying, is a goal. It means efficiency, which CRM increases. Development system means that all "critically" information about client, you have on one place.

Efficiency is very important factor of finally success, because, buyer pleasure reflects in the speed, which you will give service. The circle encloses with people, because you must to have the people with will for top of CRM. Essence is, if business increases, relation quality with clients will decrease, certainly, with respect to that you cannot maintain same quality communication with such volume of clients.

All information, which makes system, is critical references, which called critical level of pleasure. It is a base loyalty relationship development. Today, we are living in more complexes environment, so if you market good product, it will not pass much time, when somebody will launch better, maybe, and with much beneficial price. Because of that, technical characteristics of own products you must supported with more quality services. When whole concept, each its segment, quantity add, business could be better to the highest level.

Companies understand valuation of CRM system not till when span how much money lost with client disadvantage. How you can valuation something if you not know what its price is. When you see that someone apply million euros, the way of service will be change.

Activity is not due to appliance of CRM. The only difference is in relevance-determined information. In addition, whom information is unnecessary when we know that loyalty based on knowledge, and it on CRM and in its instruments. In the technical sense, implementation of CRM system, balance on appliance various software. There are various and need to avoid too complex software. It must be practically and not thinking too much about brands, already it finds the most simply solution. Efforts that it be too much good or perfect can be contra productive.

CRM is completely in span with marketing. Non-integrated relation is completely inconceivable. Complete strategy and activity accomplishes with activities of marketing, sales and customers care.

Significant industry, against number of client, which must inlay bigger effort that cares of them, is banking. Culmination of kindness according to client, not smiled counters officer. CRM bank strategy starts with model client behavior define and its possible necessities. Results of those analyses are "good products" for which it anticipates that client will bigger probability uses. By data analyses about client, modern banking today creates goal's products based on client necessities.

It tends to "client in the center of attention" principles development. The speed of implementation depends from manhood of complete market as and necessity and size of same bank.

### **3. INTERROGATION OF EMPLOYERS PLEASURE - PRACTICE WHICH TO ADMINISTER THE BEST WORLD COMPANIES**

#### **3.1. Concepts and research phases**

When is word about pleasure, the most often mentioned in marketing range (and CRM), like a pleasure of buyers or clients. Thereby it works very attractive researches, which in great measure can to improve existing product or to help in launch new product on the market. That is only one of the way on which companies can to improve own business before of all by acting from out, interrogation of necessities and pleasure of own buyers.

That is not all. The smart firms take care about own "human capital": carefully choose own employers, invest in its development, planning careers of own employers parallel with progress of whole company planning, examine what its employ think and how do they feel. They take care for own staff. Employers' pleasure is only seemingly new theme in the range human resources.

In the 30th years of last century, it worked the first studies on theme lighting influence on employ productivity. During the twentieth century worked on thousand studies on theme pleasure of employers. Today, interrogation of employers is a good praxis, which leads the best world companies. Statistics bring the pleasure in directly connection with pleasure of buyers, with company's participation on the market, even and the profit.

Amenity pleasure interrogation of employers is multiple. Only the fact that company interests that its human potential thinks about company strategy, management, employ conditions brings to motivation increase of employers. Motivation is key word for better labor output of employers, influences on bigger productivity of whole company, brings to competitive results in market match, and again, to bigger profit. Also, it determines that regular pleasure interrogation, positively influence on increasing loyalty of company employers, like as

decrease negative behavior employers to company as absenteeism (furlough from job) and fluctuation (leaving company).

Phase of pleasure interrogations are:

a). **Organization of focus group.** In cooperation with HR director and office of human resources, determined companies, organize meeting with main exponents of all sectors and in dialogue with moderator, discovers specifics that company, like especially necessity.

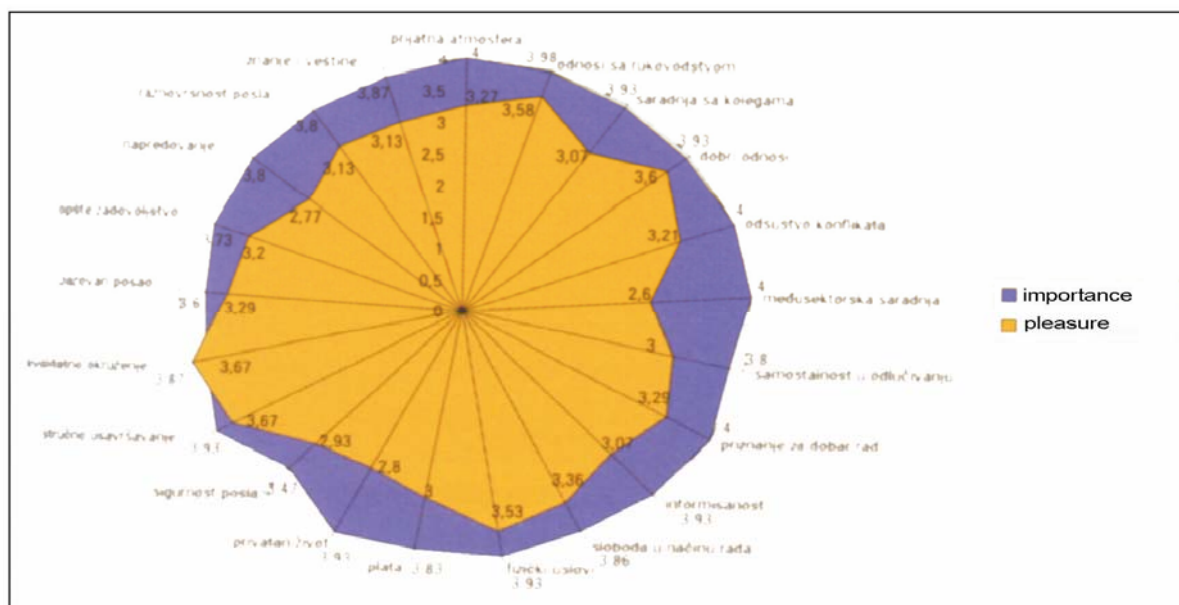
b). **Interrogative adaptation.** Based on results of focus group, basically interrogative adjusts necessities that companies, because interrogative cannot be same for company that occupy with production and for some which occupy with services.

c). **Impose of interrogative.** It is very important good organize impose of interrogative, so that all employers know with which goal interrogation work and that maintain relevant answers, non-obstruct with fear or acknowledge.

d). **Statistic of data processing.** All collected data, statistically processes and can be assort by gender, manager's position and similar.

e). **Quality data analyse.** It is finally presentation of results and recommendation for pleasure promotion of employers on the working place, individually aspects. After accomplish correction measures describes in the recommendations, interrogative can be repeat how reformation will be measure.

Much of research measures only employers' pleasure on determined parameter or job dimension. More completely measure instrument for employers' pleasure we get parallel interrogative and pleasure with some of job aspect, but and importance which that aspect has for each employer separately. Just that won relevant data, but barrier between importance and pleasure-determined aspect direct on problem on which it must work systematically.



**Fig. 1:** Results of pleasure research by some job aspect and importance of that aspect on each employer individually

In the praxis it needs to avoid *online* interrogative impose, because it is necessary, in direct contact, explain to employers, research intention, also and resolve the eventually fear from consequences. Research is ammoniums, but the personal information refers on pole and position in company (higher, middle management and other employers). Research needs to involve all aspects of job or maybe these main, hence, how employers evaluate own relation with other colleague, but and physically working condition, how much they pleasant with allowance and do company proffers enough possibility for their progress and competent accomplishment. Completely interrogative we get if we dedicate to research of confidence, which employers have to company, i.e. research of organization support or how much employers feel that company stand by them in the some difficult moments.

It is desirable to administer these researches leastways one time in the year. It is not recommended that companies do this research alone, because employers can to feel imperil and that understand like denunciation, and do not give confidential answers. Because of that, it is recommending to engagement any non-biased competent company, which will get objective data.



## 4. INFLUENCE OF ELECTRONIC BUSINESS ON MANAGEMENT OF ELECTRONIC SERVICES USER

### 4.1 Electronic business influence on clients

Electronic business and the world where it precedes and which it carry with itself, much smack on the Alice miracle land. That is imagining world of zero and one in which is all possible and all impossible, where all is on hand sweep and in which all boggle for spin. However, besides all of that, it must accept the fact that business on traditionally way and electronic business at modern business system on completely equal level, like and Internet and modern electronic business becomes a part of business every day event. What introduction of e business means for manager?

Electronic business introductions one more nuance in the spectra of color with which it paints abilities of modern manager. Modern manager needs to know advantage of e business and that it had developed mind about its assignment...For next, e business will help to manager to simply overpower area distances, to save time, money and resources and that its company "business" 24 hours per day. That means accomplishment just of these requests, which are advance of each manager.

Electronic business is significant because the way on which business will be accomplish - help, initiate, support with helps of technology. Electronic business is not only www (World Wide Web). Electronic business uses all technologies e - business (par example, Internet, portals, contents management, and mobil phones) as increase profit of investor, so that:

- transforms key procedure which happens on new, fast way, including more links,
- interrupt traditionaly paradigm of business model,
- create and use experiences of brands,
- optimize interaction with all investors,
- use knowledge to maintainable concurrency advantage.

Thinking usefull of electronic business reflects on interaction of some institution with interactions of their clients in wide sactra

- a). **New distribution links.** Cretae own self with help of all present technologies - technologies which allow to clients to be everywhere and available for everyone.
  - b). **New markets.** When brand be follow by Internet, it can to take a new market and other one can be create. Internet pages on which proffer finance services enjoy privilege of repeated business if companies have a little imagination it is not difficult that own visitors directing to the other non-finance markets.
  - c). **New business models.** Electronic business ensure direct and at the same time interaction between all sides in the chain of validity - buyers, sales clerk, those who gives information, etc. With that accomplish potential to makes problematics models of business as electronic market is.
  - d). **Transparency markets.** The biggest advantage of World Wide Web is because to whole world population offers non-limited number of information about non-limited numbers of products and services. When all of that apply on virtually products as bank accounts are or action market, whole validity chain becomes transparency.
  - e). **E-CRM.** Electronic interaction with client records by computers. Each action of client can be follow, giving much more information about client. To allowing for that we are so far from "transparency market", electronic market presents very powerful for client keeping.
  - f). **Decreased expensive and better services.** Electronic business to decrease prices, with decrease expensive, while business optimization accomplishes better service to clients and flexibility of product.
- Critical factors of successful in usage electronic business, which accomplish client management, includes:
- a. Suggested validity (products and services which offers to goal group, must really, have suggested price),
  - b. Brand which to believe (something what is depreciating in dotcom world),
  - c. Blameless management with clients on more links (user of finance services, which now use online, services, uses services filial and call center),
  - d. Internet page quality (useful, flexibility, security, continuities in services delivering),
  - e. Culture / Language / Geography (despite global nature internet, in real world geography, ethic qualification and language presents big differences between culture).

### 4.2. Technology possibilities of infrastructure building for online pay platforms

#### 4.2.1. New product internet revolution - cyber money

Dematerialization trend come to the point in which money is not noting else to simply flow of data between connected computers. Next evolution step is - cyber - money.

Electronic money and cyber money, although many times equalize, they are not the same. Electronic money refers on all computer-based mechanisms of transfer substance (par example, credit cards, debit cards), together with own approach terminals (bank mats, POS terminals). Cyber money is term which referring on transfer system, which pass across internet.

That is the fact that is very difficult to make border between these two categories, because electronic money which the first become, made initially market for cyber money and because in many aspects today's business combine. In the further future it can expect that electronic money convert in the cyber money.

These two categories very often are identifying. In addition, some of leading bank institution, like Bank for International Justify, completely ignored difference between electronic and cyber money. Certainly, each category which is technology-innovative leading, like as electronic or cyber money, it is difficult to define.

Cyber money refers on creation and circulation of online money. Observing development of cyber money it can expected that technology organization accomplishment appear. Smart cards will, par example, one day really be smart, combined many of applications, which convert this peace of chipped plastics in necessary link with outer world. It identifies users with finger touch and keeps incredible numbers of information.

Who knows what finance services these cards can to offer for ten years, maybe? Once, when money becomes software, whole monetary process must to be organize on completely new way. Technology possibility for infrastructure building, for online platform of paying, and circulation of digitally money are numerous.

How than manage with these forces which turns cyber money? Maybe it is the first step to giving answers how cyber money was creating, where definition of central banks less useful.

Innovations in banking leading with technology were strong impulse for cyber money appearance. The first are appearing debit cards and credit cards, which "plastic" money presents good prepared base for much sophistic - smart cards that will become key element in transaction activate by cyber money. Bank mats and POS terminals to the people from all over the world familiarized electronic money. Next step was strongly marketing where bank argue millions of commitments that own business leads over own PC connected by phone line and modems with bank. Finally, banks are in creating process completely new, electronic banking on that way making fundaments for new form of money - cyber money.

Cyber money era now is on beginning, and it will be interest to observe its development. One of the most interest things is that only nature of online money implements non-banking institutions in the monetary process and in that way abates monopoly, which banks have in creating of money mass. The money as software will have unique technology leading capacities and accomplished things, which cannot to do any other money firm. To us it stays only the watch and - use it.

## **5. MODERN TECHNOLOGY TOOLS IN CRM**

Customer relationship management (CRM) presents good composition assembled from three segments: technology tools, business process and human resources. CRM completes, on one place, information from all origin in organization, give complete image about each individually client. These enable to employers in the organization who direct communicate with clients to bring fast and correct decision based on appreciable information. It is necessary to accomplish engineering all business processes in the organization to adjust all of them to CRM initiative and often from base "how concrete process can efficiency serves to client?"

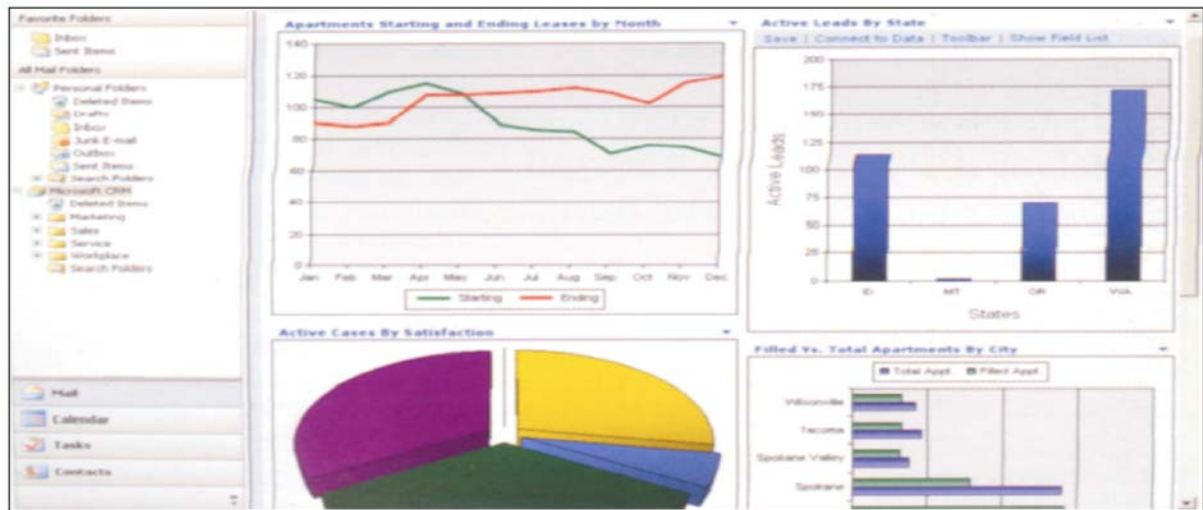
Company, which appropriate for organized CRM, must to preserve and technologies, which will lead accomplishment business processes. Automatized complete CRM systems consist from three components. Three components are operative, collaborative and analytic CRM.

Operative CRM creates information, i.e. data enter in the information system over applications for clients monitoring. Par example, if like a saver of some bank call bank call-center and ask for your status account, operator on display has (behind data about your account) all data about your earlier notices and suggestions. Certainly, these applications have a function for entering new data. These data stores in the database without analyze for which oblige analytic part of CRM.

Technology part of CRM process presents software tools - CRM applications, which are support of total management with client relation. These tools can be component of ERP system, as it is case with products of SAP Company, Oracle and People Soft, and can be and self decision like in the case of Companies Siebel, Chordiant, Clarify or Pivotal, and software giant Microsoft. Modern software changes the way of business, accomplish internal communications. Microsoft Dynamict CRM follows named concept and give tools, which move to you near to clients, makes differences between you and concurrency and do to accomplish bigger success.

Simply modification display contents, data field and relation between them enables to show usefull information. Leading installation where are tools for diagnostic of system status save your time and secure successful installation of Microsoft CRM. Simply for use, step by step, Microsoft Exchange Connector Deployment Wizard simplifies integration Microsfot CRM with Microsoft Exchange Server.

Of course and companies like as Siebel, Chordiant, Clarify or Pivotal give good solutions and suggestions how come to good software. Interest solution offer Omega Software Impros.



**Fig. 2:** Technical tools for status diagnostic of CRM system

Architecture of the system based on verified technologies. Imperious, from the beginning, made for arrangement of great numbers of documents. That is system, which proffer security and certainly irrespective how complex business is. Good support for mobile equipments enable to the people who works on terrain to have approach to client data across any device \_PDA, laptop or some smart phone.

Reach full functions is consist across modules imperious system means completely connection of company parts. Business information of all business transactions integrated in this system. Modules of Imperious build on the same platform. Integration enables opening all reports in Excel or Word, and all documents could be saving in PDF, HTML and XML extensions. In any case, all solutions serve for fast, practically and efficiency appliance CRM technologies in great systems.

### 5.1. System CRM - leading software solution for client relation management

Is and how IT companies in self-business appliance products which offer to the other? That is the case with Siebel CRM solution for client relation management, which on domestic market implements Spinnarek New Technologies, and which the first appliance realized in ComTrade Group Company, in the frame and Spinnaker. It is prove (with ten years experience on the world market), CRM solution, named Siebel starts to appliance and on Serbian market. With system developed, Siebel begin early, on ninth years of last century what enables to him that outbalance concurrency on number of users, but and its functionality. Company Spinnaker New Technologies, where Siebel had the first installation on our area and join to the group of 5.000 companies and 5.000.000 users from all over the world, become legal Oracle partner for implementation Siebel CRM solutions to the requests of buyers.

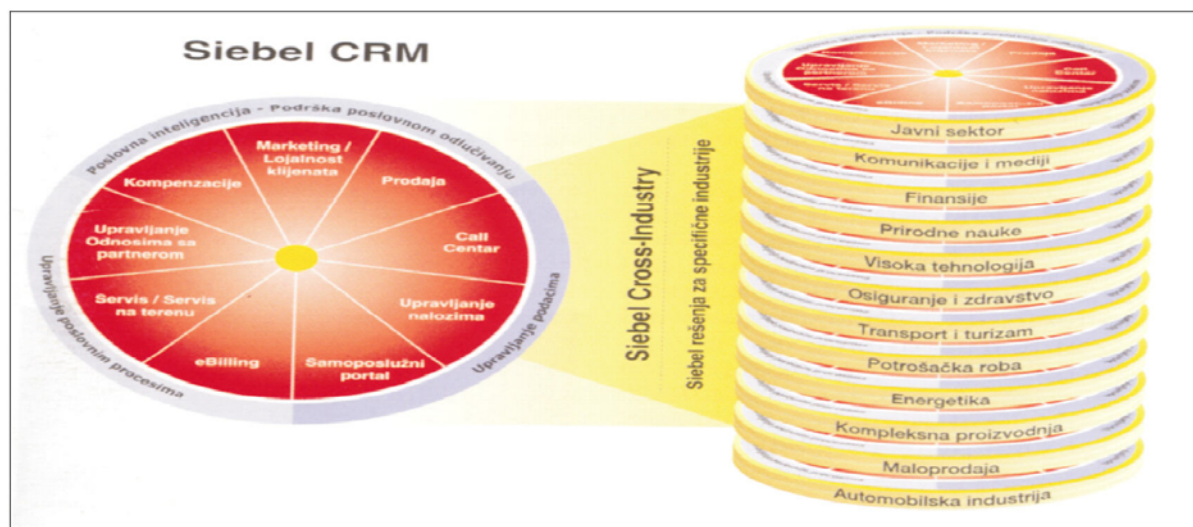
Its main advantages

Are functionality and flexibility, because it offers modules, which are adapted to concrete necessity of company, irrespective on its size and activity? Except standardized solutions - Siebel has more than 20 solutions for specific industries (Industry Specific Solutions): finances, measurements and health protect automobile industry, public sector, communications and media, transport, tourism, catering etc.

With its concept and functionality, implemented business process and evidence of experience Siebel CRM enables integration support of all classis, which communicate with clients. With Siebel accomplishes better organization of marketing, sales and services, availability all mainly information to all users in sales chain, higher level process control in these department, and all information stay in system and uses in every day activities.

Along efficiency market watching and following influences of marketing companies on customer behavior, Siebel helps to company that activities in the future adjust to new knowledge and ensure better customer answering on champagne, generating sales potential with less expensive and generally increase activity of management in refers to total market of company. That in the praxis means shorter sale process and increase of percentage closed business and also and better relationship with buyers.

Siebel with help its specially module can to ring intervention and requests at priority and to sent automatically appointments to the persons for problem solutions. On ties way, it accomplish shorter time of answers on requests what in the end line implement decrease expensive necessity for service.



**Fig. 3:** Siebel CRM - more than software

## 6. MANAGEMENT POSSIBILITIES FOR CLIENT MARKETING IN GLOBAL ECONOMY CRISIS CONDITIONS

Global finance crisis and recession, with pessimism, accomplishes each businessperson and investors, from all over the world. From analytics come murky prognosis, they said that was not being the 1929th year when bourse had total breakdown. Creators of economy instance try to decrease proportion of trouble but they are not sure in measure, which they assume.

Logically, the fear is in all people in the world. Men fears that cannot to pay credits rate etc.

In global crisis which few months spellbound finance institutions, possibilities of management for client management are very limited. Loosing clients is often moving of people. It is same in the world, in America, Great Britain, and Serbia. Boards of finance institutions need to carefully entertain the risks and prepare "answer" on crisis. However, influence of foreign factors is very strong. Weakly institutions can fail down at once. Affiance can do so much, but when people feel that its money is imperiled, they retire them even and they trust to bank. This organization, which control risk on that way, will be less liable to outer factors.

Generally, the customers are behavior non-usually. They stop to dissipate money and dissipate for the basically things. Nobody will not to activities any new business and opens new accounts. If it has any guarantee, some people start to transfer their money and fond in Serbia, what is a good because that is necessary to Serbian economy.

On long distances, CRM has chance for help to banks and the other finance institution in Serbia, and even in the country make acceptable environment what can improve increase economy growth, investment etc.

In Serbia, bank system is less deregulate from rest of Europe. NBS (National Bank of Serbia) was carefully and that is good for Serbia. Because of that, Serbia has good bank system even more liquidity from British one and rest of Europe. However, when people start to panic, liquidity not helps too much.

Management with client relations is consist part of modern marketing. CRM scanned market situation, give answers and client data, their necessity and behavior, like and point where is base of creation not only approach, yet and same offer of products and services. Client data are use for research and services modeling. It changed and concrete way of direct communications. So now, client decides is the contact be over a post, sums-services or directly from its adviser

It develops unique concepts, "client care", for each client group. Individually creation of approach is the real way of quality and partners relation development.

## 7. CONCLUZION

Because "plastic faces" no more pass at clients, in banking sector are, on the pleasure of employment especially sensible. The nature of business requests often meeting "face to face" with clients, so CRM uses like one of link to achieve the same.

If intelligence, as ability to solving problems, connects with satisfied employers who really take care about its clients and adequate software solutions which assemble all parts in integral part, we get closed CRM chain in which centre is client. How much attention dedicate to them, and your profit will be proportionally to that.

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## **INFORMATION SYSTEMS AND MARKETING MANAGEMENT**

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***Summary:** IS marketing support integrated approach to all marketing activities and products in a large number of information about customers and markets. Presented is one of the possible mode is marketing management as a basic subsystems marketing information system, which provides management of marketing activities in the company, combines the basic information about the system and allows the implementation of unique marketing strategies targeted to selected segments of the market. Marketing information system supports an integral approach to all marketing activities of a company and produces a large amount of information on buyers and market. It is present one of the possible models of marketing management information system which is a basic subsystem of marketing information system. Marketing management information system provides management of marketing activities, combines basic information about a system and enables usage of a uniform marketing strategy directed towards chosen segments of market*

**Keywords:** information systems, management, marketing

### **1.INTRODUCTION**

For forecasting conditions in which the company found in the future require large amounts of information. Business Vision, the scope of the event, a short time for decision-making and the need to adopt in each situation the best solution, increase the information needs of managers and encourage the application of information systems. One of the tasks of management is down to the lowest possible risk to the measure that will make the wrong decision.

Marketing Management 90-years out to establish and maintain tight and long-term relationships with customers, putting customers at the center of their business decisions and to adjust them and striving to meet all their needs. Collecting data on customers and market creates the conditions for the improvement of technology sales and marketing, and therefore the strategic positioning services.

A model of marketing information system is the basis for management activities in the company. Entry information gathered from external and internal sources through MIS and directed the bearers to specific decision-making process, and then embedded in specific marketing activities and the decision of returning back to the market.

Model MIS represents a complex system composed of the following subsystems:

- Marketing Management
- interface to existing information system
- marketing database (Database Marketing)
- a support system for decision

Subsystems are listed in the interactive relations which are natural because none of them can not act independently.

### **2. INFORMATION SYSTEM IN MODERN BUSINESS**

Modern business is characterized by rapid changes in the environment and increasing pressure of competition. Changes in the environment are related to the changes:

- business conditions,

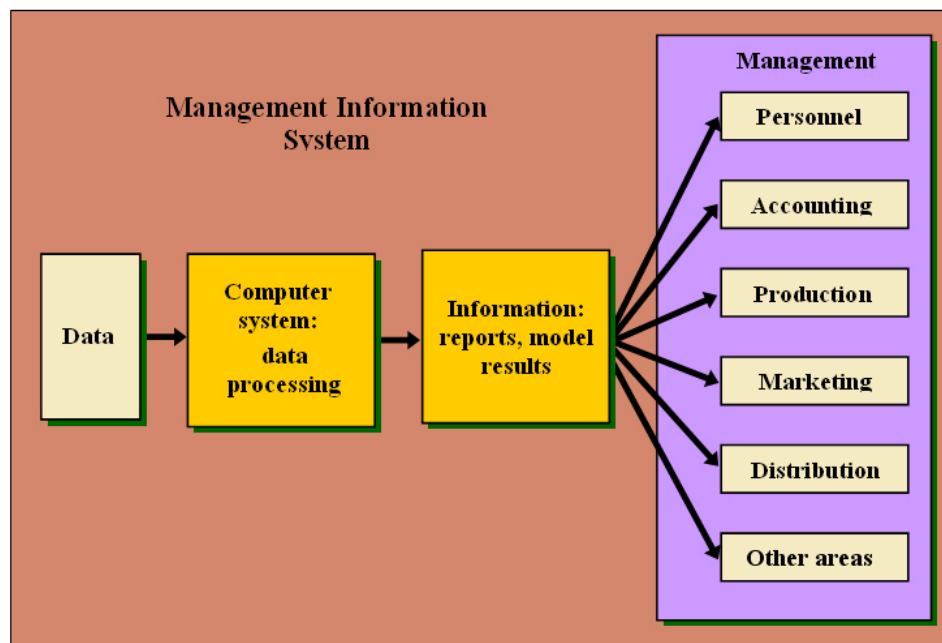
- technology,
- methods,
- standards and
- information systems.

Business management system must continually find answers to all the turbulence in the business environment. Managers may have different methods in solving the problem [15]. One answer is the development of its own strategy in the field:

- business,
- automation,
- integration,
- information and
- utilization of resources.

In all the changes at the entrance to the business system is evident the influence of elements of information systems, and especially in the areas of technology, methods, standards and information systems in the narrow sense. Pressure of competition is also reflected in the adoption of IT solutions. All of this requires that the business system to develop the appropriate strategy, which is one component of development strategy and information systems (IS), based on the information strategy, integration and automation.

The role of IS are structured by hierarchical levels. Primary, and at the beginning of the development of the dominant role is to support the IS business operations (mass data processing). Higher level in the development of IS is to support the operational decision-making managers and middle level, or MIS (Management Information Systems or IS for management support), and the highest level of support in the implementation of IS strategic advantages of companies. This role is achieved when the IS include as an element of strategy, either in the primary or support activities [10].



**Figure 1:** Information management and decision making in Management Information Systems (MIS), [1, 2]

Each of the participants in the chain of value creation of products uses certain IT developments, and the IS. Information systems are one of the conditio sine qua non of success and survival of companies in the highly unstable business environment. The task of information management systems is to support companies in making business decisions to ensure effective and efficient operations. Here the degree of effectiveness of means to achieve objectives (doing the "right" thing), a measure of the efficiency of use of input resources in the achievement of outputs (doing the "thing" right). The influence of information systems on management and indirect, because the implementation of information systems creates a positive climate and culture, increase the transparency of business processes, create the prerequisites for rapid and positive organizational change and business re-engineering, increase the general level of knowledge of employees and the need for integration with the environment. Namely, the impact of information systems in management is very important, positive and efficient.



### 3. INFLUENCE OF ENVIRONMENT ON MANAGEMENT AND IS (INFORMATION SYSTEM)

Business system is the organizational system in which the economic resources (input) transformed with different organizational PROSES (processing) in the products and services (output). By that the system provides the necessary information for the management of the organizational system.

The influence of environment on the management is manifested by changes in the business environment. Changes of business environment are reflected in:

- increase the complexity and variability of the business environment,
- increasing competition and globalization of economy,
- increase social responsibility,
- growing appreciation of ethical requirements,
- change the structure and the qualifications required labor,
- growing demands and expectations of customers,
- accelerating technological innovation.

Increasing complexity and variability of business environment requires management to be constantly faced with these changes, to continuously provide the appropriate planning and business strategy. This influence is expressed in all companies, so that we can say that all companies in crisis, with different intensity and phase of the crisis in the companies. IS in these conditions becomes a factor in the survival of companies because it enables management to act flexibly in relation to changes in the market, especially to very quickly deliver top management all the irregular phenomena, critical trends and implementation of appropriate systems for decision support to a solution for structured decision-making problems. Increasing competition and globalization of the economy is reflected in the change of competitiveness on the basis of price and quality to its evolution (including quick response to customer requests) [9]. Competitiveness based on prices realized by constant technological innovation and changing prices of. Although in many countries in the development of price and 10 times less than the cost of work in the industrial developed countries, in these recent competitiveness is achieved through higher levels of production and applied information technology and modern management. The implementation of IS has an effect on the reduction of costs, and increase competitiveness on the basis of price. The same observations apply to the impact of IS on the increase of quality and flexibility. In conditions of globalization of markets IS becomes indispensable factor for the inclusion of companies in the world economic trends. So, for example, including the Internet company to sell its services, monitors the cost of competition, technological development, methods and techniques for the improvement of business, etc.

Changes in social responsibility companies reflected in firmer connections between companies and society as a whole, which is manifested:

- promote environmental protection in terms of pollution, noise, vegetation, animals, parks,
- providing equal opportunities for the old, handicapped by the other gender,
- additional hiring of young, retired, poor,
- social and health care employees,
- relations with state bodies and political parties,
- new approach (the so-called direct marketing),
- respect privacy and ethics.

In all these aspects of IT (information technology) allows stronger connection companies and society. Thus, for example, using IT to all interested parties provide all the relevant information about available jobs, earnings, conditions at work, etc..

Contribution of IT more appreciation of ethical requirements is reflected in the various systems for the protection of privacy and features the fast association of people in the protection of certain ethical principles (for example the abuse of children).

IT affects the change of the structure and qualifications of the labor force, and vice versa, employment trends of working-active population require greater application of IT [10].

IT requires to increase the level of knowledge of employees in the development and use of IS, in some cases, a higher qualification of the labor force, and in some and lower for the automation of business processes. In any case, employees in the coming period must have "information culture", ie to be "written informatics".

In the contemporary business customer becomes the alpha and omega, which require quality standards and modern marketing concepts. Modern marketing involves all employees in the company in a more efficient creation of superior value for customers with over average profit [3]. Customer requirements become more sophisticated, constantly changing their expectations and wishes related to new products or services. Therefore, the establishment of these requirements, expectations and wishes of customers and their transformation into products and services is essential task of management.

In accordance with the booming needs of society, but regardless of that, quickly are realized significant technological innovations. One of the prerequisites for the development, transfer and management in practice is



the application of IT to increase flexibility, access to new technologies, and in many cases, IT is embedded in the new technologies (for example, neural chips, space technology, diagnostic technology in medicine, geology, etc.) Uticaj okruženja manifestuje se i direktno na stalne izmene organizacije i menadžment preduzeća. Preduzeća su prinudjena da stalno stvaraju poslovne alijanse sa drugim preduzećima, čak i konkurentskim, da bi ostvarila veći uspeh na tržištu. Ne ulazeći u problematiku poslovnih alijansi, ovde treba istaći novi tip alijanse, tzv. virtualnu korporaciju (fabriku) koja se zasniva na formiranju kompetitivnih čvorova koji zaokružuju lanac stvaranja vrednosti, a od kojih svaki može pripadati različitom preduzeću.

This concept can not be imagined without the intensive application of IT, bridging the great distance between the node and creates the preconditions for change of information required for decision making. In this sense, management must be more to respective to the application of new management concepts, such as business process reengineering (BPR - Businesses Process Reengineering), total quality management (TQM - Total Quality Management), production of the correct time (JIT - Just in Time ), etc.. [9]. Not entering deeper into the concepts of modern management, this has only one aspect where IT and the IS presented information "backbone" and the basis for the integration of information process, which is specifically expressed in the concept of CIM (CIM - Computer Integrated Manufacturing).

## **4. METHODOLOGICAL APPROACH OF MAKING IS MARKETING MANAGEMENT**

### **4.1. BSP (Business System Planning) study**

Realization of formalized description of the real system depends on the applied methods. BSP (Business System Planning) is the study of information systems planning. Applying the BSP method, it is possible to develop a business model which shows the relation between business processes and strategy, organizational structure and key data. When it starts from the two basic strategic preferences:

- defines the data model as the basis of information systems,
- defines the general structure of information system on the basis of business processes (such as relatively most stable components of the real system, as opposed to the organizational structure that is sensitive to changes)

### **4.2. Structural system analysis**

Structural system analysis is performed for one subsystem, or software subsystem defined in the selected methodology, which is realized through the formalized description of the real system [16]. It defines the system logical level, regardless of how the realize and the physical components used in its realization. This means that users can define the requirements, without limitation, the nature of design. Basic concepts for the specification of IS in SSA are data processing, data flows, data storage and interfaces.

## **5. LOGICAL MODEL OF IS MARKETING MANAGEMENT**

Good information enables a successful marketing action. Management of marketing in this context is the activity of processing information. Analytical observing system marketing management can be parsed in the following subsystems: analysis and planning, implementation and control.

- Analysis: It includes analysis of all factors that may be of influence on the success or failure of companies in the field of management. The analysis is preceded by planning and decision-making and, among other things, includes consideration of the following factors: analysis of the market (market size, market competition, competition analysis, analysis of customer service), the analysis of (the percentage of participation in the market, portfolio companies, profitability analysis, etc.). Analyses include effective research and analysis of marketing productivity, marketing and research scan-system, which refers to the prognoses.
- Planning: Well done analysis is the basis for planning and decision making by marketing management. Strategic marketing planning is a process of strategic analysis of factors related to the environment, competition and business, and that affect the business and forecasting future trends in the areas of interest for the company [9]. In the framework of strategic planning to set goals and formulate strategies on the level of companies and business functions, are the choice of target market strategy for the market which is intended to offer and make the decisions related to marketing the combined service, pricing, distribution and promotion [16].
- Application: After the formulation of marketing plans-strategic and tactical, the next step is the care of their implementation. Application means that the staff and financial resources appropriate distributed, including deadlines for specific tasks, responsibilities and all necessary authorizations. Application includes the testing and sale of certain services or work which is defined as a leader.

➤ Control: Last subsystem which is included in the tasks of marketing management is the monitoring and control of marketing activities. Monitoring and measuring the effects of marketing actions, while a support phases of analysis and planning, this allows management to re-start the whole process. In the control and define the measures for contingencies, based on the forecast and scenarios, which involve the development of action plans in the event of changed conditions in the internal and external environment.

➤ Objects outside the context of the observed system, through which the subsystem associated with the marketing management environment, at the same time define and set boundaries of the system. Interfaces in the model are as follows:

Clients: represent a significant market of legal persons which is directed to offer, and that company can be in different types of business relationships.

Service users: The market for legal and natural persons that appear in different ways as users of services.

Brokers: help the company in promoting or selling services to end customers [9]. This may be agencies for marketing services, for example, for economic propaganda, which help in promoting and directing services to the rights of the market.

Public: Each group that has actual or potential interest or impact the ability of companies to accomplish its goals: the financial public, media, public, state as public legal regulations and restrictions, the local public, public and international public.

Competent business functions: components that are in the direct marketing environment, i.e. business functions within the enterprise, which affect the ability of a marketing system that serves selected markets.

Employees: different structures personnel companies

## 6. CONCLUSION

The nature of marketing decisions requires constant monitoring of the environment to be recognized the opportunity and risk, as well as continuously analyzing companies to identify strengths and weaknesses in relation to the competition. Installation of information technology in marketing processes quickly and easily collects and transmits data from a wide market. Information systems serve as monitors for factographic data used in the decision-making, as the other hand, allow the transfer of necessary information to all users depending on their roles in the company and mutual interactions. Factographic or quantitative data transform is concretized in the information that reflects the facts, projections, trends. In this way the information system directly contributes to the competitive advantage of companies.

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## RESEARCH OF ERP IMPLEMENTATION INFLUENCE ON COMPANIES PRODUCTIVITY

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**Summary:** In this paper the role of ERP (Enterprise Resources Planning) computer programme in production of pressure casted parts for automotive industry is analysed. The monitoring of engine holder casting has been done by phases in order to record and select the scrap by the place of appearance. With that analysis it is determined that the most of the scrap is made in the phase of final machining of castings during the cutting of threads in steel sleeves casted in the holder. It is determined also that in that part of production process comes to unplanned high costs because of damaging and breaking of bore. The system of control is implemented which considers the lab research also. By the method of random choice the casted parts are taken as well as the bushings. On the holders characteristic testings are executed as well as on the sleeves after the heat treatment simulation. On the basis of the lab tests it is determined that the causes of scrap occurring lies in the choice of melting temperature. On that basis in the quality control system, the procedure for internal judgement and procedure of faulty product managing is defined. It has been pointed on the importance of whole production process monitoring for increase of financial effects through the lowering of scrap and savings on tool costs, as well as on lowering of indirect losses during the machine delay. It has been concluded that in that way it is facilitated to company management to adopt more efficient and reliable decision which are giving the possibility of competitiveness and survival on the market.

**Keywords:** Research, Influence, ERP, Efficiency of technological systems

### 1. INTRODUCTION

Faulty and for proper use unusable castings, which don't fulfill the norms or with the buyer agreed terms of delivery, represent the scrap [1,2]. In the foundry, the scrap is manifested in material, energy and labour loss. Its quality tracking and monitoring is only possible only with precisely defined quality control criteria, not only for final product but for some production operations. Regarding that the competition on market is great, product can only be sold only if it is quality, and what is very important, acceptable with price for the buyer. Scrap can have a great effect on profitability of foundry's business. Therefore it is important that its cause and cause of its appearance is eliminated as soon as possible. Highest cost is in case when scrap is occurring in final operations of cast machining.

As an example of an unpredictable increase of costs in production, engine part carriers for automobile industrie have served the purpose. During the pressure casting of Al die casting carriers, steel sleeves are suffused into them in which before that a thread is cut in. During the cutting of the threads not only the wear of the cutter is observed but also their breaking. As an effect of that, not only that the costs are rising (price of cast also) but from quality casted carriers scrap is often made. This not only increases the cost (production) but also can bring to question deadlines that is agreed terms of delivery.

Currently the market conditions in car part production are set in such way that the buyer (only) is determining required quality of final product. Usually, the rest is left to manufacturer-foundry:

- developing an adopting of metalurgic melting process,
- setting the Al alloy,
- monitoring of quality of Al alloy,
- parameter choice of pressure casting process.

Besides that, castings in early stage have to be submitted to fatigue testings and during those testings they have to endure prescribed dynamic stresses.

The goal of foundry is to achieve satisfying mechanical characteristics of castings in casted state with correct metalurgic treatment and adequate parameters of casting. Only that way a heat treatment of castings which would, as a technological process be a cost, is avoided.

With recording of the state it is noticed that the scrap is occurring in final phase of cast machining during the thread cutting into the steel sleeves during the pressure casting.

With the implementation of ERP it was necessary to open some new articles and locations in production and assign them with ID numbers. The product was divided in three groups:

- cast,
- unfinished cast,
- finished cast

The goal of implementation of ERP is monitoring the production supply (unfinished production). That is especially important because this kind of supply is very expensive:

- because of invested money,
- because of taken space,
- because of material manipulation.

## **2. PRODUCTION PROCESS IN FOUNDRY**

The implementation of ERP is analysed on example of one foundry of pressure casting. In foundry, a pressure casting equipment was installed, capacity of 250 casts per day.

Few years ago a special automatized and robotic production cell was bought which consists of: 1) Casting press; 2) Vacuum system; 3) Dosing furnace for casting; 3) Robot for extracting and cooling of cast; 4) Robot for tool coating; 5) Press for cutting of gating and feeding system; 6) Machine with two adjustable heads for thread cutting. Crucial factor in making the decision for acquiring of this equipment was the fact that in the car industry a trend of increasing of Al castings was noticed. From those castings, except small mass, anticorrosivity and good mechanical characteristics are expected. As those characteristics depend on chemical compound and parameters of casting, a logistic equipment for monitoring of casting process, transport, degaussing and casting of Al alloy is acquired. Also, additional education of responsible foreman and workers on melting and casting is performed. The goal was introduction with consequences of possible technological undiscipline and/or work disregard.

After adoption of production process and successful first series, in continuation problems started to occur during the machining of castings by cutting the threads in suffused metal sleeves. Therefore detailed tracking of whole production process was performed with the usage of ERP. It is important to lead the technological process in that way that the casting reaches satisfactory mechanical properties in casted condition, that means without additional heat treatment. In that way it is:

- directly, it is reached the fulfilment of deadline and delivery dynamics,
- indirectly, the terms of business conducting in the frame of cost-effectiveness are reached.

Required quality of finished product is determined (prescribed) by the buyer. Today's world competition is great and the product can only be sold if:

- it is quality product,
- and by price acceptable for the buyer.

On the quality of product the biggest influence has the following parameters:

- alloy casting system,
- casting tool,
- pressure machine.

To have a quality product during the production process all parameters have to be inside the limits which enable the acquirement of required dimensions and shapes as well as the determined mechanical and physico-chemical characteristics of castings. Along with the chemical compound and structure of alloy it is important to uphold the limits determined the temperature of casting alloy. Optimal temperature of alloy primary depends on procedure of pressure casting, choice of casting tool temperature, as well as the shape and dimensions of cast.

## **3. CHARACTERISTICS OF AL CARRIERS**

The looks of carriers is shown on Figure 1. In the carrier two steel sleeves are suffused in which afterwards a thread M18x1,5mm is cut in. From the carriers along with sleeves a geometric-dimensional characteristics with strict tolerance measures are required, Figure 2.

Car engine part carriers are made by pressure casting of Al-alloy marking  $\text{AlSi9Cu3(Fe)L226}$  made from secondary aluminum. Ingot is melted on  $\sim 780^\circ\text{C}$  and recommended temperature of alloy pouring into cast is between  $680$  to  $710^\circ\text{C}$ . Thereby the alloy suffuses around two steel sleeves. The casting is been cooled with oil emulsion to  $\sim 300^\circ\text{C}$  and after that on air. Needed temperature of tool and suffusing system goes from  $200$  to  $250^\circ\text{C}$ . Whole procedure is automatized. Machining of carriers by thread cutting into steel sleeves is done on the machine with two heads, the threads are cut in smoultaneously:

- savings on prep-end time,
- significantly increased productivity.

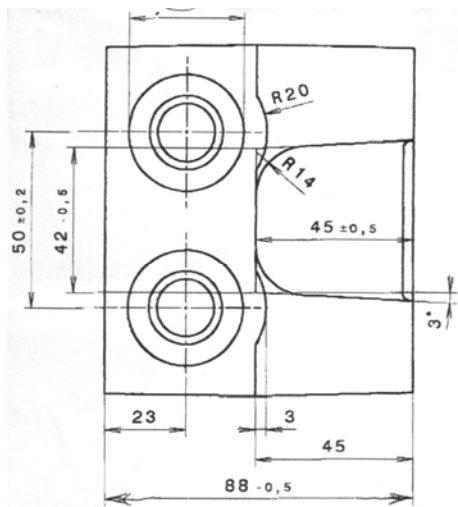


a)

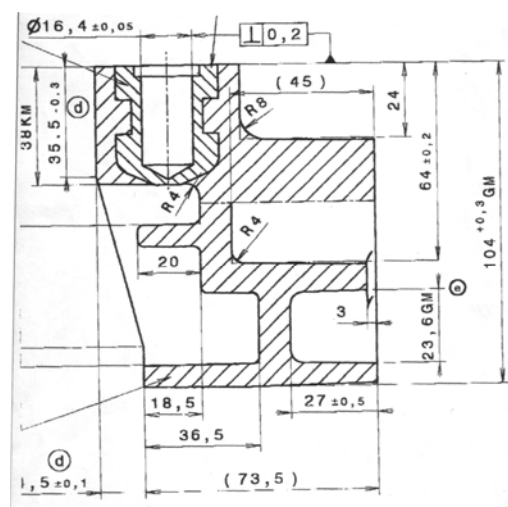


b)

**Figure 1:** Carrier of motor components die cast: a) image of front part of the carrier ;  
b) image of rear part of the carrier



a)

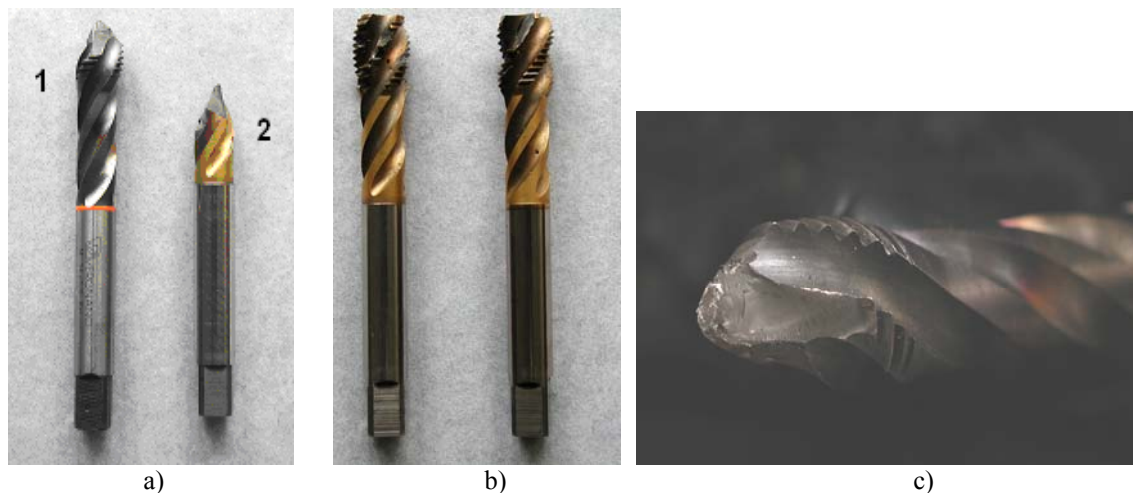


b)

**Figure 2:** Typical dimensions of Al casting: a) span of symmetry lines of sleeve bores  
b) diameter , depth and perpendicularity to sleeve symmetry lines

### 3.1. Problems with the machining of castings

It is noticed that during the cutting in the M18 thread into the sleeves, comes to breaking of cutter. Sometimes the cutter gets broken after 20 threads or its cutting edges get damaged. The image of broken and damaged cutters is shown on Figure 3. With sequence nuber 1) thread cutters with TiC protective coating is marked, and with sequence number 2) thread cutters with protective coating TiN is marked.



**Figure 3:** The appearance of damaged cutters prior to thread cutting in the sleeve:  
a) broken cutters; b) damaged cutting surfaces; c) macro looks of broken surface  
Appearance of the cracked surfaces of the thread cutter ( macro record)  
2) – Cutters with protective coating TiN; 1) Cutters with TiC protective coating

With detailed control of breaking surfaces of cutters, following was spotted:

- cutters broke under the angle of  $\sim 45^\circ$ , this points on that the condition of basic material of cutter is such that it gives satisfactory strenght, otherwise the break would be vertical,
- locally jaming of cutter basic material is spotted as a result of strainig bigger than the limit of basic material,
- some of the cutters have changed its colour (blue) as a cause of overheating before breaking.

Damaging of cutters results with direct but with indirect costs also:

- carriers with inbroken cutter represent scrap,
- broken and/or damaged cutter has to be replaced by new one,
- delay because the cutter replacement significantly increases costs and disrupts the production „rhythm“.

Here we must point out that here indirect cost because of business renown loss can be bigger than direct costs.

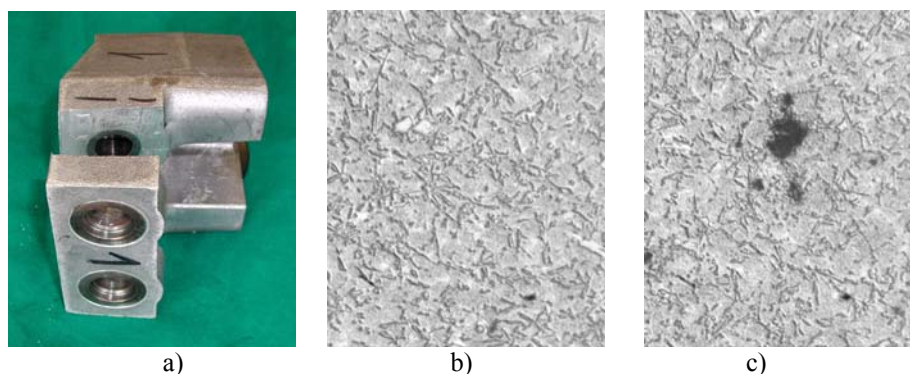
### 3.2. Lab tests on casted carriers

For needs of researching of scrap occuring causes it hes been, randomly chosen:

- 5 castings carriers before thread cutting
- 10 raw (in shipment stste) steel sleeves. Those samples are taken for chemical compound, structure, hardness and dimensional control tests in purpose of determination of sample problem occuring during the thread cutting in sleeve.

Although in foundry a regular control of chemical compound is executed, in independent lab a sample analysis taken from one of five carriers is performed. It is noticed that the chemical composition meets nearly declared for alloy AlSi9Cu3(Fe)L-226 [3].

In Figure 4 it is shown the characteristic microstructure of cross cut of Al casting. It has to be pointed out that the structure matches with the one agreed with the buyer, where are just somewhere spotted smaller faulties in shape of inner bubbles, and smaller impurity.



**Figure 4:** Typical cross section microstructure of Al carriers; Magn. 220 X , Etching: Nital + hydrogen fluor acid (HF)



Test samples were made from two Al carriers for testing with static pull test and for hardness control. It is noticed that by mechanical characteristics pressure casted Al carriers are inside the limits set for alloy AlSi9Cu3(Fe)L-226 [3].

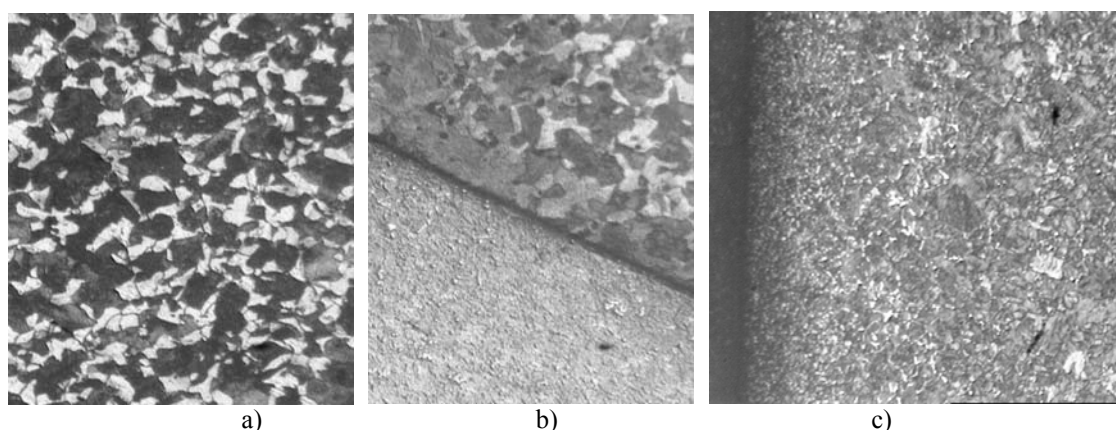
Declared material of steel sleeves is C45 (according to EN 10083-1 [5]). From the results of chemical analysis it can be noticed that the sleeves by its composition match the demands of standard.

According to [5] in annealed state of delivery this steel (C45E+A) must have hardness max 207 HB, and in normalised (C45E+S) max. 255 HB.

On suffused steel sleeves a hardness control has been done  $HB_{2/120/15}$  ( $F/D^2=30$ ), as on the forehead of casting so on the cutted casting (sample for metallographic tests).

Measured hardnesses goes from 250 to 270HB during which wasn't noticed that there is influence of place of testing on measured values.

On cutted sample of carrier (Figure 2a) metallographic tests of structure in cross section of steel sleeves has been done. The structure of sleeve middle pars (Figure 5.a) is mostly equal, pearlitic-ferritic, typical for normalized state, where no significant differences between mid and part of the edge to Al are noticed (Figure 5.b). However, along with the inner edge of sleeve a beginning of structure transformation is noticed (Figure 5.c).



**Figure 5:** Characteristic microstructure of cross section of steel sleeves; Magn. 220 x, Nital etching: a) sleeve center; b) sleeve margin (up to Al.); c) inner edge of sleeve

On all five carriers, before thread cutting, a control of cylindric bore in sleeve, paralell axis, verticalitie of centerline (on Al cast surface) and spacing between the centerlines of sleeves was made. The control was made on 3D device MERLIN 1100 TWIN STAR (Ferranti International). Diameters of sleeve holes (and cylindric) have been controled in two spots: 1.= $d_1$  in depth of 8mm; 2.= $d_2$  in depth of 25mm. Results of dimensional control are shown in Table 1.

**Table 1:** Results of 3D control of sleeves in Al carriers

Carrier No	Brace sleeve	Cylindric /0/, mm	Parallel of centerlines //, mm	Verticalitie of centerlines on casting head $\perp$ , mm	Spacing of centerlines, mm	Smallest diameter $\phi$ , mm
1	I	0,010	0,0384	0,0527	50,1621	16,4147
	II	0,0006		0,0354		16,4927
2	I	0,036	0,0214	0,0145	49,9116	16,3393
	II	0,0033		0,0227		16,3805
3	I	0,0077	0,0388	0,0107	50,0415	16,3921
	II	0,0015		0,0313		16,3446
4	I	0,0131	0,0798	0,0341	50,0260	16,3478
	II	0,0167		0,0532		16,4868
5	I	0,0127	0,0138	0,0073	50,0443	16,3885
	II	0,0070		0,0081		16,4264
Request According to documentation	min.	-	-	0,20	49,80	16,350
	max.				50,20	16,450

From the results in Table 1. is noticed the parallel, verticalitie and spacing between the centerlines axis of sleeve holes are in frame with technical documentation set dimension.

It is much significant to notice that is at five tested carriers (that is ten sleeves) on three sleeves diameter smaller then it is allowed by tolerance of minimally 16,35mm, sleeves No 2/I; No 3/II and No 4/I.

#### 4. TESTING OF RAW BRACE SLEEVES

Characteristic appearance of nonsuffused bracing sleeve is shown on Figure 6.a. On all samples of raw bracing sleeves (in delivery state) a 3D control of dimensions and hardness measuring HB<sub>2/120/15</sub> has been performed (because of small thickness of the wall a ball Ø2mm). After that, all sleeves have been submitted to short heating in electrical furnace. The goal is simulation of heat treatment conditions to which sleeves are exposed during suffusing of Al alloy. Two temperatures of sleeves heating are chosen:

- 730 °C, as higher temp. which gives „better“ casting to alloy, (sleeves No 1.1, ..., 1.5), and

- 690 °C, as temperature suitable for alloy AISi9Cu3(Fe), sleeves No 2.1, ....., 2.5.

Laboratory furnace is heated to estimated temperature (additionally a control with termosteam NiCrNi was performed and monitored on Honeywell device). Than that sleeves are put into the furnace and held there for a minute. After that sleeves are taken out and cooled in oil ~300 °C, and after that on air. After cleaning of sleeves a 3D control is performed again as well as the macro hardness HB control. Results of sleeves testing before and after simulated heat treatment are shown in Table 2.

**Table 2.** Results of dimension control and measurement of hardness of steel sleeves prior simulated heat treatment

Steel Sleeve No.	RAW SLEEVES						
	Smallest diameter $\phi$ , mm	Cylindric /0/, mm	Hardness * HB <sub>2/120/15</sub>	Steel Sleeve No.	Smallest diameter $\phi$ , mm	Cylindric /0/, mm	Hardness * HB <sub>2/120/15</sub>
1.1	16,4637	0,0059	271	2.1	16.3987	0.0089	246
1.2	16,3709	0,0126	264	2.2	16.4012	0.0108	267
1.3	16,4151	0,0143	274	2.3	16.3756	0.0119	269
1.4	16,4063	0,0094	259	2.4	16.3945	0.0064	249
1.5	16,4408	0,0132	268	2.5	16.4204	0.0125	257

- Mid value of three measurements

**Table 3.** Results of dimension control and measurement of hardness of steel sleeves after simulated heat treatment

Steel Sleeve No.	SLEEVES "ANNEALED", 730 °C			SLEEVES "ANNEALED", 690 °C			
	Smallest diameter $\phi$ , mm	Cylindric /0/, mm	Hardness * HB <sub>2/120/15</sub>	Steel Sleeve No	Smallest diameter $\phi$ , mm	Cylindric /0/, mm	Hardness * HB <sub>2/120/15</sub>
1.1	16,3891	0,0165	286	2.1	16.4067	0,0158	258
1.2	16,3468	0,0089	273	2.2	16.3784	0,0097	270
1.3	16,3472	0,0154	269	2.3	16.3532	0,0164	281
1.4	16,3406	0,0178	291	2.4	16.3899	0,0083	235
1.5	16,3495	0,01108	274	2.5	16.3986	0,0119	246

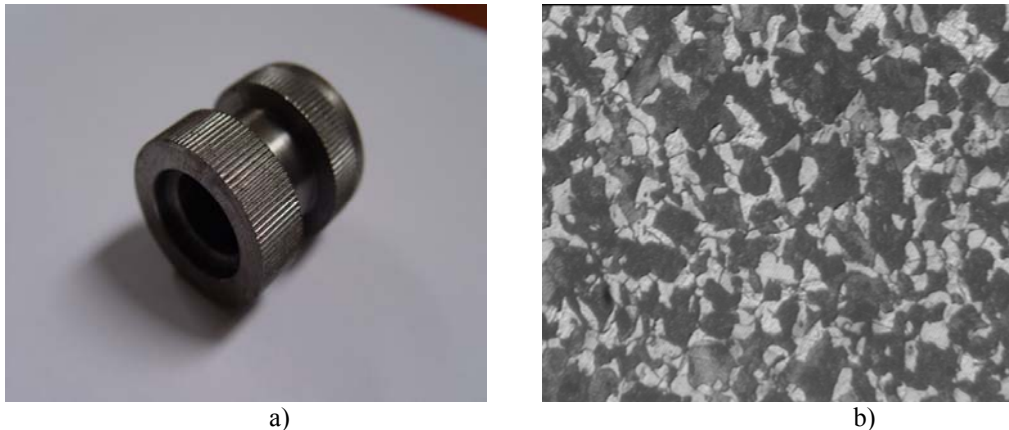
-mid value of three measurements

From the results of dimensional control can be noticed that after a short annealing on 730 °C at four of 5 brace sleeves came to narrowing of inner diameter and at other two to widening (measured differences goes to max. 0,008mm). It has to be pointed out that this increasing lies inside the limits of measured cylindric of holes. There weren't any significant changes of surface hardening spotted.

With the control of sleeves annealed on 690 °C no changes of diameter value smaller than allowed by standard were spotted.

Analysis of raw sleeves cross section microstructure (in delivery state) has been performed after a simulated heat treatment. In both cases structure is typically pearlitic-ferritic, relatively mid grain, as well as in sleeves in Al castings. No significant differences between edge and middle of cross section are spotted, Figure 6.b.





**Figure 6:** Clamp sleeve: a) appearance in as delivered condition; b) characteristic microstructure of the cross section after annealed. Magn. 220 x. Nital etching

#### 4. RESULT ANALYSIS OF TESTING

It has to be noticed that no significant change of microstructure cross section of steel sleeves in raw (delivery state) was spotted even after simulated heat treatment in electrochamber furnace with short term annealing in period of 1'. Changes are spotted in very narrow edge layer of sleeves annealed on 730 °C (Table 3). Hardness at suffused, raw and in furnace shortly treated sleeves goes in range from 230 to 270 HB.

Results of 3D control of Al carriers point on following:

- perpendicularity of centerline in sleeves on head at all 5 castings lies in frame of allowed tolerances,
- spacing of centerline holes in all 5 sleeves lies in frame of allowed deviation,
- measured diameter of sleeve hole at 3 of 5 shortly annealed sleeves is smaller than minimally allowed for thread cutting M 18x1,5 mm.

From the insight in looks of delivered cutters (Figure 3) it can be noticed that at some of them came to breaking (cutters on Figure 3.a) and that at others „only“ a blade wear is noticed (cutters in Figure 3.b). It is important to point out the change in colour at some of cutters (went blue, Figure 3.c) during the overheating caused by overloading with thread cutting.

Thereby following can be assumed:

- regarding that is with the recording on 3D device established satisfying perpendicularity of centerline on brace sleeves head it can not be expected that the damaging of cutter is an effect of their deviation from the holes coaxiality,
  - regarding on that the cutters with the (surface) layer TiN and TiC are on HSS steel, and at either no breaking and damaging by wear is spotted, type of surface layer does not significantly act on breaking appearance.
- Great part of cutters damaging by blade wear reason lies in fact that here is word about imperishable hole (brace sleeve) so the problem with withdrawal of chip incurred during the thread cutting comes to light. However, regarding the very hard layer (TiN i TiC) on HSS steel the hardness of bracing sleeves shouldn't represent major reason for cutter breaking (which in fact causes scrap appearance even from well casted Al carriers).

Cutter blade wear is in certain measure cause of problem of chip incurring. At those brace sleeves which had smaller inner diameter than minimally allowed the cause of breaking lies in overloadifng (straining bigger than flow limit) because cutter does not only penetrates in sleeves with cutting but it also makes the thread by „rolling“.

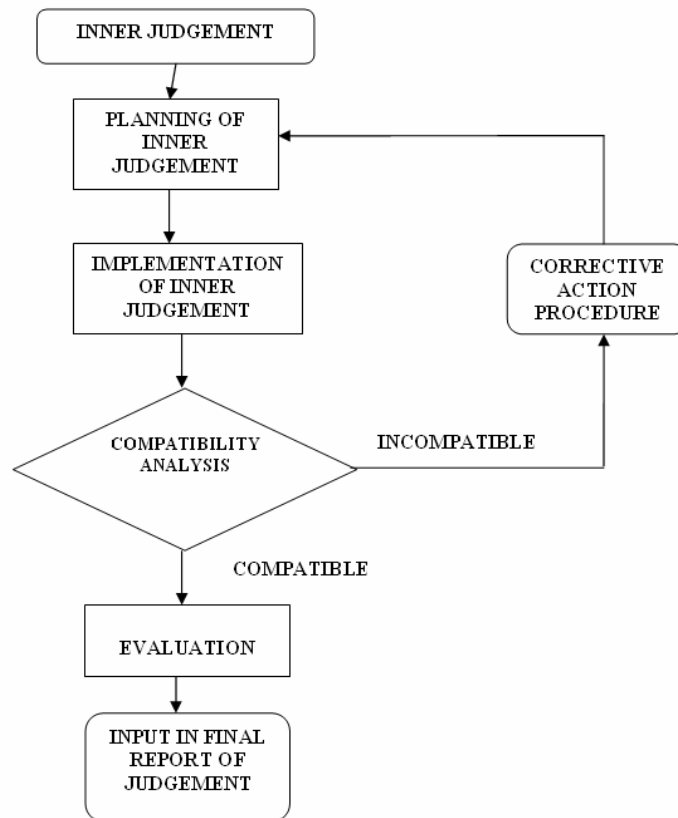
#### 5. SYSTEM IMPROVEMENT

Standard EN:ISO 9001:2002 defines the conditions for measuring, analysis and process improvement. It has to result with cost management and to develop complete system of quality managing.

On the base of discoveries gotten from this research, the sequence of **inside judgement** procedures is defined, schematic in Figure 7. On the basis of annual planning and predicted range of evaluation, a *Control list of internal independen tquality judgement* is made.

This list contains:

- course of evaluating activities,
- range of activities in work shop (deptment) evaluating,
- personel in charge for implementation of work shop evaluation.

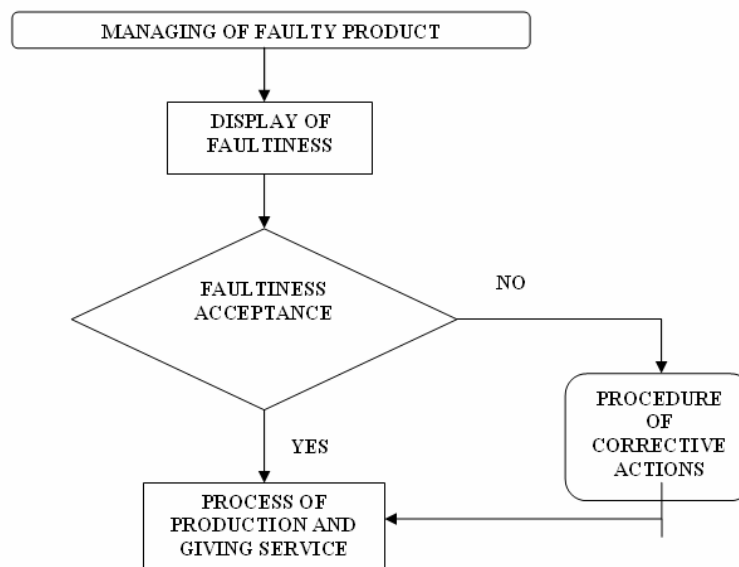


**Schematic 7:** Display of procedure for inner judgement

According to quality definition [1] all products which in any way don't meet the set standards are considered faulty, that is they represent scrap. It is important to achieve the following:

- as less quantity of castings that are faulty, that is, which does not meet specified standards, and
- that the buyer doesn't get faulty product.

On the base of informations about monitoring, a *Report of faulty* is made. Authorised person performs its analysis. On the base of analysis results a cause is determined, so a decision about possible need and implementation of corrective actions. The procedure of managing of faulty product is displayed in schematic on Figure 8.



**Figure 8:** Schematic display of faulty product managing

## 6. CONCLUSION

With the implementation of ERP and in purpose of production process with the help of computerised process, scrap is recorded in complete, by the phases where it occurs. It in the end signalises on the origin of the problem and directs on corrective preventive actions in purpose of reducing and/or elimination of this problem. To this results came with the help of lab results, which in this case have shown as effective in precise locating of technological operation which is the main cause of faulty appearance. Besides this, there is a line of other advantages of this kind of production process monitoring:

- contribution to complete effectiveness,
- quickening of information flow,
- increasing of processing accuracy,
- increasing of possibilities for efficient and reliable management decisions, and
- increasing of financial effects.

All this in the end provides competitiveness and survival on the market. During which is very important that the computer programme adopts to specifics which characterise every production phase of modern foundry. Only in that way its business can be properly monitored and transparent. Because in today's terms of business most of the companies doesn't have any possibilities for any maneuvering space regarding on that the market is setting their outgoing prices, and on prices of raw material and energy sources they can not influence. Only segment on which they can influence is their own costs. It means that they have to be monitored. But only monitoring is not enough. To keep the production costs in profit guarantee frames, they have to be constantly compared with planned values. Therefore basic task of ERP

( Enterprise resource planning ) has to be in function of setting up of regulative planning and managing circle and monitoring of production process.

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## THE ROLE OF ACCOUNTING AND AUDITING IN MANAGING AN ENTERPRISE

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**Summary:** *In economic conditions of the market, the issues of business management and development is of extreme importance because the market, as a very objective policy instrument, does not tolerate managing mistakes and every possible error has 'a price' an enterprise has to pay. Therefore, it is very important to provide a top quality information basis, which is, in the first place, provided by an accounting department. The basic task of the accounting is to collect, arrange and present the information to the interested parties in form of accounting or financial reports. In that sense, objectivity and realistic approach of the reports is implied. So far, the main position in the accounting system has been occupied by the legal provisions. Accounting has been reduced to mere business events recorder, and its information potential, in terms of management improvement, has been almost completely neglected. Orientation towards the economy market demands the change of the accounting system in terms of quality. The accounting system must be able to provide such financial reports which will objectively and realistically reflect the state of property, capital and obligations, as well as the achieved business result. When highlighting the objectivity and realism of the financial reports, the institution of auditing, whose main task is to assess those very qualities of the financial reports, implicitly has to be taken into consideration. One of the most important criteria for evaluation of the mentioned qualities are accounting principles and standards. Consequently, the aim of this paper is to emphasize the need to look into the issues of the accounting standards, financial reports and auditing as a whole.*

**Key words:** *enterprise management; economic conditions of the market; the existence of a business; accounting and auditing; accounting and auditing standards*

### 1. INTRODUCTION

An enterprise is normally considered a system which presents a fraction, that is, a subsystem of a wider environment. The system has its boundaries and everything outside those boundaries is its environment. The environment effects the functioning of the system and vice-versa. That influence is achieved by the exchange of the material, energy and information. In this matter it is important to stress that an enterprise can be viewed as a subsystem of the economic system of a country. Besides that, if we acknowledge a very often quoted statement by which "the world becomes a global village" [7], then it is possible to consider a business a subsystem of the world economics.

The term enterprise normally implies an independent business organization which performs an economic activity with the aim to make money, that is, to earn a certain surplus that exceeds the business outcomes. The extent of that surplus reflects the success of the enterprise. Hence, it is important to underline that an enterprise is the basic unit of *the economic system*, and therefore, the most valuable subsystem of the whole. Additionally, it has to be pointed out that the economic system is a subsystem of the social system and is interdependent with the other social subsystems: political, manufacturing and technical, sociocultural and legal. *The political system* determined the basic institutions of the economic system and the social relations emerging from the structures in power. The rules of conduct of political and economic systems are defined by *the legal system*. *The manufacturing and the technical systems* enclose the issues of technology, science, research, professional education and all other matters in question which define manufacturing and technical machinery. *Sociocultural system* encompasses everything that actuates human behavior (e.g. tradition, culture, history, etc.), and as we know, human demeanor effects the functioning of all the segments of the entire social system.

The primary long-term goal of an enterprise is to maximize the profit. Realization of this goal is feasible if an

enterprise is permanently being adjusted to the changes in its surroundings because it is the basis of its growth and development. Without the enterprise's adaptation its growth and development becomes threatened, and without its growth and development its efficiency is jeopardized which naturally brings its very survival into question. In order for a business to make the long-term profits, it is necessary that it has an excellent management. The condition for excellence in managing an enterprise is the existence of a well organized accounting and auditing function which generates objective and timely information necessary for making business decisions. Therefore, this paper points to the value of accounting and auditing in managing an enterprise in contemporary global market circumstances.

## 2. MANAGING AN ENTERPRISE IN ECONOMIC CONDITIONS OF THE MARKET

An enterprise, as a business system can be said to be complex, dynamic, stochastic, open and organizational system and that it belongs to the sphere of the social systems [12]. When we say that a business is a compound structure it most often means that it is comprised of numerous elements – subsystems. Nevertheless, we need to point to the fact that its complexity is not conditioned by the number of its elements only. It can be derived from other elements (e.g. alterability of the structure). It means that a system with a smaller number of elements could be more complex than that with a bigger number of elements. Dynamics signifies that an enterprise is constantly changing and growing, for it is, as it has already been said, the basis of survival. Stochastic process suggests that there is a lot of uncertainty in doing business, which makes it quite hard to run a system. This characteristic of an enterprise as a system is particularly emphasized in contemporary conditions of the market. An enterprise is an open system as well, which implies that it functions in a certain environment and that environment influences the system and vice-versa. Furthermore, a business is an organizational system.

The input of a business as a system is most often the machines, raw material, financial means, personnel, energy, information, and so on, and the output is products, services, waste, financial results, information and so on. Inside a business the process of transforming the input into output is taking place, which is achieved by the functioning of the elements. That functioning of the elements has to be directed towards the accomplishment of the enterprise's goal. In case of deviation from the established goal or some changes of the surroundings, a return connection is activated by which an enterprise is being adjusted to the new terms. *In view of this, the return connection is a running instrument by which a goal of an enterprise is achieved, and the goal is survival which is only possible if the business is developing.*

If an enterprise as a system does not fit into its environment, then we have the case of mismanagement or failure of the business, in which context settlement is claimed. However, the system, as a rule, is by the return connection being adjusted to the demands of the environment (rarely does a system change its environment, especially in a short time). If an enterprise fails, some of the following actions are taken **1)** the change of running policy, organization or running methods, **2)** management replacement, **3)** owner replacement, and **4)** claim settlement. As an enterprise exists within the surroundings its growth is not predetermined. Consequently, the business risk is one of the basic traits of an enterprise. Thus it is important to point out fundamental systemic principles of an enterprise:

- autonomy principle – an enterprise is independent in determining its activity,
- principle that states that only owners of the invested capital may directly or indirectly make decision,
- earning principle with maximizing the profit,
- the principle of risk taking in the market and with the competition.

An enterprise as a system is the underlying unit - subsystem of the economic system and the whole social system. Therefore, the economic system is the very environment into which the enterprise has to fit by means of its results. In case of inadequacy in the process of fitting in, the return connection is activated, which signifies the basic managing instrument and by which the correction of input and output is made as well as the process of transforming of input into output, in order to ensure adequate adjustment to the environment together with growth and survival of an enterprise in the market. The return connection implies the existence of supervision, that is, control over the enterprise's activities.

From the aspect of financial view of doing the business, one question arises: "What are the fundamental criteria by which the quality of an enterprise can be judged." The answer to that question is rather simple if we know that every potential investor will invest their capital into a project under the two following conditions: **(1)** safety of the invested capital (business safety) and **(2)** success, that is, the efficacy of business measured in profitability (satisfactory level of the return on the invested capital). As a result, if an enterprise is to fit in, do well and exist, it needs to be managed. In the process, it is necessary to recognize the limits emerging from safety and efficacy of the business. *Therefore, it can be concluded that safety and efficacy are becoming the fundamental management criteria by which growth and existence of an enterprise are ensured.* There are many management definitions from which it can be concluded that it is *the process of deliberate aiming toward certain goals* which are in function of a general goal and that is *the development* of business, by which its *survival* in the economic

environment is ensured. The goals of a business are, in a rule, viewed within the context of the long-term orientation of the business. However, in order to accomplish the goals, it is necessary to define *short-term tasks*, and to establish the desired *results* by which the long-term goals are achieved (the results are “the means” for goal accomplishing). Managing process implies creating organizational conditions in terms of effective decision implementation for reaching the established goals and results. It also implies a continuing control over the targeted aims and results realization. Accordingly, the whole managing process can be broken down into four following sub processes:

- **planning** – determination of goals and results by which the goals are to be achieved,
- **decision making** – a part of managing oriented towards the short time and by which the desired results are precisely established,
- **managing** by which the efficiency of the decision implementation is ensured, and
- **control** over achieving the established results and goals.

Therefore, the managing process is a function comprised out of four variables synergistically operating in one direction:  $M = f(P, D, A, C)$  the acronym being: M – managing, P – planning, D – decision implementation, A – administration and C – control.

The managing process, from its practical side, is effectuated by successive decision making and the control over the decision implementation. Consequently, it is necessary to point out that a business decision is determined by an intention or by a desired goal, available information, and deliberation of the present state of the growth and its future condition. In short:

$$\text{DECISION} = \text{INTENTION} + \text{INFORMATION} + \text{DELIBERATION}$$

Thus the managing process (decision making is managing in a narrower sense) is inconceivable without the information. Nevertheless, the decision making can have two forms: **1) irrational process** – the decisions are based on intuition, experience of a feeling, and **2) rational process** – the decisions are based on facts, knowledge, and information. In conditions in which the market does not tolerate mistakes and in which every possible mistake has its “price”, it is very clear that managing should be based on the latter decision making option.

### 3. THE OBJECTIVES OF AN ENTERPRISE

An enterprise is an economic-legal entity, which at its disposal has given economic activities with the objective to maximize the profit for a longer period of time. We often wonder - why long-term, why not short-term profit maximization ?

It is the truth that an enterprise is constantly making an effort to maximize the profit, but sometimes, due to negative endogenous and exogenous influences, it fails and has losses. In such circumstances, an enterprise naturally, does not maximize the profit – it actually strives towards the recovery and it is only then that it tries to achieve the maximization. Cutting the losses is the primary goal because the survival of the whole enterprise depends on it. When an enterprise is losing it first starts to lose its own capital, and then it loses someone else’s (borrowed) capital, after which the over indebtedness comes followed by bankruptcy, which is actually a compulsory settlement. Nobody wants to give loans to such an enterprise because it is already a lost investment, and since such an enterprise has no means to stay in business, its discontinuation is inevitable. The very discontinuation effects its environment very negatively: **1)** the owners lose either all or at best a part of their property (capital), **2)** creditors lose a part of the invested property, **3)** the employees become unemployed, **4)** the state loses a part of its income

This is where the interest groups come in – they are making efforts to keep an enterprise in business during which process, certain groups either give up or minimize their rights. Thus for example:

- the owners invest all over again to either make up for the losses or to accept that the losses go at their expense,
- the creditors accept to cover a part of the losses at the expense of their demands, or they prolong the reclamation or even convert a portion of their demands into capital and thus become the co owners of the enterprise,
- the employees accept the reduction of the work force and the salary if too ,
- the state helps an enterprise out of the lose zone, by monetary relaxations or even some donations.

Even when the enterprise stops losing it does not mean it has recovered, for it is still going downhill if it does not have the means of payment, that is, when its long-term bound property, increased by the loss, is bigger than the capital increased by the long-term reservations and obligations. In such conditions, the primary goal of the enterprise is to declare *financial recovery* which will provide the enterprise with the means of payment. And then again, the interest groups are activated:

- the owners denounce charging their deposit in net profit (dividends) or they postpone it, decrease the deposit

- in net profit or they accept the additional investments,
- creditors reprogram their demands or convert them into capital,
- the employees give up their right to salary raise, determined by the collective agreement,
- the state, often, agrees to reduce the monetary duties.

Therefore, the primary goal of an enterprise in a long period is to maximize the profit, because without accomplishing that goal: **(1)** there is no growth and development of an enterprise and if there is no growth and development its efficiency is jeopardized as well as its survival, **(2)** it is not possible to attract investors since other enterprises provide more income on the invested capital, and **(3)** it is not possible to sustain or increase those components that are free, such as emission premium, reserve (mandatory and statutory) capital and retained (undistributed) earnings, which have a positive repercussion to the financial result as well.

It is indisputable that the top goal of an enterprise in a long period is maximizing the profit, because it cannot survive without it since it is based on continuance. However, in crisis, the short-term goals prevail over the long-term ones – exiting the loss zone and enabling the enterprise's means of payment – the accomplishment of which is a condition for achieving the enterprise's top goal – is maximizing the profit in a long period.

#### 4. ACCOUNTING AND ITS ROLE IN MANAGING AN ENTERPRISE

The fundamental reason for the very existence of the accounting is the preparation of adequate managing information. The term “information” can be defined in different ways. It can be said that the information implies “processed data presented in such a form that makes them suitable for a receiver and which has significant value in current or future activities and decisions” [1]. In accordance with the above it can be concluded that during processing, the data is being transformed into information (see figure 01).



**Figure 1:** Transformation of data into information

There is interdependence between the information and decision making (managing). Decisions are made based on information. Certain changes in an enterprise or its environment take place by decision realization. Those changes result in new sets of information based on which new business decisions are made and that process is constant. It is implied that all information contain a true and complete message, and that it is clear and understandable to the information users. Besides that, it is implied that information has to meet the needs of the users – it has to reduce uncertainty (entropy) in the process of the decision making.

Information is a peculiar resource. It emerges from the fact that its usage cannot wear it out and can be used all over again. Thus, using the information does not diminish its value (unless it becomes outdated in the meantime). Its value is most often determined in the context of business decision making in which the following attitude can be pointed out: “if a new piece of information affects decision making its value represents the difference between the value of the outcome of the old decision and the new one, minus gaining the new piece of information expenses. If the new piece of information does not cause different decisions, its value is zero” [1]. The information needed for managing can be acquired from various sources which are most usually the internal resources (e.g. accounting records) and the external ones (e.g. statistics institute, economy association).

The data, regardless of where they come from, is processed in informational managing system of the company. Well organized informational managing system needs to be able to give answers to the following questions [10]:

- **What** kind of information is needed,
- **When** the information is needed,
- **Who** needs it,
- **Where** is it needed,
- **Why** is it needed and
- **How** much does it cost.

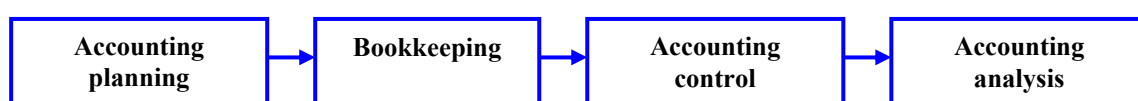
This list of questions is often referred to as “5W and 1H” which is derived from the capital letters of the questions.

When we talk about the information in the managing process, it is certain that the financial and accounting ones are occupying the primary spot. Thus the significance of accounting and accounting information is spotted only in the context of business management. It is usually emphasized that the accounting is the most significant fraction of the whole informational system because most of the information needed in the decision making process, emerges from accounting. Consequently accounting is the service – service function in managing

process. It basically processes and studies “raw data” and turns it into the information needed for management. There are many definitions of accounting. It can be defined as “ the skill of recording, distributing, brief displaying and interpreting of the business occurrences in money terms which are at least partially of the financial nature and interpretation of the results emerging from that” [4]. It can be said that accounting is related to the three following characteristics [6]:

- collecting, processing and presenting the accounting information,
- the information are related to the company’s business and
- they are delivered to the interested parties.

In theory and practice we find different opinions about the definition of accounting – of what it encloses. Some authors identify accounting with bookkeeping and claim that etymology is the only difference between them, since bookkeeping means checking the books and accounting means checking the account, which is basically the same. There is another standpoint which takes the function of accounting more comprehensively. According to this concept, bookkeeping is a part of accounting, and accounting represents “integral record system, in which planning, recording, controlling and analyzing of the state and the changes of means and businesses in the economic organizations are being very carefully performed and as well as collecting the accounting information” [4]. This vision of accounting is shown in figure 02.



**Figure 2:** The structure of accounting

*Accounting planning* is a special type of records about the future events. What makes it different from the rest of the planned records is money term registration of the state and changes and not all of them but those which are later going to be the subject of bookkeeping records. Various estimates, preliminary calculations of the planned procurements, the prices of the products, selling prices and so on are of significant value. The most significant “products” of the planning process are synthesized statements such as the planned balance sheets and planned closing balance (accounts of profit and loss).

*Bookkeeping* is the most important part of accounting. The subject of these records is the business events that already took place, those that bring about the change of the economic categories (assets, sources of the assets, income, outcome), which can be registered in money and which are documented. It means that the bookkeeping is the records oriented towards the past, and therefore can be said to record the history of a company. As estimates emerge as the result of accounting planning, various statements of accounts are considered the results of bookkeeping (statement of accounts of procurement, statement of accounts of production, of realization, and so on). As accounting planning precedes bookkeeping, bookkeeping precedes the accounting control and analysis as a process of business researching.

*Accounting control* makes sure that accounting data and information emerging from the planning process and bookkeeping itself, is reliable and accurate. Consequently, the controlling sphere is directed towards document control (of formal, computational, and essential accuracy), the control of the finalized statements of accounts and filed entries, as well as control of outgoing accounting information. The accounting control part is executed by the accounting personnel, by, for example, checking and synchronizing the conditions in synthetic and analytic records, that has to be identical, by comparing corresponding bank accounts, and so on. That way, the accuracy control of the filed entries is achieved, since only the tested and reliable data and information can be dependable basis for further business process study, which means for accounting analysis.

*The accounting analysis* is attached to the previous stages of accounting scope. Based on tested data it confirms the connection of the realized business activities recorded in the records and the planned ones, that is, between the accounting preliminaries and entries. It especially focuses on detecting the deviations, explains their causes and consequences, suggests correctional measures and thus enables more realistic future planning. In this sense, the accounting analysis fulfils the informational basis, required for making business decisions.

*The accounting informing* is a part of the whole informational system and its objective is to present the results of the whole accounting – accounting planning, control, analysis and bookkeeping – to the interested users (external or internal). The manner of informing can be written or oral. The financial reports present the most significant written one: balance sheets, closing balance (accounts of profit and loss), reports on changes of capital and reports on money streams, and notes on these reports. Besides these synthesized forms, some other pieces of information are needed, such as chargeability of the demands, realized business, bank accounts readings, obligations towards suppliers, matured annuities. Such not standardized reports, needed by the management, are provided by accounting department as well.

Along with this traditional concept of the accounting, there is another one too – the modern, pragmatic concept



which places the focus of its observation on the users of information. According to this concept all the processes are useful only if they meet the needs of users. Therefore, accounting is only a service function in the managing process because it provides information necessary for decision making and running. That is why the accounting is very often referred to language of decision making or "language of business". As doctors and engineers use a specific language so do the accountants or managers, and they do not seem to have any difficulty understanding each other in the process. Every good manager knows the basic accounting categories and accounting logic. Accounting technique is used by bookkeepers, but managers use accounting logic, which is incorporated into their interpreting and thinking process.

Accounting is extremely important since it encompasses and controls the state of a company's assets, sources of those assets, incomes, outcomes and financial results, and hence enables the work control and management. Equally, the existence of adequate records enables duly performance of a company's obligations, deviations detection, making correctional decisions, and etc. business transactions, or business events are subject of the accounting (bookkeeping) records. To improve the understanding of the accounting logic we have to be acquainted with the accounting process, among other things.

## 5. ACCOUNTING PROCESS AS A PART OF THE MANAGING PROCESS

Every data processing starts with a common scheme which contains several phases. Basically it is a data processing in which input data is transformed into output information. it is the same with the accounting process. If we direct our attention to the most important segment of accounting (bookkeeping) the data processing can be shown through several stages (figure 03).

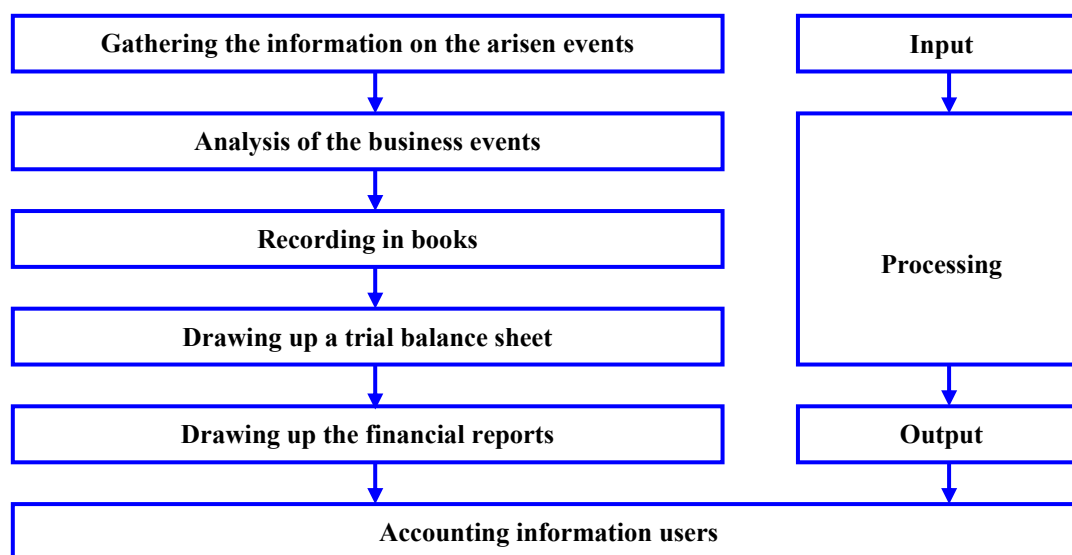
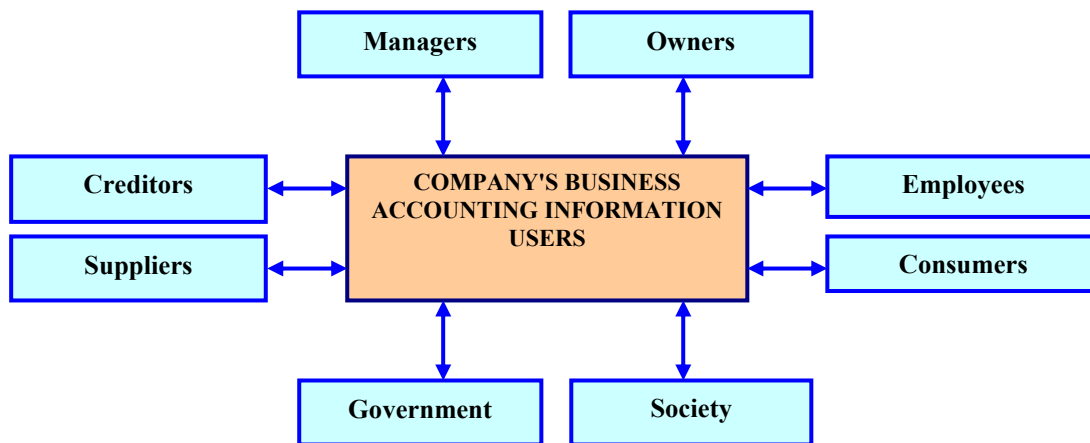


Figure 3: Accounting process [5]

*1) First phase* of the data processing is comprised of gathering the data emerging from the arisen business events. Why arisen? Because the subject of the bookkeeping records are only the business events that already took place, while the events that are yet to happen are subject of various planning records. Business transactions can arise within a company itself, between a company and its environment or within the environment and they concern the company's business. As the confirmation of the arisen business transaction a certain document is issued, that is, a writing, stating what happened, when it happened, how it affected the business change, and etc.<sup>1</sup> Bookkeeping documents (writings) serve as the basis for collecting data about the arisen events. Therefore, it is important that they are issued where the event arose, immediately after it took place, and to contain all the information necessary for further processing and users' utilization. In other words, depending on the users' needs and interests, the manner of collecting and processing data into information should be adjusted ( the most common users of the accounting information are shown in figure 04). One piece of information does not have the same value for different users and different levels of decision making.

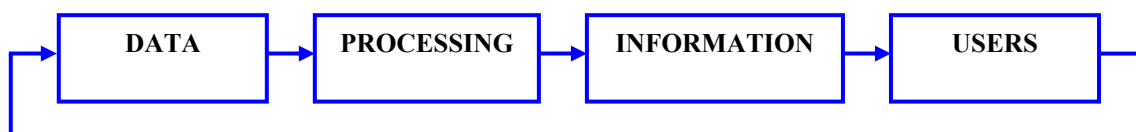
<sup>1</sup> Every document has to contain the minimum of data: **1)** the name of the company issuing the document, **2)** the title, the sign, and the number **3)** issuing date, **4)** brief description of the economic change, **5)** value of the change, **6)** signatures of the persons in authority, and other relevant information.



**Figure 4:** Users of accounting information

*Owners of the company* as well as the other investors (current and potential) are interested in such information that provides insight into the state of the company and safety of the investment. The owners, that is, stock holders of the company are interested in profit amount, dividend per share. Other investors into securities (such as bonds) are interested in the information relevant for identification of the investing risk, for identification of rate of return – profitability, etc. they are also interested in some information not concerning quantity (ability of the manager) because they base their decisions about sustaining, increasing or decreasing of the capital in a company, on both. *Employees* are interested in adequate payment and the stability of their employment. Furthermore, they are interested in the information concerning certain benefits, awards, employers' liability insurance, contributory insurance, etc. *Consumers* are interested in the quality of the products and the continuity of the offer. *Society* is interested in company's contribution to the economic policy, by for instance employment of the locals, prosperity of a certain activity, environmental protection, etc. How and how much the above is achieved is evident through various accounting and other reports. *Government* and its institutions consider those sets of information which concern the implementation of the tax policy, which is above all the profit amount, and the information serving as the basis for company's accounting and statistics. *Suppliers* are interested in the company's solvency – its ability of meeting its commitments at maturity. When concluding long-term deeds of sale, they also consider the financial solvency of the given company. „The duty of management is planning and controlling of the activities, which need to be executed in order to make profits" [3].

Therefore, the accounting system has to be determined and set in accordance with the demands of final users, which stresses the significance of the return bond between input and output of the accounting and informational system (figure 5). The quality of the outgoing accounting information significantly depends on the applied accounting policies. Further reading [11].



**Figure 5:** Accounting and informational system

2) After gathering the data, **the second phase** of the accounting process follows, which is comprised of business events analysis, which emerge from almost all business phases. There are a few: concluding an acquiring contract, acquiring the material, salaries payout, the supplier payout, material consumption, fee payout, tax account, final product sale, conclusion of the new acquiring contract, etc. Of course, the whole business cannot be recorded in accounting (bookkeeping) records, thus some of these events will be recorded elsewhere as well. *What is the difference, and what is inherent to the transactions recorded in books?* The bookkeeping records have very strict terms when selecting the business events to record. Basically, there are four terms a business event has to meet to be the subject of the bookkeeping records. Those are the following:

- that it really took place – that it is history,
- that it can be registered in value,
- that it changes the current state of property, sources of property, incomes or outcomes, and
- that there is a valid document, by which the change can be confirmed (notorious bookkeeping rule: no document no booking).

All business changes – transactions will be recorded in one of the economic records, but only those meeting the

requirements will be recorded in bookkeeping.

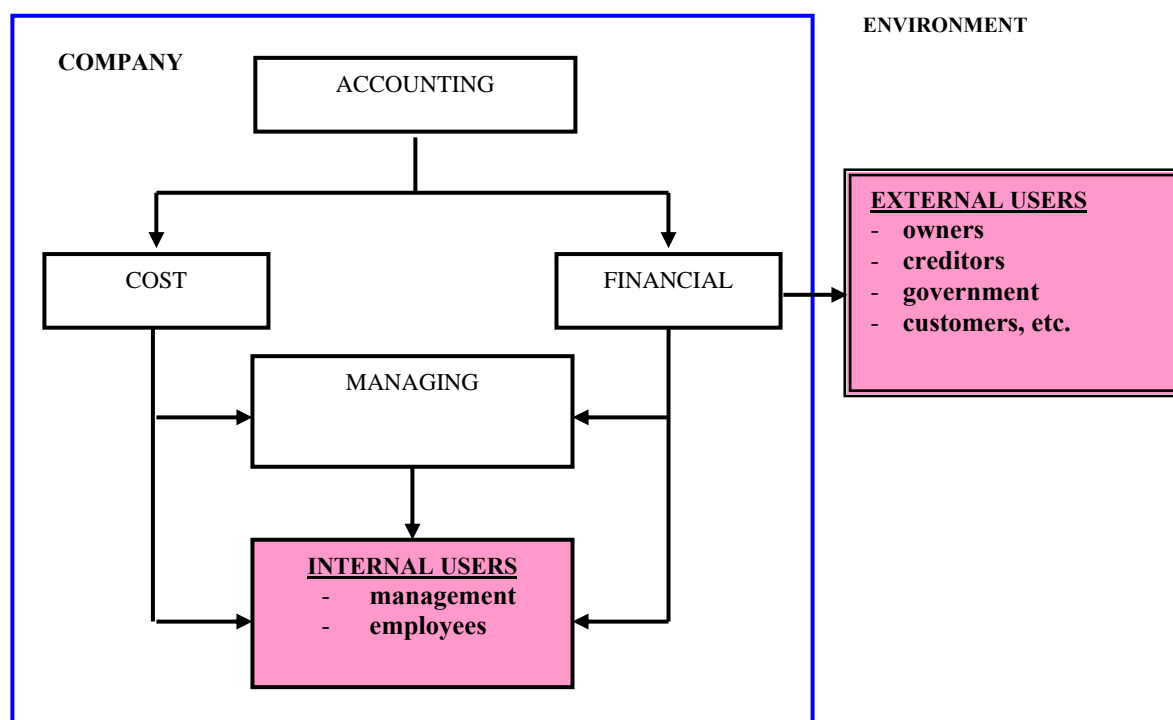
3) After establishing that a certain business event is also the bookkeeping one, recording in business books follows. Fundamental business books are the journal and the general ledger. *Journal* is the basic business book in which the events are recorded in their chronologically order.

*General ledger* presents chronological, systemized and comprehensive records. That means that there are, for every form of assets, resources of assets, incomes and outcomes, separate records (account), which also chronologically record changes related to a given economic category. Since these both record the same business events it is natural that they show the identical data about them. The booking accuracy, the regularity of the data and the outgoing information is therefore easier to control.

4) At the end of a certain accounting period – just before composing fundamental financial reports, the accuracy of the data, on which the reports are based, has to be examined. For this reason the trial balance (trial balance sheet) is composed. It represents the recapitulation of the total state and turnover of all the accounts of the general ledger. The form of the trial balance is not standardized, nor is the time of its composition, but every good businessman will compose it not only annually, as imposed by the law, but much more often (e.g. monthly), since any possible mistake is easier to detect and remove like that.

5) After tuning all the records, after determining the correctness of all the data, the final phase of the accounting process starts and it is related to making the financial reports – balance sheet, income sheet, (gain and loss accounts), reports on cash flow and notes on these records.

Financial reports are “final products” of financial accounting. However, besides the financial accounting cost accounting and managing accounting could be mentioned. From the aspect of users, accounting information is directed towards external and internal users. Correlation of various types of accounting and their focus on users are shown in figure 06.

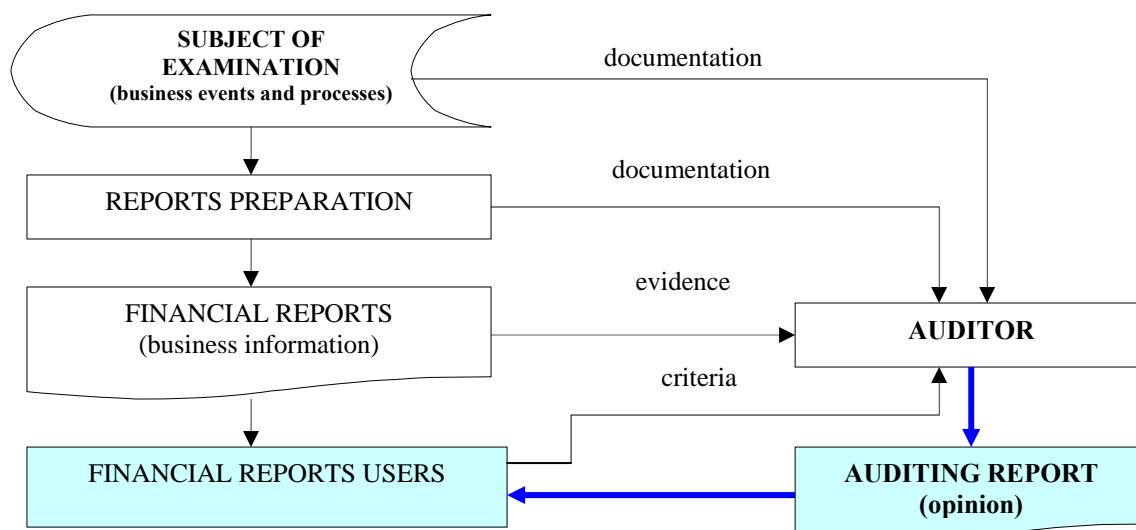


**Figure 6:** Correlation of accounting and the users of the accounting information

## 6. AUDIT AND ITS ROLE IN MANAGING AN ENTERPRISE

Regardless of the type of the users, objectivity and reality of the accounting information is implied. *By emphasizing objectivity and reality the issue of auditing comes into consideration – the issue of auditing as one of the most significant precondition for the quality of the accounting information.* In developed western countries the existence of auditing is one of the most important prerequisites of a company’s survival. In this context, the following slogan is commonly accented: “Only in God I believe, everything else I check.” Naturally, this is not to be misinterpreted as mistrust towards various business subjects, but as a normal and usual process which in trade economy has an important role. Auditors examine all kinds of businesses (for example banks, manufacturing and trading enterprises, service industry) and nongovernment organizations (faculties, unions). The role of auditing is comprised of providing valid information, needed in the process of business decision

making, that is, in the managing process. In relation to that, the following attitude is expressed: "Deciding whether to sell or to buy securities, lend money, approve commercial credit, conclude new agreements with the employees, and all other business decisions, depends the most on financial information. Decision makers (users of the financial information) need reliable information, and the accountants (hereby auditors, because the American practice encompasses auditors within the term accountant) help them satisfy that need" [8]. Accordingly, when reliability of auditing is considered it actually means reliability of the financial and accounting information. Correlation of accounting information and the auditor's role is shown in figure 07.



**Figure 7:** Correlation of accounting information and the auditor's role

From the image we can see that auditor examines economic changes and processes, the manner of preparation of the accounting reports and the very accounting reports, in the way to form an opinion based on company's business documentation and certain criteria. Accounting or financial reports are examined by auditing, from the aspect of their reality and objectivity, and "*real*" means genuine while "*objective*" means unbiased, just.

There are authors emphasizing that accounting distorts the real state of business – the real story is different from the accounting one. Similarly, P. Drucker, one of the famous theoreticians of organization and management, says: "If a new company presents earnings, it is fictional: it is an accounting item for closing account"[2]. However, if an auditor does his job properly, the "real story" will be very close to the "accounting story", and the presented earnings will not be fictional item, but the objective and realistic amount of the actual financial result. In modern economic conditions, characterized, among other things, by existence of the multinational corporation, the role of auditing is expanding. Due to the corporation size, managing information cannot be acquired "from the horses mouth", but through the whole range of mediators. „This fact increases the risk of receiving unreliable information“ [9].

It is a common knowledge that the true development emerges from the separation of the ownership function from the managing function. In this context, the role of auditing is observed from the aspect of protection of the owner's capital. This protection can be observed from the aspect of a broader social or public interest. It is known that many individuals invest into corporations, and are therefore interested in rational business and realistic and objective business reporting, since otherwise their interest are jeopardized. Besides, many individuals invest their savings into banks, insurance companies, and social insurance funds, and all those institutions invest into buying securities. Thus, the individuals indirectly invest into incorporate companies and their interests have to be protected and they have to be provided with reliable financial reporting.

## 7. CONCLUSION

In the end we can conclude that long-term bigger or lesser success, as a sign of competitive power of a company, is the result of company's performance in current and future environment. Knowing the characteristics of the narrower and the broader environment, along with the internal analysis of the company, is the prerequisite for identification of opportunities and threats in the environment, and actual advantages and weaknesses of the company. The results of such an analysis are a starting point for adequate positioning of the company in the environment and creation of its sustainable competitive advantages. In order to find and maintain a position like that, management's efforts have to be directed toward the quality of the managing process on all levels, starting

with commitment to the set goals, owners' and other interest groups' demands, effective resource utilization, ethical conduct and accentuated responsibility. In such circumstances, accounting and auditing, being interrelated, are the inevitable part of the managing process.

Accordingly, the managing process requires timely and objective information provided by the accounting and auditing function. The main task of accounting is gathering, arranging, and presenting information to the interested users in the form of accounting or financial reports. Thus, reality and objectivity are implied.

The role of auditing, by considering the significance of the return connection, is implicitly emphasized in a company as the system. Certainly, auditing is an important part of the return connection. In order for a company to fit into its environment – to survive – it is necessary that it be managed and controlled. Rational managing process is inconceivable without reliable information provided by accounting and auditing. In context of managing, the significant financial limits, evident through financial reports, of the company' development are stressed, of course only under the condition that they are objective and realistic. In the process, the analysis of the financial reports is extremely important because it turns the data from the financial reports into the managing information. It is often accented that the analysis makes 'reading' of the financial reports a lot easier. The role of auditing can be viewed from the aspect of the protection of the owners' interests and from the aspect of the protection of the business partners of a company. In relation to this, the existence of auditing can be said to have an important role in private initiative and entrepreneurship. Looking globally, it is no coincidence that highly developed economies have highly developed auditing.

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## **APPLICATION OF INFORMATION AND INTERNET TECHNOLOGIES IN MANAGEMENT AND MARKETING**

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***Summary:** Characteristics of modern civilization are increasing globalization and internationalization of the world. Thanks to development of microelectronics, computers and other achievements of information technology capitalist model has exceeded its industrial epoch and entered a new information era. I hierarchical form of companies, which develop different forms of work, and innovation in technology transfer and processing of information are the main driving force of economic and social development. The key concept of the new epoch of the information network concept: instead of a hierarchical organization of society and create a networked 'economy', which is based on information, computer-linked communication and interaction of all members of the network.*

***Key words:** Technology, internet, information, management, marketing*

### **1. INTRODUCTION**

From the moment when a man emerged, and until today, people have passed through the physical, intellectual and social development. "Human development", as scientists call it, is, in fact, the process of growth and achieving full potential of each unit. This process consists of the continuous changes that take place in parallel with other changes in society. Although it is possible to predict the trends of the development on the level of society, the speed of change remains unique to each individual.

Changes in human development have been the only sure man escort. The emergence of mankind was in the continuous process. The man felt the need to facilitate one's own life, and came close to observation and the final appropriation of natural products. So the prehistoric man started from the low-level of barbarism discovered fire, which started middle level of barbarism. Senior level of savage started finding the port and arrows. Invention of pottery skills was of large importance to have started lower level period of barbarism. Middle level period of barbarism is the domestication of animals started on the eastern hemisphere, and growing corn on the western. Senior level of barbarism started melting iron ore, and completed the invention of phonetic writing and the use of writing, which then started a modern society – civilization [1].

Human progress is, in essence, from the beginning to the end of has performed in geometric proportion. Each component of the absolute knowledge that is vested is the absolute factor in the further acquisition, all the while there was no knowledge of today's complex level.

When more than half a century appeared a new "miracle" - computer, the opinion ruled that application was found to only exclusively in the military and scientific research. At that time no one could or can predict that in the days to be so revolutionary software that enables architects to design the interior of large business buildings or software that allow medical students to perform virtual operations that can be completed and the virtual death of the patient in the case made the wrong cut.

Changes replaced what was known as ambiguity and uncertainty. The psychology of man is to provide resistance when you meet with the changes, especially with those whose goal is unknown. Therefore, is expected to change in the future will be all dramatic. From this follows the conclusion that changes must be managed. Success through the achievement of change has invested huge energy employees focused on finding and realizing the best way to affect change and to bring them from the greater benefit for the organization.

Since the change is something that is actually the essence of man, tends to progress and new discoveries continue, and carried in the future.

## 2. DEVELOPMENT OF TECHNOLOGY THROUGH HISTORY

When in front of us appear in factory where robots work and the men run, when thousands of kilometers beyond the information in seconds, when you can talk anywhere on the planet with anyone at any time, you can travel all the less to all destinations longer, is very hard to imagine how people have lived before, not so far, 150 years, without electricity, with hand tools as a basic tool for work and human power as the drive wheel.

Each period is characterized by significant progress in the general development of human society was closely associated with a greater degree of industrial development, and with it and some of the forms of energy. The first industrial revolution was the invention related to the steam engine, as a universal principle of transformation of thermal energy in mechanical. The second invention of electric power, the third, the highest level of development, and the invention of atomic energy. However, the risk environment and human security are still searching for other sources of energy especially solar, eolian, biomass and others.

### The first industrial revolution

When the James Watt 1736 - 1819 patented steam engine at the end of the eighteenth century, other primitive method of production was much improved. Steam engine launched other machines to enable larger production. Discoveries in this period were related primarily to the introduction of direct and alternating electric and energy. In 1878 Thomas Alva Edison is show your new bulb. Then it was introduced into the wider use of direct electrical energy. The first power plant for the production was built in 1882 on the Manhattan and in ten years has built a system for distributing electric power along the whole country. This have caused major changes in the field of technology and increased production of other [8].

### The second technological revolution

The main initiator of the second technological revolution is the introduction of alternating electrical energy which is greatly changed the way other production. To owe is to the greatest Nikola Tesla and his discoveries. This type of energy had a special contribution to the development of human society because of the benefits is brought.

### The third industrial revolution

The last two decades of the twentieth century represent one of the rare intervals the history of mankind, when the normal continuity of development stops and when comes to radical change. In this period occurred and the revolution in information technology and is considered to be the third industrial revolution.

Once launched, the process of technological transformation has begun to spread exponentially, gradually including all areas of human creativity and action - industry, transport, energy, finance, management, medicine, biology, media, etc.. Therefore, it is about the historical process, is equally important as the first industrial revolution, which is played in the eighteenth century, with the radically changing the material basis of economy, culture and society in general. One of the important differences between industrial and information revolution is that the industry has created new sources of energy (steam engine, electric motor, fossil fuels, and nuclear energy), and the core information revolution is the new technology of processing and transferring information.

Information revolution is in many other aspects of a lot different from the industrial technological revolution. One such difference is radical acceleration feedback between the discovery of new technological solutions, their application and their further development and refinement. In the new technological paradigm is to a large acceleration of the following cumulative feedback between process innovations and their use: users of innovation not only to accept and implement the new innovations, but them in the process of implementation often redefine and improvement, which technological progress accelerates and expands previously unseen pace. In this way, computers and communication systems are not only a functional role, but have a great dynamic and creative power: users of information technology have the ability and incentives to further develop, they, therefore, have become innovators.

Computers and telecommunications are in some way AET human mind, and to lead all its greater integration of mind and machine. So the human mind becomes a direct product of forces, as opposed to the industrial epoch when the mind thanks to the experience, knowledge and innovation indirectly influenced the development of productive forces of society. In this way, starts quickly unprecedented global spread of technological innovation. Industrial revolution are needed two centuries to expand the entire planet, a new information technology has included the whole world for only two decades (from the 1975th to the 1995th year). The result of the explosive expansion of information technology today is the connection between the entire planet Earth into a single information-communication system. However, unfortunately, there are large parts of the world who, because of poverty, excluded from this system (most of Africa, poor rural areas of China and India ...).

### 3. TECHNOLOGY CHANGES

Era of technological revolution leads to stunning existing development, and the occurrence of new technologies that reflect the whole human society, especially in the economic sphere of social life.

Technological changes are related to the production processes of one organization. Company introduced a new technique and technology to the production of a product taking place effectively e.g. introduction of computerization and robotization in the auto industry is a technological change [2].

Changes in technology change the strategic position of companies creating new ways of creating competitive advantage, particularly in the so-called high technology. When applying some of the technological changes necessary to use a strategic approach and to consider how the changes affect the strategic position of companies.

The introduction of permanent change imposed increasing competitiveness in the market. Sometimes the scientific management strives to make changes that would increase the efficiency of production, based on studies of time and movement. Today, major technological changes mainly include the introduction of new equipment, tools and methods, automation and computerization. Automation is the change in technology in the sense that it replaces the specific tasks that people perform machinery. Process automation was started for a time of industrial revolution and lasts until today.

Technological changes in the company are hierarchical, from the bottom to the top of ladder. It is natural for ideas mainly develops technical experts, who are on the lower level below and top management is that the agreement or not. In the opposite direction (from top to bottom below) to fail because top management does not know enough good manufacturing processes and problems that occur in the company, and except that they lack knowledge about the development of technical-technological processes. Probably the most obvious technological changes in recent years are reflected in the efforts of managers to expand computerization. Many organizations now have sophisticated information systems.

#### 3.1. Computer development

Computers started its global conquering campaign in 1946, when the daylight saw ENIAC (Electronic Numerical Integrator and Computer). ENIAC is considered to be one of the first computers, which represent a turning point. Toward the 30 tons and held space of a whole gym auditorium. When would it start the street lights would blink in the city of Philadelphia. Research and construction of this computer was financed by the American Ministry of Defense.

The first commercial version of the computers produced in 1951 and wore the name UNIVAC 1 (Universal Automatic Computer-1). It was used successfully in the process of census of population in the United States. The second generation "mainframe machine" was introduced in 1958 year. Mainframe computers are used mainly for large organizations critical applications, typically bulk data processing such as census, industry, consumers [11]. Invention of microprocessors, 1971 year, enabled the placement of the computer chip, and the way it is shot from the game "Mainframe computers" and caused "a revolution in the revolution." The first small computer was created in 1975 year, and already in 1981 year, the company produced the first IBM 'micro computer' named the personal computer (PC), which has become a general name for 'micro computer' [3].

As I said, the most important discoveries of new technology information occurred in the seventies of the last century and primarily in the United States. So, if the first industrial revolution can be called the British, the first revolution of information technology can be called American phenomenon. It is interesting that the one when Bill Gates, which is considered the richest man in the world and IT guru, said: "Information Revolution in the United States of America is unimaginable without discovery of Mihailo Pupin. Pupin in his discoveries improves the electric transmission through cables placed under the sea. Almost is unknown that such a great scientist is also the founder of NAC, a precancerous American space agency, known under the name NASA [10].

#### 3.2. Birth of the Internet

The process of forming the Internet started in the late 60's last century in the form of computer network message processor, a culmination of this process took place twenty years later off the World Wide Web (WWW), that is, global computer network. Message processor is a computer network is 1969. The appointed government agency for advanced research projects agency (ARPA), was established by the Ministry of Defense of the United States. The U.S. government had delivered Internet military influence and gave him the management of the National Institute of Science (National Science Foundation), to be launched soon after the privatization, which was completed in 1995 year. Development of WWW, that is the program for searching and editing, allow the sending and receiving of information between all connected computer to the Internet, and to the wide opened door to sudden global expansion of Internet [3].

It is believed that the Internet was born in 1995 year, when the companies in the Microsoft operating system Windows 95 introduced its Internet Explorer browser. Key technological developments that led to the Internet as



result of the joint work of governmental institutions, major universities and research centers. The development of the Internet was too complex, expensive and risky undertaking that it could organize itself and run private companies. It is therefore logical that the main initiator of the state (and the most powerful country in the world!).

### **3.3. E-mail as one of the major Internet service**

One of the first things that business people make when coming to work is check e-mail (e-mail). E-mail is the exchange of messages that are stored on your computer via telecommunications systems (Internet, local, city or regional computer network). E-mail could be defined as the fastest growing communication medium in the world today. Over 30 billion e-mail exchange a day in the world. E-mail is totally changed the way of communication among people, removing various obstacles in the writing and enabling millions of people to participate in the dialogue, in a simple and fast way. E-mail has become part of everyday life and this will, I am sure, remain long. The biggest advantage of e-mail, when the electronic marketing in the matter, that can be transferred millions of users for a small percentage of the cost of traditional marketing channels (print, radio or television). Thanks to explosive growth of e-mail, companies can use as a "derived" pattern of behavior of their users and better understand their requirements and needs. Get these less well-known user information needs, habits and desires and their combining with traditionally structured demographic and transaction data is built in a real image of user expectations of the products and services company. Old marketing phrase "the best user knows" the best confirmation of the described approach receives communication via e-mail, a company with its current and future users.

## **4. IMPACT OF NEW TECHNOLOGY ON DEVELOPMENT of COMPANY AND BUSINESS**

Developments of new technologies undoubtedly have a huge impact on the life of people and the development of business. However, it seems that no technology had such a great impact as the development of the Internet. Its greatest importance is in facilitating, accelerating and cost lowering of communication. Internet has helped to connect people more quickly, allow them access to a large number of information at hand, facilitate access to numerous databases of information 24 hours a day, shortened the chain of communication between buyers and sellers. This is the effect on changes in relationships with customers and suppliers, and caused the appearance of the electronic market.

E-market to provide some functions with increased efficiency and lower costs. Possibilities of direct communication between manufacturer and customer allow the individualization of purchase. Made in direct contact with the customer gets a real picture of the needs, requirements and demand, changes his habits, in the case to change, and of course faster response in terms of supply of new content. Given the globalization of business, sales can take into account the differences in cultures, customs, languages, laws. Offer products adapted to individual customer needs thanks to their direct knowledge, and products made to order specifications and reduce costs. Direct contact with the customer, creates a feeling of togetherness and the importance, because on the development of products, get solution for your problem and know that "about him, always a worry." For a large number of products in the world, such as.: Newspapers, music, video, wardrobe, etc.. is available and direct distribution and pay online.

According to all these phenomena, the Internet and information technology were in place as marketing support. The database stored information about customers, their habits, preferences, etc.. On the basis of this information, management structure in the company to predict future trends and conditions in the market.

## **5. CONCLUSION**

Development of man from birth begins with learning, and preparation for life and work of education. It is known that is an integral part of the development of civilization was the transfer of knowledge and experience from generation to generation. So for several years transforming society (changes your view of the world, their basic values, their art, social and political structure, etc..). Fifty years later we have a new world, and people then can not even bear to imagine the world in which their ancestors once lived.

The last 200 years of the implementation of the new technology played a leading role in the spectacular growth and transformation of the structure developed, in recent times, and the less developed countries. Initial changes in the technological domain can not be viewed separately from changes in economic and social system. Long-term implications of technological changes, particularly their impact on employment and earnings were the subject of interest from the very intensive beginning of technological development and industrialization. As an

example may be extreme cases lead to furious textile workers in Nottingham, in England, which led Sun Lud, who have crashed the new machines for knitting that, are believed to threaten their existence.

Characteristics of modern civilization are increasing globalization and internationalization of the world, followed by the immense amount of information and special opportunities for their abuse. The fact that I recently read in the newspapers, which states that daily edition The New York Times newspaper contains more information than the man in the sixteenth century could collect during the whole life, it talks about the time in which we live, but portends and what time is to come. Traditionalists the changes expected with fear and misgivings, progresses with joy and impatiently, and many are not even dared about it or think leaving it to "the fate of the technology." Information technology has created enormous opportunities for the exchange of information, but is created and the problems that also should be addressed. Business people, who have the responsibility to lead the organization and manage other people and the ambition to be successful in the business to deal with, do not have the right to be traditionalists or turn the head of the problems which they are surrounded. Their commitment is to think about them and that they went to meet, because it is the only way to get to the end of the problems that will inevitably report until there are changes.

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## **STOCK EXCHANGE, THE WORLD ECONOMIC CRISIS AND SERBIA**

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***Summary:** World economic crisis has lasted for months in 2008, and most of the well-known world economic analysts connect its start with intensive buying of real estate in the United States, witnessing a historical drop in the index of world stock exchange indices. Banks credited high risk real estate loans with to the people who were later not able to pay their installments. If you look at the development of the economic crisis, we see that in July 2007 in the United States there were credit losses on real estate, which amounted to between 50 and 100 billion USD. In August the same year, the French bank BNP Paribas was the first to increase its interest rates in the credits, in order to reduce credit expansion. In March 2008, there was an influx of 200 billion USD from the Federal Reserve, and in October 700 billion USD in order to increase liquidity in the market. In the United States in 2008, 2.6 million people lost their jobs, which is the highest number since 1945. Because of major economic crisis on the domestic exchange market everything boils down to the historical minimum, and losses of our investment funds amount to even 60%.*

***Key words:** world economic crisis, investment fund, historical minimum*

### **1. INTRODUCTION**

Most countries in the world adjusted their state regulations related to the Exchange market, in order to prevent abuse and fraud against the participants in the stock market transactions. Therefore, state regulations define the basic principles of the behavior of various market participants in the Stock Exchange with the aim to protect investors, providing an efficient stock market, and financial markets and reduce system risks, which investors may have.

State regulations are instruments used to achieve a certain goal, and in order to do it, it is necessary to adjust all the legal regulations and by-laws regulating the work of the stock exchange in the country.

The establishment and operation of stock exchanges and agents is regulated in our country with the Law on the securities market and other financial instruments [11].

Law on securities market and other financial instruments, which is in the implementation of the 1st October 2003, allows the operation of Belgrade Stock Exchange. This law regulates the issues of the establishment and operation of the stock exchange, jurisdiction for the issuance of license for Exchange, general Exchange acts, membership on the BSE, the market on the BSE, prohibited activities, supervision of stock exchange business, reporting Stock Exchange, as well as other issues of importance to the work of the Stock Exchange as stock market.

In agreement with the Belgrade Stock Exchange, the procedures and documentation were established, which necessarily follow the process of selling minority packages of shares from the Share Fund. Belgrade Stock Exchange has adapted the Law on Trading in shares from privatization, the sale of packages from the Share Fund.

It enabled the sale of minority packages of those organizations that completed the privatization process, i.e. where there is clearly defined ownership structure, and where there is interest in buying shares.

In 2006, the shares of 871 companies were listed, but only 580 were subject of trade, although more than 1,700 companies were privatized by the end of 2005.

The most liquid are the shares of 34 security companies which were subject of everyday trade, i.e. continuous trading, or 27.84%, which indicates their high index values, and it takes twenty-eight years for the investments in the shares to return in the form of profit.

The average daily turnover of Belgrade Stock Exchange in 2006 was about 2.5 million euros, and the major part of it, 81.4%, was achieved by selling shares of companies.

The total market capitalization of the Belgrade Stock Exchange in euros increased by 265% in two years, which was due to the growth of market capitalization of shares by over 303%.

Increased growth of capitalization stocks may be the result of the increase in the number of companies included in the calculation of market capitalization. The number of shares that were traded in the period between 2003 and 2006 increased from 342 to 919 shares, but another important reason for the growth of capitalization may be the growing price of stocks, especially high capitalization shares that are traded continuously.

Market Capitalization on the BSE in 2006 amounted to 6.7 billion euros, which represents a growth of 55.57% compared to 2005, while the total annual turnover of shares was more than 580 million euros.

Market Capitalization of Vienna Stock Exchange in the previous year amounted to 107 billion euros, while the average monthly volume of trading amounted to EUR 6.1 billion.

The formation of market capitalization consists of 68.2% of shares and of bonds of our country with 31.8% of capitalization. On an annual basis, the total market capitalization Exchange records an increase of 200 billion dinars, or 53.9%. The greatest increase in capitalization have the shares that are in the continuous trading. The increase in the market capitalization of shares that are traded by single price at the annual level is 44.1%, while the increase capitalization is the lowest for the bonds of our country and is 16.5%.

Well-known companies that have most contributed to the growth market capitalization of the Belgrade Stock Exchange were shares of pharmaceutical company Hemofarm Vrsac, that achieved by far the highest growth in prices, from 2612 to 8,000 dinars, or 206.3%. Other high capitalization shares, which were traded on the BSE continuously which should be mentioned are: Imlek with the growth of share price of 221%, then, Tehnogas the stock price growth of 476%, as well as the stock price of Energoprojekt holding of 312%.

In addition, the largest market capitalization on the BSE has the tobacco industry Niš, whose capitalization of 48.04 billion dinars, which is more than 12.35% of market share capitalization of Belgrade Stock Exchange in 2006. There is also Apatin brewery with 25.3 billion dinars, or 6.52% of the total market capitalization of shares, which are not traded in continuity.

Market capitalization is usually taken as an indicator of the market in our country. It had a very high growth in the last year, despite the small turnover of shares of companies, because the privatization was carried out by tender sales, so that there was only to one-time purchase of shares.

The establishment of joint stock companies, or companies with limited liability, whose primary purpose is to acquire ownership of a company represents the bypassing of the institutions of financial markets and stock exchanges, or takeover offers, which are the only legal way of trading shares. By the making of such suspicious contracts, which simulate the sale of shares, small shareholders may be the most damaged.

In these transactions, the only temporary winners are the so-called consultants and investors. They are actually blocking shares, and consequently, there is no meaning in trading them.

This problem can only be solved by the Law on takeover of the securities, which states that anyone who wants to become the owner of more than 25% of the capital of any joint stock company must offer to purchase 100% of the capital. Or, to make a bid to all shareholders under the same conditions, which means to purchase shares at the same price of all shareholders who want to sell.

There are other solutions to overcome the problems imposed by the provision of the Law on the establishment of companies, and that is to enable the establishment of companies with limited liability by the transfer of rights, but in that case, the proportion must be accompanied by at least the same share of money.

The basic issues that are subject to regulation and acquisitions in the developed market economies are: - the possibility of improving the offer, such as the correction of prices by 5%, conditions for the binding offer, in case of 30%, 50% or 70% of voting stock, - the possibility of irreversible moves of shareholders, or the possibility to decrease the controlling package after the bidding, the importance of supply, etc.

It should be noted here that in almost all economies in transition only Slovenia has a Law on acquisitions. This was influenced by a number of reasons, for example, the following: the application of the model of shareholding employees as one of the models of privatization, clearly expressed national strategy to protect the owner.

By the middle of January 2009, the Belgrade Stock Exchange share indices fell by 0.76%, and the index BELEX15 was 513 index points, and the general index BELEXline retained index points to 1.131.10. The turnover was only slightly more than 44 million dinars or 478 million euros and was three times less than the previous day, which only shows the trend of the falling value of the index in the BSE.

Our investment funds are in deep crisis after the occurrence of the world economic crisis at the end of 2008 and the beginning of 2009, and losses amount to even 60 percent.

Because of the great economic crisis, the domestic market of capital and securities, as well as and stock indexes, are at the historic minimum, and investments in investment funds proved to be a great loss. For the above reasons, some of our investment funds are practically facing bankruptcy. Another proof of great crisis is the fact that the company for the management of AC funds announced it will not charge a fee for payments to the fund. Value of the capital of the fund fell to only 32,000 dinars, while the investment unit is at the level of 784 dinars,

which is over 20% lower than the initial value, which amounted to 1,000 dinars. This is the reason why most investors withdraw from the stock-exchange market, which in the circumstances of great economic crisis in the world it is not a good sign of improvement.

## **2. LEGISLATION OF SECURITIES MARKET**

Using the Law on the securities market and other financial instruments, the Commission for the securities made a book of regulations on content and form of takeover bid shares. Regulations contain norms of the obligation of the publication of a significant equity participation in a company, the European Union. It establishes the obligation of reporting when you acquire participation in a company of 10%, 20%, 33%, 50% and 66%.

These norms by which the Commission for the securities has the authority to request information about the real owners of securities that have an important participation.

States that want to join and be members of the European Union, have an obligation to ensure effective and consistent application of not only domestic regulations, but also the European Union regulations. The score of consistency in the implementation of measures is given according to the criteria of the Union, which are mainly established by the European Court of Justice, while the EU Commission is responsible for regulations for violations of the internal regulations.

Serbia signed the Stabilization and Association Agreement and as such has a contractual obligation related to harmonization with the European Union.

However, our country had previously agreed to harmonize regulations with the Union. The main reason for this is to measure the progress in the accession process and the degree of compatibility of domestic legislation with the European Union.

The harmonization process with the European Union must include the following phases: - determining the area of European law and a list of regulations in the European Union with which it is possible to harmonize domestic regulations - compile a list of appropriate domestic legislation, - determining the degree of compliance of existing domestic regulations with the European Union that are the in the first phase - determination of the competent authorities to adopt new or amend existing national regulations that were in the previous stage found not harmonized. Establishing priorities, dynamics and other preliminary issues that are related to the adjustment - development of domestic regulations, including translation of the EU legislation.

Harmonization of regulations of the Member States that are related to the process of integration of the domestic economy in the EU common market can be done using a positive or a negative approach, which is indicated as a positive and a negative adjustment. The realization of positive integration consists in bringing the European Union regulations, which apply in the same way in all member states and they have already been translated and have the properties of Regulations.

As the rules imply immediate application and direct effect, their uniform application is achieved not by partial matching, but also by a complete adjustment.

Hence, in the theoretical sense, regulations and decrees do not represent means of harmonizing the rights of member states, but means of the implementation in domestic regulations, and remain as unique transnational regulations.

Legal theory states the following methods of matching: - coordination by establishing unique standards on the level of the European Union, - full alignment - voluntary adjustment - partial adjustment - a minimum of adjustment - alternative adjustment - adjustment by mutual recognition of regulations – through the adjustment of the recognition of rights of review by other member states and - by the harmonization of standards.

Economic Trends in the member countries of the European Union are characterized by two processes that have emerged at the same time: - harmonization of national regulations of member states of the European Union, and - the creation of new specific economic subjects.

The process of harmonization of national regulations in the field of economy represents a process of creation of legal norms by the EU law model.

The harmonization of national legal norms in economy has taken place - with the obligation of states that passed regulations on the coordination of the implementation on their territory - voluntarily by countries that are not members of the European Union.

Harmonization of national regulations in the member states of the European Union has the enactment of legal regulations made by the Union authorities, such as:

1. Directive on the capital, Directive on the division of joint stock company, joint stock company Merger Directive and other directives.

Harmonization of national regulations with the European Union is being carried out gradually, and it is still unfolding and subject of the existing legal, economic and social infrastructure of the future members.

In our country, certain changes occurred, but as the Law on Securities, the Law on Prevention of Money Laundering, the Law on Banks, Law on Investment Funds were adopted relatively recently, it can be considered

that other laws and regulations will play the main role in the coordination of our legislation with the laws of the European Union.

In some countries outside the EU, in the process of harmonization of national regulations has been taking place.

This process of voluntary compliance of national regulations is characterized by the following factors: voluntary nature, matching objectives, partiality, and methodology.

Harmonization of national regulations with the European Union, aims to improve the chances of becoming a member or to speed up the process.

The process of harmonization of national regulations in the field of economy represents a process of creation of legal norms by the model of European Union law.

Harmonization of national regulations is directed to the regulations of economic regulation, and the functioning of the four basic freedoms - freedom of movement of goods, - freedom to use services - the freedom of capital, and - freedom of the labor force.

Harmonization of domestic legal regulations with the legislation of European Union is a condition for joining the Union. It is a complex and long-term process, which is composed not only of the adoption of new laws or amended old laws, but their application as well.

This includes the formation of appropriate bodies, modernization of judicial system, as well as keeping society informed, particularly the business world, public administration and justice. The speed of legal harmonization depends on the overall speed of European integration.

Law of the European Union consists of a number of regulations, which are usually divided into two groups:

- The primary sources of law – are made by the EU member states and the European Union itself. Member states make them while determining their mutual relations, and the European Union by the conclusion of agreements with third countries and international organizations. In relation to the secondary sources, primarily laws have priority.

The primary sources consist of the founding treaties, general legal principles, international agreements and conventions between the member states of the European Union.

- Secondary sources of law - laws of general application which were developed by institutions of the European Union in the framework of authorization entrusted by founding treaties. Secondary sources of law are regulations and ordinances, instructions and directives, decisions, recommendations and opinions of the European Union.

Creating a single market for financial institutions was the goal of the Union before the entry into the European Monetary Union. Single European Act and the Treaty of Maastricht contained the specific programs to regulate the market for financial institutions in the European Union. These programs, contained in a separate White Book, apply for the countries of Central and Eastern Europe that have expressed desire to join the European Union.

Single market for financial institutions in the European Union is regulated by the Directives, which the individual states are obliged to embed in their own laws and by-laws. At the time when the Union started with the coordination, member countries have already had developed financial sectors.

Regulations on the single market of financial institutions of the European Union are related to the banks and other credit institutions and to the securities market.

The sector of financial institutions in the EU, but also in national legislatures, gives a slightly higher degree of control and supervision. These institutions operate with the money of their clients and not their own, and therefore bad credit business may cause great losses of clients.

In modern developed economies, the ownership of shares should not only be subject of competition, but should also be protected, because protected property has a larger price. The purpose of this regulation is the protection of shareholders from the abuses that can occur in financial markets.

The overtaking of companies can be regulated in two ways: - there is a possibility that the regulation is not enough systemized in one law, but that in a number of laws that relate to the problems of the financial market, as is the case in the United States, France and Spain.

- There is a possibility that another solution is also legitimate, in the sense of a special Law on acquisitions, as in Germany, Austria, United Kingdom.

The Law on companies, the Law on securities and other financial instruments and, regulators of financial markets such as Central Register, the stock Committee of the Republic of Serbia and Belgrade Stock Exchange, very precisely describe the content of financial reports as well as time and place of their presentation.

In addition, the Law on Companies states that the Assembly of shareholders decides on the adoption not only of the financial reports but also annual reports of the Management and the Supervisory Boards and the auditors report.

The terms of positioning on the BSE must oblige the companies to update all the information necessary to trade their shares and to put public information on the company's website.

### 3. CORPORATE GOVERNANCE

In a number of countries in transition, this problem is not regulated by a separate law. In some countries this matter is regulated only incidentally in a systemic law, as is the case in the Czech Republic, the Law on Enterprises, or in Hungary, the Law on [10] securities.

The upgrade of our legislation should go in the direction of stronger protection of shareholders in the conditions of secondary trade in shares even after the completion of the privatization process.

An important step in the development of corporate governance in the European Union are recommendations for the development of company law, which is partly accepted by the European Commission incorporated into its 2003 Action Plan.

The basic orientation of the Action Plan is the expansion of transparency and strengthening the role of members of the General Committee. In addition to company law, for the regulation of corporate governance there are two important areas:

- Regulation of the European company *Societas Europea*, and regulation of financial services, but also voluntary regulation. In the European Union there are many codes of corporate governance adopted by various institutions, professional bodies and associations.

Analysis of the state of corporate governance in our country is carried out using the structure of corporate governance - OEED-an, which is carried out for four separate areas - transparency and disclosure - the rights and equitable treatment of shareholders – agreement of other stakeholders in corporate governance, and [9] - responsibility the Governing Board and its members.

Transparency and openness is perhaps the weakest area of corporate governance in our country, although legislation in this area is satisfactory.

According to the evaluation system applied by Freedom House, mark one points to the absence of corruption, and our country has seven - the maximum presence.

Directive on prospects - November 2003, should enable the more knowledge of the company in which to invest, the Directive on insider - management - deals and handling market from October 2002, should contribute to the reduction of fraud and unethical business at the expense of solid investors.

In the European Union and the Commission, is considered that through voluntary national codes and their respect there is an introduction of corporate governance practices, so there is no need for the European code.

### 4. CENTRAL EUROPEAN STOCK EXCHANGES

It is known that on the BSE foreign investors participate in the sale of shares of our companies with over 40%. Among the foreign customers, the investment funds hold the highest proportion, which is a particularly good signal, and they buy smaller packages, not more than 5-6%.

More and more foreign citizens turn their savings into shares, and they are usually representatives of foreign companies and banks in Serbia, or citizens from neighboring countries, primarily from Slovenia.

It is the right moment to think about integrating our financial sector into larger systems, for example, with countries from the region, which would be one step closer to integration in the financial market of the European Union. However, we know that joining the EU may take a bit longer, because it is necessary to achieve cooperation with neighboring countries. This cooperation will allow us to spread our financial market, as well as to accept [1] new experiences of developed countries.

Belgrade Stock Exchange, together with other exchanges in the region, should form a special network through which would provide sufficient breadth and depth of securities market with the presence of the best companies in the region, and it would make world's investors to come to our country, which is what we need.

It would certainly lead to suppression of buying shares outside the stock-exchange markets and to the greater amount of securities to redirect to the stock exchange market.

That would mean that the stock exchange market should not be protected from competition, because the protection of local exchanges from internal or external competition can suppress normal work of stock exchange market.

The Hungarian Stock Exchange - Budapest Stock Exchange, where the market capitalization in the last year increased to 35%, which amounts to 19 billion euros, it was mainly traded in shares of four largest companies, and this amounted to 90% of the total market capitalization. Budapest Stock Exchange had problems with the macroeconomic development of Hungary in 2004 and unstable currency under the influence of a high budget deficit. Low liquidity of the state budget prevented the investment funds to reduce trade in securities on the Stock Exchange to reduce risk.

Daily turnover was about 50 million euros, so that in the past years there were no significant initial public offers. Many analysts believe that prices of shares on the stock exchanges in Budapest are significantly lower in relation to the stock exchanges in Prague and Warsaw.

In Europe, Poland Stock Exchange - Warsaw Stock Exchange has 36 companies on the list, the most in Europe after London - Stock Exchange and Euronext.

In addition, there are four foreign companies on the list, but it hopes to succeed in the coming period to reach the Vienna exchange-Vienna Stock Exchange, which is claimed to have the largest goods market. In Poland, much was expected of one of their largest banks - PKO BP, which was partially privatized by the state. This had a good impact on the share market and investors very quickly expressed the wish to buy shares whose price rose 13% on the first day. Market Capitalization of Polish companies last year was 49 billion, which represents a growth in relation to the 29 billion euros at the end of 2003.

The well-known Czech market - Prague Stock Exchange in 2005 achieved a market capitalization of 31.6 billion euros, which represents a growth of 19.9 billion euros. Top quality shares PX-50 rose to 63% in 2005. General activities of the Czech Stock Exchange - Prague Stock Exchange are the dividend payment, as well as two large emissions of shares, secondary sales of shares of national telecommunications and initial public offer of shares of French company Zentiva [8].

The Balkan region has 45 million inhabitants and eleven countries that have Exchange, which traded with shares, bonds and corporate bonds.

There is a need for the integration of stock exchanges and stock market operations, because the current state does not meet the need of potential investors from the foreign countries. Stock prices in the entire region grew, as well as market capitalization, with an increasing number of participants. The offer of attractive bonds increased, but there is low liquidity.

The reason is the lack of organized local derivatives market, which would have to change in the future, and the banks should work for profit. Comparison of stock market index among stock markets is one of the most important criteria by which to compare the economy of certain countries, as well as the effectiveness of their economic policies. The basic feature of the institutional infrastructure in the analyzed states, with the exception of Croatia, is that there is only one market. Also as far as legislature is concerned, it is necessary to point out that all countries, except Serbia, have laws which regulate the creation and operation of investment funds.

Our capital markets would be significantly greater if the biggest Serbian companies were on it, such as Telekom, Belgrade Airport, Petroleum Industry of Serbia etc. Of course, in order to place them on the organized capital market, it is necessary to sell part of their capital through an initial public offering. In addition, some other companies, which are at this moment in problems, or rather in stagnation, could be, by the end of privatization, interesting for potential investors. In the group of listed companies, among others, there is certainly Galenika, which at the end of the last century was one of the three largest drugs producers.

If we analyze the capital markets, it can be noted that the capital market in Serbia obtained the best business results in 2006, according to the criteria of the growth index. BELEX INFM increased in 2006 by 39.6%.

This is much better than the index in the countries that joined the EU last year. Romanian Bex has increased to 29.5%; Bulgarian SOFIX by 30.0%. While Estonia has had an active commercial market securities, in Poland and other smaller countries, corporate bond market is insignificant or non-existent.

In Poland, this outcome was due to the availability of state securities which bring high income.

The only member of the European Union in the group observed countries is Slovenia and its index SBI 20 fell by 7.1%.

## **5. THE FUTURE OF EUROPEAN STOCK EXCHANGE MARKETS**

European stock exchanges can be divided in several classes, and in that sense, business opportunities and strategies may be associated with the size of the stock exchange. Factors that influence the concentration of the European stock market trading are information technology, consolidation of investment companies, the common currency - euro, regulation in the unique business visa issued in one country with validity in all the countries of the single market as well as pressure to reduce the cost of stock transactions.

Exchange market in the world, such as Paris Stock Exchange with their official stock exchange - Marche Officiel and secondary market - Second Marche, Frankfurt market, with the official market - Amtlicher Handel and regulated market - Geregelter Markt. In the 1980's, ISE offered to companies a series of stock markets which are progressively demanding to companies seeking quotation. Companies which want to be included in a list must meet the minimum qualifications, in relation to the size of the company, the width of [3] the potential market in the share capital.

Belgrade Stock Exchange, which has an impact on the financial and business environment in the Balkans, again demonstrated that it can be one of the institutions which contribute to the development of the financial market of South-Eastern Europe, with a leading role in European market. BSE is similar to that in Bulgaria but far behind Zagreb and Bucurest. However, if you analyze the market of one country which is in the Balkans, but also in the European Union, such as the Stock Exchange of Greece in Athens, it is clear that more should be done to all stock exchanges in the region, countries, and those candidates which have yet to reach European and world



standards. It may be good that there is a regional market which would show not only that the countries of the region are able to cooperate but that they are also in a position to harmonize their economic and financial space and in the end to achieve the high standards necessary for entry into the European Union.

On the capital market there are the following possible strategic options for the integration of Exchange: - maintain independence, which means, independence, flexibility and lack of investment attractiveness for international investors, costs disadvantages, with little traffic are higher costs, - integration - merging with other exchanges, provides an opportunity to improve trading and clearing, reduce costs, improve liquidity, but it can also mean loss of flexibility through control of the market, the domestic strategy, as well as the possibility of the occurrence of conflict of interest - to cooperate with other exchanges and combine the advantages of keeping the independence and partial integration, in order to eliminate deficiencies.

The future of exchanges, especially in countries in transition to join the EU, has not yet been defined, but as one of the possible solutions is the integration with the European Union and integration with the European exchanges.

Integration of local markets is inevitable, because institutional investors are too large to efficiently spend money to analyze the market and companies in which they can become the majority owners by only one transaction.

Our market is very active in the field of regional connectivity, which can be considered that there is initial initiative for the formation of educational centers with other exchanges in the region. There are instances of integration in our environment, such as: Exchange of Cyprus and Greece have launched a common trading platform.

It is known that the Vienna Stock Exchange is interested in connecting regional capital markets in Central and Southeastern Europe. This concept of integration can be successful keeping in mind the fact that mainly small and medium-sized enterprises operate in this area, which would be very difficult, having in mind international competition [7].

The Vienna Stock Exchange, has already been working on the integration of stock exchanges, and with a majority of stock exchanges in the region, such as Zagreb, Sarajevo and Belgrade it has signed Memorandum of understanding and cooperation. A year ago, these stock exchanges, together with the Austrian consortium became owners of 68% Budapest Stock Exchange.

Also, the Vienna Stock Exchange is active on the markets of Poland, the Czech Republic and Slovakia, and more than 85% of companies which are listed on the Vienna Stock Exchange actively cooperate with the markets of south-eastern and central Europe.

The indicator of developments in the financial market is particularly interesting, but in our economy in general, it is certainly the ratio of market capitalization and Exchange GDP economy, because this indicator provides information about the relative size of the stock-exchange market in relation to the size of the specific economy.

If you compare data exchanges that operate in the immediate environment of the South-Eastern Europe on the basis of the transactions, market capitalization and securities that are traded, the highest volume of turnover in 2006 had the Stock Exchanges in Zagreb and Ljubljana.

These two stock exchanges have also achieved the highest increase in activity, resulting in increased market capitalization. On the other hand, the introduction of new securities had impact on the dynamics of the increased capitalization of Varaždin and Montenegro Stock Exchanges. The rationalization is a tendency that is spreading to the territory of commodity trade, and in other areas, including regional integration of stock exchanges.

Economic reasons are often motives for regionalization, as well as fear of underdeveloped countries of the consequences of globalization dominated by developed countries in the world.

Integration of stock exchanges in Europe is a positive process that leads to an improvement of trade opportunities, commercial gains, lower costs, enhanced business, reducing the time of performing transactions. Greater integration can lead to improvements, but also to the specific problems that arise and to the process - a problem that occurs during the integration and regionalization of stock exchanges is distortion in the market functions, duplication of functions.

As well as any other market in transition, the purpose of ours is not to enter the resources, but to distribute the existing resources.

The problem is lack of the possibility of evaluating the securities, which is a common trait with other markets. The better it is, the more efficiently it covers the price and works more efficiently. Our Exchange market is better in relation to the stock exchanges in the environment, such as Zagreb, Sarajevo and Banja Luka Stock Exchange. Other problems are relatively high risks that come not only from what is called the general environment, but also from the issuers of securities. Cooperational management is at a relatively low level, the owners of shares are not sure what have in hand, dividends are not paid, and rights of the owners of the securities are not respected.

The current regional integration of stock exchanges in the north of Europe gained force, because the common goal of these exchanges is to create an integrated Nordic and Baltic securities market and further improve the competitiveness of its region. The merger of OMI and HEX was the main step in the organization of an integrated Nordic and Baltic securities market.

Therefore, it is necessary to continue such integration including all markets - Hex Integrated Markets in NOREX, and further linking Hex - Integrated Markets, NOREX Alliance, which has seven Stock Exchanges, Copenhagen, Hex Integrated Markets, Iceland, Oslo, Riga, Stockholm, Tallin. In addition there are four clearing companies, three Central Depositories, which cover the entire Nordic region and two-thirds of Baltic area.

Last year, OMHEX concluded agreement with the leading Lithuanian participants in the securities market and financial investors in the privatization of 44% of the shares.

Lithuanian Stock Exchange - National Stock Exchange of Lithuania and 32% of the shares of Lithuanian Exchange - Central Securities Depository of Lithuania.

It continues with a formation of a joint Baltic market, and existing Baltic list that consists of 15 major companies from listing - Estonian Exchange - Stock Exchange, Stock Exchange and Latvian - Lithuanian Stock Exchange and the Stock Exchange - Stock Exchange, is extended by all companies listed on the three mentioned Stock Exchanges.

These securities will remain on the list of domestic stock exchanges, but will be sold under the joint, original name, the Baltic List.

This is in connection with the introduction of new trade in securities on the financial market in Estonia and Latvia. This process of integration of stock exchanges is not focused solely on the segment of action, but the companies listed on the I-List, which will be an integral part of Baltic list, as well as the bonds that will be integrated in the Baltic Bond List.

Baltic stock index is based on the total income, the weighted market capitalization, which is composed of all Baltic securities. The integration of the Baltic list points to the fact that in the Baltic countries, more and more investors see their chance in this common area for investment.

Since 2005, the stock shares from Sweden, Denmark, Norway, Iceland, Finland, Estonia and Latvia, can be bought and sold on the unique system of trading on the exchange market. This connected the systems SAXESS for trading on the markets of OMX exchanges in Finland, Estonia and Latvia. Shares of 876 companies are listed on seven NOREX exchanges, and total market capitalization of all companies listed on the stock exchange NOREX, reached about 561 billion euros in 2005.

Euronext Stock Exchange, one of the European and world stock market business centers, and its further strengthening is continued in Europe during 2004, when the derivatives of the Lisbon Stock Exchange, the newest member of Euronext, were transferred for trading and clearing.

In this way, the Lisbon Stock Exchange complies with Euronext technical standards, with a relief inter-market activities. The Lisbon Stock Exchange used this for the expansion and distribution of Portuguese derivative shares to international investors, and also gave the interested Portuguese customers direct access to derivative products in London, Amsterdam, Paris and Brussels, which are already in the system, as well as increasing the quality of the existing market. This enabled the clearing of Portuguese derivatives in real time by LCH - Clearnet.

In addition, all in the direction of strengthening cooperation with Euronext, Luxembourg Stock Exchange - Stock Exchange set a new system among its members, which allows certain advantages of the network, which is in use throughout the world and provides easier access to the market of Luxembourg from the country and abroad.

As the European stock exchanges face growing customer demand in the market of Germany - Deutsche Borse offered to the Switzerland SE - Swiss Stock Exchange, expansion of cooperation in improving services and decrease costs, which could be achieved with the help of consolidation. These two stock exchanges have good cooperation in Eurnex, the international platform for derivatives trading, where it has the right to 85% of the income.

Further regional integration in the wider European flows is reflected in the purchase of 14% of the shares of the Budapest Exchange - Budapest Stock Exchange by the Vienna Stock Exchange - Wiener Borse, because a number of very high quality investors are interested in a successful, stable and profitable development of Hungarian capital market. The main goal is to provide and develop the business and earnings based on the activities Budapest Stock Exchange and in the central clearing house Keller.

In efforts to intensify regional cooperation, Wiener Borse AG signed an agreement on cooperation with Bucharest Stock Exchange - Bucharest Stock Exchange, which is the basis for cooperation between the two financial institutions. These two stock exchanges started to publish a joint index, Romanian Traded Index - ROIX which consists of the companies listed on the Bucharest Exchange - Bucharest Stock Exchange.

Vienna Stock Exchange - Wiener Borse and Shanghai Stock Exchange - Shanghai's Stock Exchange have signed an agreement on joint activities in the future, which provides the cooperation and contribute to intensifying economic relations between Austria and China. Austrian industrial sector provided a strong presence in China, as a result of the success of projects and Chinese investors have a greater interest in the region of Central Europe.

## 6. AMERICAN STOCK EXCHANGE MARKETS AND THE WORLD ECONOMIC CRISIS

In the United States, there are federal, state and regional regulations. State regulations have resulted in some interesting variations, which occur in the corporate law of the United States as well as in the mediation of securities.

Although there is still a certain move towards uniformity of regulations, it can always happen that to bid on the sale of securities, issued by a well-known financial company, may be illegal in some states of the United States. Federal regulations apply to the financial sector in the United States. One of the most important features of the Law on Banks, Glass-Steagall's law from 1933, which refers to the securities business. The mentioned law forbid the banks in the United States to broadcast stock shares or to intervene in their exchange.

Similarly, the tests by Sellar were significant, which led to the strengthening of Glass-Steagall's law and that should be an introduction to the basic changes, which are related to the legal regulations on the operations of the securities market. In general, lots of loose laws were applied, issued by the institutions which handle certain securities, while the framework of state regulation was reserved for the application of criminal and civil law.

Due to such a situation, the legal framework of the state of New York was of particular importance, which is, in fact, understandable, because the largest stock exchanges were there. The Law on securities from 1933 and the Law on securities and stock exchange from 1934 established legal mechanisms, and created legal affairs related to the following: - agent as well as intermediaries in the markets, over the window - make restrictions in connection with the speculative loans - to ensure adequate material reports, which would benefit the wider public investment.

This was considered of special significance and importance, and that the law could be applied, the special committee was formed, called the Committee for the Securities and Trade - SEC, which had great powers.

Stock Exchanges that are dealing with international affairs and foreign trade must be registered with the SEC, which, in fact, means that the Commission approves of them to become its members. All the well-known stock exchanges in the United States have been introduced in the SEC including Chicago exchange. The exchange in future contracts was not introduced in the register of SEC, but included in a special body, the Commission to trade future contracts on the basis of goods - CFTC. This is the most famous of all instruments used in the legal approach to this problem in the United States. According to the law on securities and stock exchange, the composition of the federal reserve also has certain powers in relation to the deposit, that investors must meet if they want to participate in the affairs of the stock exchanges.

So, if it seems that speculative jobs are getting out of control, then it will increase the deposits, in order to resolve the situation, and margin will be lower in that case, in order to motivate interested investors to continue to invest their capital.

In the same way the law determined and prohibited the entire range of affairs in case of manipulation, and SEC has the right to make regulations which will sanction cases of manipulation and fraud.

Significant part of the legislation also relates to the illegal actions of those who trade on the basis of confidential information, and whose capital is more than 10% of the total capital, and serves as a way to control behavior of the majority shareholders, which could be found in the situation to speculate their own actions.

Factors that favor the business strategy focused on the National Stock Exchange issues are:

- The size of the domestic economy - the efficiency of the domestic securities market - national regulations, including taxes, state policy, preference of local investors in the listed companies, support national infrastructure. The inability of broking companies to deal with quite a number of intermediary business, as well as the lack of control operations, also is the subject of legal regulation, relying on the causes in the necessary procedures for liquidation and settlement, which are then applied. So that brokers had to meet the provisions, and be constituted to have their own Rules and Business Process.

CFTC also required to meet requirements such as registration in the register and provide reports.

SEC publishes information related to facts dealing with the securities offered to the public, in which the public will invest its resources. The Commission became effective body that sets high standards of accounting, not only in relation to the business of stock exchanges and securities, but also for all branches of American economy. World economic crisis, has lasted for months in 2008, and most economic analysts connects its start with large real estate credits in the United States, because the banks gave high-risk loans with small interest to people who were later not able to pay their obligations.

. If you look at the development of the economic crisis, we see that in July 2007 in the United States there were credit losses on real estate, which amounted to between 50 and 100 billion USD. In August the same year, the French bank BNP Paribas was the first to increase its interest rates in the credits, in order to reduce credit expansion. In December 2007, the U.S. Federal Reserve coordinated action with the five leading central banks in the world to help its banks with several billion U.S. dollars.

In January 2008, the World Bank predicts slower global growth of world economy and the stock exchange recorded the largest fall of share prices since 11 September 2001. In the largest intervention in March 2008, the U.S. Federal Reserve issued 200 billion U.S. dollars in circulation to increase liquidity in the market. In

September 2008, unemployment in the U.S. rose by 2.1%, and the American government saved two investment funds in the United States and it did not adopt the rescue plan of 700 billion U.S. dollars intended for the United States financial system. In October 2008, the American government realized its mistake from the previous month and approved a plan of 700 billion U.S. dollars of financial assistance for its economy.

November 2008 is characteristic for the two countries. China presents the plan of 586 billion U.S. dollars, as economic stimulation for the economy in the next two years. U.S. Federal Reserve announced a new assistance of 800 billion U.S. dollars for its economic system. In December 2008, the recession was officially confirmed in the United States, as well as in other countries of the world, which was the highest since 1929.

Start of recovery in the world financial market, which is now the greatest crisis in the past eight decades, can be expected in the second half of 2009, said the former president of the Management Board of the U.S. Federal Reserve Alan Grispén. He believes that the Bank, if the normal situation in the U.S. real estate market would be able to really express the value of their loans and mortgage backed securities, which is a key condition for the normalization of the world financial market. In the middle of January 2009, it was announced that unemployment in the United States was at the highest level in the last 16 years, two million workers lost their jobs. Analysts predict that in 2009 the United States, as the largest world economy, needs to put away two million full-time employees. In the United States in 2008, according to the American Ministry of Labor, a total of 2.6 million jobs, were abolished, which is the most since 1945.

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## **MACRO-ECONOMIC ENVIRONMENT IN SERBIA IN THE PERIOD FROM 2001 TO 2008**

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***Summary:** After the democratic changes in October 2000, the process of economic-system reforms was initiated, which included the introduction of a new legislative framework and the forming of market institutions. Simultaneously with the introduction of market business conditions, began the process of establishing macroeconomic stability. Consistency in the implementation of measures of macroeconomic policies and the progress in the implementation of structural reforms have resulted in better positioning of the country, and a significant improvement of the investment climate in the country. In this chapter, the trend of movement of basic macroeconomic indicators will be briefly analyzed, in the period from 2001 to 2007, including the available data for 2008. Macro-economic environment will be analyzed from the aspect of economic activity, inflation trends, basic financial payment positions, monetary and foreign exchange indicators, the level of debt of the economy, employment and movement of net earnings.*

***Keywords:** macro-economic analysis, gross domestic product, inflation, monetary and foreign exchange indicators*

### **1. THE LEVEL OF ECONOMIC ACTIVITY**

According to the evaluation of the Ministry of Finance, the value of the gross domestic product (GDP) in 2008. was 33.86 billion Euro, while the value of GDP per capita 4,597 Euro. In comparison to 2001, which is later in the analysis taken as a reference year of observation, the value of the GDP was more than twice higher. From the relative amounts, the average annual growth rate of GDP in the analyzed period was 5.6%. The level of economic activity in the period 2001 to 2008 is shown in table 1.

**Table 1:** The level of economic activity in the period 2001-2008

	2001	2002	2003	2004	2005	2006	2007	2008
GDP, mil. €	13,113	16,811	18,010	19,128	20,407	23,610	29,124	33,861
GDP, per capita €	1,748	2,242	2,401	2,563	2,742	3,185	3,945	4,597
Real growth GDP, %	4.8	4.2	2.5	8.2	6.0	5.6	7.1	6.0

Source: Ministry of finance Republic of Serbia.

The highest growth of 8.2% was achieved in 2004, and according to the National Bank of Serbia the growth rate of GDP in year 2007 was 7.1%. In the first three months of this year, the Ministry of Finance has announced that it achieved a very high GDP growth of 8.2%, but the latest data for the whole year showed growth of 6%. The growth of economic activity is to a greater extent encouraged by the significant growth in the sectors of trade, financial services, construction industry, transport and communication. According to data from the Memorandum on the budget for 2009 with projections up to 2011 (before global economic crisis), the projected real GDP growth rate for 2008 was 6%, while the average growth rate in the coming three-year period was projected on the level of 6.8%. Observed by sectors, significant growth activities was expected in the agricultural sector, industry, construction and services. In the terms of global economic crisis, which has impact on national economy, the Serbian economic policy for 2009 was defined with the GDP growth of 3.5%.

## 2. INFLATION

Deflation trend that began in 2001 terminated in 2004 due to the rapid growth of earnings, the increase in price of oil on the world market and the nominal depreciation of Dinar exchange rate. Inflationary trends in the period from 2001 to 2008 are presented in table 2.

**Table 2:** Inflationary trends in the period from 2001 to 2008

	2001	2002	2003	2004	2005	2006	2007	2008
Retail prices (end of period), %	40.7	14.8	7.8	13.7	17.7	6.6	10.1	6.8
Living costs (period average), %	93.3	16.6	9.9	11.4	16.2	11.7	7.0	13.5
Basic inflation, %	112.9	20.5	4.4	6.1	11.0	14.5	5.9	10.1

Source: Ministry of finance Republic of Serbia.

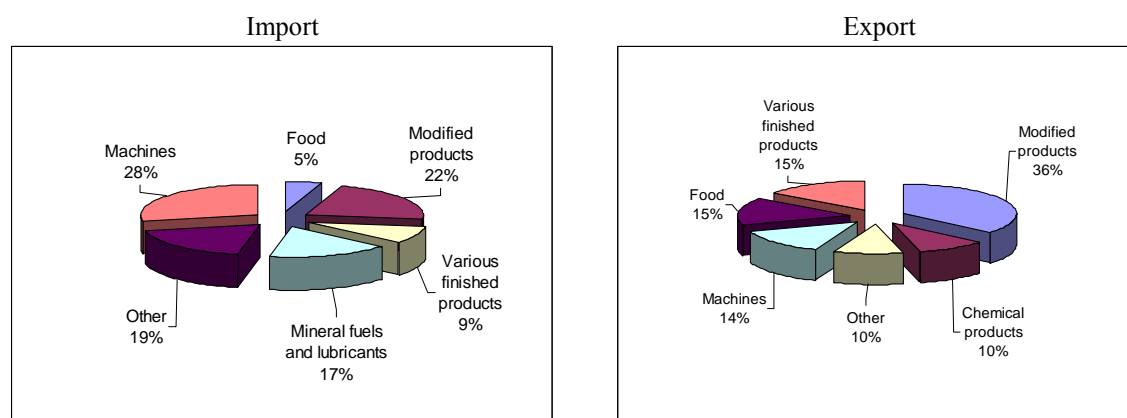
Inflation measured by the annual rate of growth of retail prices, from 112% in year 2000 dropped to 7.8% in year 2003. However, due to the above mentioned reasons, inflation in 2004 again went up to 13.7%. Introduction of the value added tax in early 2005 additionally amplified inflationary pressure and together with the high price of oil caused inflationary trends, so that by the end of year 2005 inflation reached 17.7%. At the end of 2006, the inflation was lower than 10%, so that during 2007 inflationary pressure was restored to life again, which resulted double figures inflation at the end of the year. According to the latest available data from NBS, inflation in December 2008, measured by the growth of retail price (inter-year growth) was 6.8%.

## 3. FOREIGN TRADE EXCHANGE AND BALANCE OF CURRENT TRANSACTIONS

In the period 2001 to 2007, the growth trend of foreign trade activities was represented, but the value of exports was considerably lower than the import of goods. In 2001, Serbia exported goods worth 1,922 million Euro and during the observed period the export increased by an average annual rate of 24% to year 2007, when it reached the level of 6,432 million Euro. The value of imports increased from 4,759 million Euro in year 2001 to 13,507 million Euro in year 2007, and increased by an average annual rate of 19.6%. During the first 11 months of 2008 Serbia exported goods in the value of 6,887 million Euro, while imports reached a value of 14,382 million Euro.

Foreign trade deficit is present in all the years of the observed period. In 2001, deficit was 2,837 million Euro and in the next six years increased by an average annual rate of 18.2%, to 2007, when it reached the level of 7,075 million Euro. Foreign trade deficit in the first 11 months of 2008 was 7,902 million Euro, which is growth of 45% in comparison with the same period last year.

Figure 1 shows the structure of the import and export from Serbia by dedicated groups during year 2007. According to the National Bank of Serbia, in 2007, the largest import items were machinery, processed products and mineral fuels and lubricants, which all together constitute 67% of the total imports. The export structure dominated processed products that individually make 36% of the total exports. The following are various finished products, food and machinery, which together make 44% of the total export.

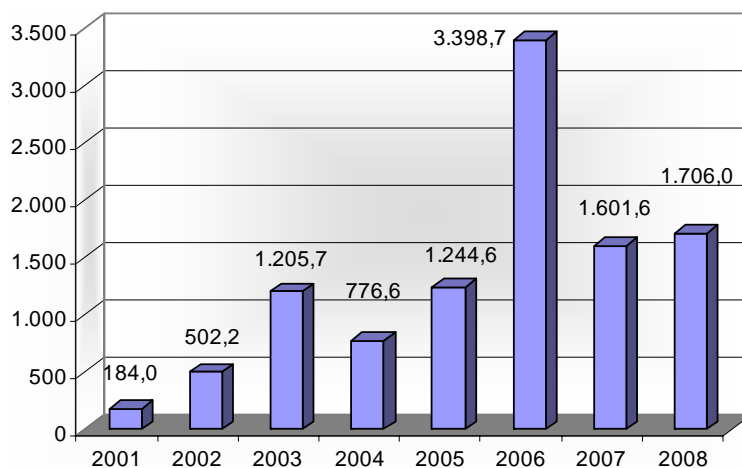


**Figure 1.** Exports and imports by groups dedicated in year 2007

From the economic use, in the last three years the largest increase in imports was observed with mineral fuels and lubricants (25%), processed products (24%), chemical products (23%), machines, machine parts and transportation equipment (20.9%). The highest growth of exports has been recorded in machines, machine parts and transport equipment (47%), processed products (36%), a variety of finished products (33%) and food products (22%). In the visible trade, the surplus was achieved only in the trade with alcohol and tobacco products, while the deficit was achieved in trading with all the other product groups, from which the largest is made in trade with machines, machine parts and transport equipment (4.8 billion USD), mineral fuels and lubricants (3 billion USD) and in trade of chemical products (1.7 billion USD).

#### 4. FOREIGN DIRECT INVESTMENT

The implementation of economic and systemic measures was positively reflected in the improvement of investment environment, which in far instances resulted in the growth of foreign direct investment. The largest inflow of foreign direct investment was recorded in 2006, when they reached the value of 3,398.7 billion Euro, of which 1.5 billion related to the privatization of Mobi 63, which is also the largest so far recorded foreign direct investment in the country. According to the Ministry of Finance, in the first ten months of 2008, the inflow of foreign direct investment amounted to 1.706 billion Euro. In Figure 2 is a graphical representation of foreign direct investment inflow in the period 2001-2008.



**Figure 2:** The inflow of foreign direct investment in the period 2001 to 2008

The biggest foreign direct investments are originally from Austria, Slovenia, Germany, Greece and the United States. Table 3 gives an overview of the ten most important foreign direct investment in the analyzed period.

**Table 3:** Ten most important foreign direct investment in the period 2001 to 2007

Investor	Country of origin	Investment type	Amount, mil. Euro	Sector
Telenor	Norway	Privatization	1.500	Telecommunications
Phillip Morris - DIN	USA	Privatization	611	Tobacco
Mobikom	Austria	Green field	570	Telecommunications
Banca Intesa –Delta banka	Italy	Capital market	508	Banking
Stada	Germany	Capital market	475	Industry
Interbrew – Apatinska pivara	Belgium	Capital market	462	Drinks
NBG	Greece	Privatization	425	Banking
Biotech Energy	USA/Hungary	Green field	380	Oil industry
Merkator	Slovenia	Green field	240	Retail
Lukoil - Beopetrol	Russia	Privatization	210	Oil industry

## 5. ECONOMY DEBTS

According to the National Bank of Serbia, external debt at the end of November 2008 amounted to 21,656 million Euros, or 27,987 million USD. In relation to the reference year of observation, external debt in Euros has increased to 29% and 57% in dollars. The average annual growth rate of the debt in Euros was 4%, and 8% in dollars. Maturity structure of external debt can be considered as favorable, considering most of the debt relates to the long-term debt.

**Table 4:** The foreign debt in the period 2000 to 2008 in Euros (*Source: National Bank of Serbia*)

	2001	2002	2003	2004	2005	2006	2007	2008
Debt / GDP	94.2	70.9	66.7	54.1	64.0	63.0	61.1	64.0
Debt / Export	456.9	379.5	343.0	365.7	362.1	291.7	279.6	314.4

Public sector debt at the end of November 2008 amounted to 6,571 million Euros, which represents 30% of the total debt. For comparison, in 2001 the participation of public sector debt was even 80%. Reduction of public debt in the structure of the total debt is a result of debt depreciation to creditors of Paris and London Club and the early repayment of debt to the International Monetary Fund and International Bank for Reconstruction and Development. On the other hand, in the structure of the total debt there was a growth of private sector charges. Total external debt of the private sector at the end of November 2008 amounted to 15,085 million Euro, which makes 70% of the total debt.

**Table 5:** Indebtedness level criteria

	High indebtedness	Average indebtedness	Low indebtedness
Debt / GDP	$X > 80\%$	$48\% < x < 80\%$	$X \leq 48\%$
Debt / Export	$Y > 220\%$	$132\% < Y < 220\%$	$Y \leq 132\%$

## 6. MONETARY AND EXCHANGE INDICATORS

In comparison with 2001, the level of foreign reserves was increased more than six times, and recorded annual growth rate of 42.2%. In December 2008, the foreign exchange reserves have reached a level of 9,122 million Euro. In the period 2001 to 2005, the national currency recorded a depreciation. After that the appreciation trend would arrive and was present during the first half of 2008. Parallel with the establishment of macroeconomic stability, restored the citizens' confidence in financial institutions. Savings of population of 330 million Euro in 2001 increased to 5,028 million Euro, as it was at the end of 2007. Considering the relative aspect, the growth of savings is over 60% annually. Table 6 shows main indicators of monetary and foreign exchange for the period 2001 to 2008.

**Table 6:** The main indicators of monetary and exchange (*Source: Ministry of finance Republic of Serbia*)

	2001	2002	2003	2004	2005	2006	2007	2008
Foreign exchange reserves NBS, mil. €	1,320	2,175	2,840	3,779	5,524	9,593	10,896	9,122
Value of € relating to RSD	59.71	61.52	68.31	78.89	85.5	79.00	79.24	89.20
Savings of population, mil. €	330	796	1,087	1,461	2,274	3,413	5,028	4,893
Total placements of banks, mil. RSD	75,187	97,589	141,498	231,866	394,118	521,770	759,457	1,042,730
Economy placements, mil. RSD	68,377	77,845	109,047	161,776	255,965	306,918	439,937	639,311
Population placements, mil. RSD	5,277	16,139	29,333	66,354	131,845	205,146	305,665	380,717



## 7. EMPLOYMENT AND EARNINGS

According to the data by the Bureau of Statistics, there are currently about 2 million people employed in Serbia, and 756,456 persons were registered as unemployed. According to the same source, based on matching the methodology of the Survey of work force with Eurostat regulations (April 2008), officially registered unemployment rate is 13.3%. Table 7 shows the employment and earnings for the period 2001 to 2008.

**Table 7:** Employment and earnings (*Source: Ministry of finance Republic of Serbia*)

	2001	2002	2003	2004	2005	2006	2007	2008
Number of employees, average in thousands	2.102	2.067	2.040	2.051	2.069	2.026	2.002	1.998
Unemployment rate	12,2	13,3	14,6	18,5	20,8	20,9	18,1	13,3
Net earnings (period average), RSD	6.078	9.208	11.500	14.108	17.443	21.707	27.759	32.217
- real growth rates	16,5	29,9	13,6	10,1	6,4	11,4	19,5	4,3

Average net earnings in the period 2001 to 2007, increased by an average annual rate of 14%. In Euros, the average salary in Serbia has grown from EUR 102 in 2001 to EUR 347 in 2007. In the first six months of 2008, the average net salary per employee was 395 Euros, and achieved real growth rate of 4.3%.

## 8. CONCLUSION

Since the increase of Serbian economy during the last years had been dictated by the increase of export, foreign investments and personal expenditure, the short-term perspective of Serbian macro economy will be affected by the decrease of global solvency, decrease of foreign investments in countries with increased risk rating, as well as the economic decrease in main EU countries, which are also trade partners of Serbia. As the consequence of this, it is expecting the decrease of Serbian growth to less than 3.5% in 2009, compared to the average economic growth of 5.6% in the 2001- 2008 period. The main element of the Serbian strategy for improving the business environment is the passing of the restrictive budget for 2009. The aim of this budget is a deficit that equals 1,75% of GDP, in accordance with IMF recommendations. The government is planning to cover the decrease of deficit from 2,7% (2008) to 1,5% in 2009 with profits from privatization, new credits and the increase of taxes on gas, coffee and cigarettes. The Serbian government adopted a program of measures worth 1.69 billion U.S. dollars to ease the effects of the global economic crisis and ensure a 3.5% economic growth rate. The government will determine the economic priorities and sectors which would receive these loans, and the Serbian central bank will set the criteria for selecting commercial banks that would service these loans. The International Monetary Fund's (IMF) executive board has endorsed the 402.5 million euro (530.3 million USD) stand-by deal it signed with Serbia in November. The endorsement makes about 353.3 million USD immediately available to support the government's programme aimed at maintaining macroeconomic and financial stability in view of the global financial crisis. The Serbian authorities intend to treat the 15-month arrangement as precautionary and draw on the funds only if necessary.

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## EFFECTS AND ENCOURAGEMENTS OF NEW TECHNOLOGIES AND INNOVATIONS IN PROCESS OF MANAGEMENT

Gavrić Saša

Doo „Magic-Prom“, Dobo, BOSNIA AND HERZEGOVINA

**Summary:** *The entire period to the present day is called the period of industrial revolution that transforms into a modern economy in the information revolution. The period marked the sudden growth of technology is called the technological revolution that is distinguished in relation to the three key periods and up to both energy engineering: started at the end of the eighteenth century, when human energy to replace the machinery, mechanization era: the end of the nineteenth century, when the electricity caused machinery operations; age of automation: it started from 1950 and is mainly based on the development of information technology of microchip.*

**Keywords:** *industrial revolution, innovation, management, information technology*

### 1. INTRODUCTION

Information Society begins in mid-twentieth century and the last day. It is based on the scientific-technological revolution. Electronic computers are the basis of new automated production. Robotization is more present not only in the "dirty technologies" but where working conditions are not suitable for him. In the information society is dominant the management systems as opposed to the industrial society in which you seek greater productivity and increase profits. The development of the information society will largely depend on what is left of the country after shameless economy of nature in industrial society. Ecology becomes limited, and simulation factor of future development. From the first civilizations to appear industrial society has been close to 10 000 years, and industrial information society to less than 20 years. Civilization is created under the considerable influence of science and art and expresses the spirit of unity, morality and style. What brings us the future!? Development, viewed in the time dimension, which points to the rapid acceleration of change. Through the outlines of a new society creates a new field of science. It seems to me that the study of spatial two extremes - the space and human genetics, the results will stub foundation IV civilization. Where will the space and how much time to spread the new civilization!? Lucidni Asimov is 80-years of the twentieth century said that civilization can move to the remote plateau space [7] as a serious contemporary scientists predict that by the end of the XXI century more of civilization seem artificial inelegance - people robots [8].

The new technologies include: decentralization, functional capabilities which enable creative reorganization, flexibility and incentive to flow changes, shorter product life cycle, characteristics of the factory with flexible technology, flexibility and variety of profitable, multi-equipment, common costs, economy range, a multitude of products according to customer's request production, related to demand, automation serial production, innovation and responsively, variety, disaggregated capacity, systems without employees or downsizing, liability related to compensation. As the economy country or a particular company in the position to lead on the basis of project plan gets direct foreign investment for the implementation of new technologies, to create a new organizational structure as well as re-engineering of business processes.

### 2. NEW ORGANIZATIONAL PARADIGM

The "era" of learning has begun. In mode have entered alliances, as a good way to come to the knowledge and see into the competition. Recovery strategy was support in theoretical concepts that introduce paradigm of

organizational learning, continuous process of creation and development capabilities of enterprise for change. The concept of organizational learning offered manager practice more. In the case of cyclical fluctuations company adjusts through "adaptive learning", so that makes changes in the existing competence and organizational culture. In the case of structural disorder in the middle, adjustment requires radical changes. Radical changes mean "new beginning". The company has adjusted by "generative learning", so that leaves the old and introduces new competencies and a new organizational culture. Radical changes occupy management of the nineties. In literature, good under the name of transformation, restructuring, reengineering, change organizational culture, total quality management and the like., And the essence of the fundamental changes in the conduct of business, in order to help efforts to come to terms with the new, challenging environment. Fundamental changes to create the organization and culture in which employees can explore, experiment, develop capacity, anticipate customer needs and intentions of competitors. The task of management is to develop a model of organization and culture that will encourage and support innovation and learning. The creation of the organization and culture suitable for learning, the company is trained to continuously learn.

### 3. NEW ORGANIZATIONAL STRUCTURE

Informative organizations. The organizational structure of information companies is a form of plane, without a large number of organizational levels and direct communication. So the question is what will be the large companies that informatics. It is believed that the large companies in order to preserve their skills and survive concurrent need to transform, to change old habits and to acquire new ones. The process of transformation will jeopardize many jobs, the status of many people, especially middle aged with longer working path, middle levels in the organization, who are the least mobile and feel secure in their work, on their positions in the mutual relations and behavior. But the hardest problem will be providing, and the preparations leading managers. Experienced business people must return to school. Pulsing organizations. Toffler had a similar organizational vision, believing that thanks to information technology leaders is able to control more sector, where large sectors assigned independence. Corporation today more concerned about the adequacy of forms and less about the adequacy of the size, because they need the organizational structure is suitable not only for that take place but for the moment in which the. Instead of pyramidal structure, corporations need a segmented structure, which it provides diversity and deferential organizational units. This is pulsating structure that changes the ad hoc, through which the company adjusts the situation. Instead of uniformity new organization recognized by the diversity and diversity units manage people of different profiles, preferences and abilities. All these differences need to connect and harmonize the general manager, who is confronted not only with the various organizational forms, but with different personalities and characters. He must be able to waive part of which will be transferred to the organizational unit. Transforming the old to the new organization is changing the organizational culture as a system of values, ideals and beliefs. Thanks to technology, it is possible with reduced costs diversity provide products and services but not using modeled standardized and bureaucratic organization. Companies that continue to operate the old way will perish. Therefore, managers suggest that trigger changes so that will change the first-line management, which is very conservative, and therefore difficult to change, and other employees. The changes include a change of behavior, way of thinking and approach to business. Changes should be associated with the system of compensation, which should start from below, from the manager of Operations, which is expected to create flexible sub organizations suitable for flexible production technology and different requirements of customers. The crucial role receives sectors that are most susceptible to changes, such as marketing, research and development, planning, production and running of the top management. Organization as network. G. Moragn analyzes organizational development and determines the six models in the developmental series of bureaucracy to the network

**Table 1:** Development of organization from bureaucracy to network

Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Stiff bureaucracy guided by one man	Bureaucracy organization led by collective	Bureaucracy organization with teams and work groups	Metric organization	Project organization	Network companies with loose connections
Mechanical/ bureaucracy organization for stable conditions			Organic network organized for flexibility and changes		

Models 1, 2, 3, are the organizational structure with the bureaucratic culture. Model 4 and 5 reflect the participative and entrepreneurial culture, while model 6 is a new organizational structure, for the time comes,

based on organic culture that has yet to be affirmed. The company is structured as a loosely composed network, in which the center is the core that sets the strategic direction and provides operational support for maintaining the network. Or the central core group to create the idea of a second performing of other companies that enter into the agreed ratio (virtual alliances). Network changes with changes of product or services, companies in the network to alternate networks never look the same no. Such organizations presents an open system of ideas and activities, the system of enterprise in which the demand comes from the dissolution of the need from him out. The organization is loose network boundaries and clear structure. Switching to 6<sup>th</sup> model will not be able to achieve most companies because there are many hidden cultural and political obstacles. Under pressure from the environment sooner or later companies will or will adapt or perish. Management companies will trigger changes or will itself be replaced.

#### **4. DESIGNING NETWORK ORGANISATION**

The occurrence of network organization characterized factors: rapid changes in technology short product life cycle and market structure in which customer preferences are clearly segmented. Intelligent companies rely on the knowledge and resources of other companies. Use the network to reconstruct traditional organization, in order to increase the internal capacity. Central company is the role coordinator member activities, which is based on official IS and a brain network of organization. There are various forms such as joint ventures, alliances strategic, franchise, a consortium of various researches.

IT is the company flexible system facilitates human work, especially at the operational center, reduce the average size of companies. In the production of IT has made the flexible production processes, abolished many jobs, rescuer workers monotonic and routine tasks. The management system of IT has changed the content and appearance. Pushed the mass of managers and analysts. Electronic data processing, management information system has significantly changed the look and features of the enterprise organizational structure.

Virtual organization-capacity computers to create the impression that his ability saving more than his actual abilities known as "Virtual memory." Virtual organization to organization, to exchange knowledge, costs, market. The aim is to increase productivity. Often comes from the join venture relationship, where the partners share the risks, costs, profit. The success of these organizations is the proper definition of the key components, selection of reliable partners, establishing a common vision and the adoption of a common strategic plan. Negative copy: Alliance IBM and Microsoft, which began to disintegrate in 1991 when Microsoft developed Windows, concurrent OS / 2 are the two companies jointly developed.

Virtual platform is a set of potential members of virtual enterprise corporations that meet certain conditions. Can be arranged according to the criteria of resources, skills and essential competences. There are two different approaches in search of partners:

- Outside the platform - search the appropriate partner company with essential competencies in the global market. Access can be difficult and time consuming, but removes the risk that the selected partner will not fit;
- Inside the platform - selects the partner who is in the virtual platform;

Advantages: faster access to information, increase productivity, reduce business costs, and reduce the cost of software, reduced use of paper, greater reliability of data.

High technology, information, learning and experience changes metamorphose, transforming in the virtual organization that is based on the concept of activities, not the place where the activity is done. Essence the conceptualization of performance speed and quality, coming to the abandonment of traditional notions about the roles and responsibilities manager to oversee and control the people in the organization.

How to manage people who do not see?

So what they believe, because it is the basis of a new chapter of leadership phenomenon.

#### **5. IT IMPLICATIONS ON COMPANY ORGANIZATION**

IT affects the organization of the company and changes its organizational features in the following way:

- Shapes the structure from mechanical to organic, or from hierarchical in adaptive,
- It is flexible enterprise system,
- Redesigns (despecializes) jobs, reduce the administrative component and the a / P is favorable,
- Pushes man from the organization, rationalizes and facilitates human work in all areas, especially in the operating center,
- Reduces the average size of the company and its organizational parts, large enterprises was transformed during the network of small enterprises,
- Influence to "economy of scale" comes into place "economy wide,"

- Behavior is less formalized, enabled the direct communication and inspiration for creative work and the establishment of centers of knowledge in the organization.

IT in the production made the production process flexible in this way enable the company to quickly customize the environment changes. At the same time, the rescuer workers routine and monotonic operations abolished many jobs and have pushed out executives and their assistants, whose salaries cost burden cost products.

The management system of IT has also changed its content and appearance. Pushed the mass of managers, analysts and professional experts. Electronic data processing, management information systems, decision support systems and expert systems are significantly change the look and features of the organizational structure of many companies. IT is reduce the differences in structure between small, medium and large enterprises, and between centralized and decentralized organization. For large companies, has allowed the flexibility of small, in the centralized organization of decentralized decision-making, and decentralized organization of supervision and control.

## 6. INFLUENCE ON CERTAIN PARTS OF COMPANY ORGANIZATION

Sense of information technology is enabling companies to quickly react to events in the middle. It is about the flexibility of companies that can not be imagined without introducing and application of information technology. It can be said that the flexibility of modern enterprise, out of IT in the first place on the list situational factors that shape the organizational structure of companies. Information company is able to quickly change production program and, in this, make greater productivity and higher quality of production / services. IT is the concept of optimal series realization. Computer-controlled manufacturing system that allows small plants to produce cheap products as well as a large factory with a large volume of production. In such systems, "economical volume" is the organizational parameters (division of labor, decision-making system, the size of units and mechanisms of coordination) have changed their look and a new structure that shaped the modern company provides new organizational characteristics.

Strategic top -IT enables wider specialization top leadership, which still occupies a central place in the strategic management and management companies. Computer support free leadership at the top of a series of operational and enables him to deal with and creative activities. Changes in the management of enterprise at the end of the eighties in largely confirmed the predictions Leavitt and Whisler and about the impact of IT in shaping the structure of companies.

In the top of the policy creates an "ideology", as the dominant system of values, ideas and fears that make business philosophy or culture of the company. IT has influenced the formation of ideology and culture of entrepreneurial companies. It reflects the unstable conditions in the environment, market orientation, distribution database, decentralized decision-making, active information and sensors subsystem and dynamic system of values.

Middle-part includes line management, and line managers who form hierarchy, from the top to the operating level. Here is the IT enabled two things. First, the successful control of parts of the summit, and, second, that this "relay system" fully assume computers. Time, which is provided to establish control of the IT enabled growth companies to large-scale (the so-called enterprise monster). On the other hand, pushing out millions of executives and professional staff from the middle level of IT leads to the reduction of size and reorganization of companies. The influence of IT in the middle level has contributed to change the look of the enterprise organizational structure as a whole. On-line information system is to replace a lot of analysts and executives. The structure has changed shape; from the "deep" is a "shallow". In addition to positive, this phenomenon indicative and negative implications. Namely, in the European, especially German manager practice intermediate level is considered to be basic for the recruitment of top managers. It is believed that the management of business schools are not sufficient and that the middle level of required starting level to the top of the guiding hierarchy.

German model of top security executives should not be ignored. He is, as experience and practice, standard form for companies that enter a period of change and learning. As part of the European economy, the Yugoslav economy and the company is closer to hierarchical model (deep) than the model dehierarchial (shallow) structure of "information-based companies" to see him and describes Drucker (1988). The second question is whether favor "sharp" or "external" pyramid, of course, depends on the context of companies separately.

Operational core.-All Operations in the structure of the executive functions of companies (acquisition, storage, production, internal transport, control, expedition, etc.) Can be fully made informational. At this level is the highest possible level of technical capability. And is in many companies in developed market economies. In the Serbian companies in the technology is well work force with the financial accounting and commercial-operative, but is still insufficient from the production operative. Production operational, as most massive part of companies, is still "full". Maybe the reason for that the "siege" led to a large earthquake and the dramatic consequences for many individuals and their families. Serbian companies do not have the capital needed to resolve the problem of technological surplus on the way to make companies in the developed market economies. In the existing

conditions, when there is not enough capital for the current play, information of business processes, especially in manufacturing remain operative planning decisions for many companies.

Assistance staff.-This part of the organization can not be completely replaced. Similarly, the top strategic, IT, and here serve as a "tool to support complex quantitative modeling, to support decision-making and data processing." These are the specialist services companies (group), which is dealing with study activities, such as planning, research, development and etc.. This is an innovative part of the company. IT has changed the way communication between the members of the group and among the top strategic and functional managers. It is faster and intermedial. Computers have assumed the role information. Terminal at every office desk and allows you to connect to create centers of knowledge, as well as to anyone who wants to work can see each other, as he made. Times are back for the head executives (consultants, specialists). It can be concluded that IT has contributed to overcome the traditional organizational conflict between the lines and the tree, a part of innovative company's shaped of hierarchical in the adaptive organization.

Techno-structure. In modern enterprises they need to be part of the organizational groups of people who have technical knowledge, experience and skills. The introduction of IT has reduced their role in the software, monitoring and training of new staff, while other tasks such as operating research, studies and preparation of production downloaded computer systems.

The theory of international trade based on the technology

The level of technological development of the country in modern conditions chooses its place and role in international exchange. This has contributed to a theory of international trade based on the existence of technological gap among the participants in the exchange, but in a broader context and theory that is focused on the economy of scale.

## **7. THEORY OF TECHNOLOGICAL GAP**

According to Pozner, which first developed the theory of the technological gap process innovation (the appearance of new technological processes and new products) is a continuous process, the country in which these innovations occur will enjoy for some time a technological advantage in the production and trade of these products. Through the process of imitation by other countries, this advantage disappears.

This theory develop and accept Hufbauer to a Pozner-Hufbauer hypothesis: international trade is based on generating and diffusion of superior technology. How innovative countries mainly from the circle of are developed, to the international trade flows will be directed from the developed to the underdeveloped countries. Developed North will specialize in production and export of products based on technological changes, while undeveloped South will be mainly importer of these products. Studying how international trade is performing in the context of diffusion of innovation and technologies. Krugman in his research that the model of trade remains unaltered in the later period: North developed new products and exported goods, while undeveloped South products and export of old but with continuously changing structure of trade. Thanks to all the good diffusion of the first products and introduced in the north, and then in the south.

## **8. THEORY OF FOREIGN DIRECT INVESTMENTS**

Direct foreign investments (FDI) is the phenomenon of international economics from the 60's and is associated with strong affirmation multinational companies and their business on the basis of direct investment in the machinery and marketing infrastructure in a number of countries. Many authors of this type of companies granted attribute international transfer agent that has enabled faster movement of goods and services (capital, technology and management) between the national economies. Direct investments are in fact the specific characteristics of multinational companies understood primarily as an increase or update from one country (origin) in the second when the monitor flows of capital, technology and entrepreneurial experience to another country in the production of goods for local and / or third (export) market . This transfer service package remains under the control of parent company that invests (parent company) regardless of the production and marketing activities carried out in the branch located in another country. It is usual that transfers of these factors are combined with import intermediates from parent companies that are installed in the manufacturing process or the contents of export of finished products that branch and placed in the framework of its marketing activities. In that sense, the theory of direct foreign investment can be understood in the right sense of the word as a theory of international second hand engagement and international companies (International Business Enterprise).

Such theoretical approach can give the answer to three basic questions:

1. why do companies go to foreingh countries,
2. how can these companies successfully compete with local firms who do their business I known business surrounding and

3. why did the companies choose to rather come in to foreign markets over production, rather than exporters or givers of licences.

Explanations of international trade through the theory of direct foreign investment essentially consists of four models that are by many authors for the most part complementary.

## **9. THEORY OF INTERNATIONAL INVESTMENT PORTFOLIO**

Starting from the characteristics of portfolio investment as international investment in securities, conventional economic theory is based on the model portfolio investments explained to the international movement of capital as factors of production. In this model is based on the difference in interest rates by countries as the key factors that causes international capital movement. The second hypothesis is that the multinational company through this kind of investment is expected to realize more revenue and profit compared with the local business because it can assume (it) many of the costs of international business more efficiently by local partners. Through a higher income that will generate in relation to the local partners can cover a range of costs related to distance, information gap, forbidden band, cultural differences and other aspects that have the advantage in possession of superior knowledge, business and management experience and widespread organizations in the world in relation to local businesses. On the basis of this second hypothesis explains the cups of local companies by multinational companies.

Investment of foreign persons in the domestic company can be made in the form of investments in the form of money, machinery, equipment, securities, and in two ways:

### **1. Investment in basic capital**

There are three categories of legal persons who can be observed as foreign:

- Foreign persons with base in other country;
- Serbian company with more than 51% of foreign capital;
- Company which a foreign person established in Serbia;

## **10. METHOD OF INVESTMENT**

Investing in the establishment of foreign persons or in community with the domestic face, this is determined by the proportion of investors, investment obligations, terms and form of investment in the joint capital. Changes in the founding share capital may arise only by changing the registration.

### **FORM AND PROCEDURE**

The contract must be in writing, certified by the competent court. Foreign person can not be the founder of companies that would jeopardize the unity of a system (international telecommunications network traffic, network integrated services, satellite telecommunications). The right to invest in these companies issued Federal authority on the basis of competence required for economic relations with foreign countries within 30 days of receiving a request.

## **11. INVESTMENT BASED ON CONTRACT OF FOREIGN INVESTMENTS**

Investing in funds that the company operates. Investor does not belong to the right to participate in the enterprise management; the right to profit on the basis of invested capital or in the case of liquidation will not receive funds by the end of liquidation.

The aim of investments is the realization of one or more specific tasks in order to get your name so that funds remain in the ownership and state.

Elements of the contract are: (1) contractors (2) company in which investment is made, (3) objectives and operations of the investment, (4) for the distribution of profit, (5) management of the joint work (6) the obligations of investment; (7) for common tasks, (8) the duration of the contract; (9) the right to return, (10) the right to terminate the contract; (11) solution to the dispute;

## **12. THEORY OF MONOPOLY ADVANTAGE OF DIRECT INVESTMENTS**

The company that wants to invest has a monopoly advantages that allow it to keep profitable branch of the local competitor. These advantages are the specific locations where the company than to invest directly in the production branch because it is in its possession (can not get on the open market, for example, technological know-how, brand, etc.). In this context, observing, this model explains the first direct investment over the theory



of industrial organization, but the theory of international capital movement. The monopoly company that comes in direct foreign investment can be found in the two broad categories: the possession of superior knowledge and the ability of economies of scale. In consideration of the theory of monopoly advantages direct foreign investment should make a distinction between vertical horizontal and investment abroad. Horizontal investment occurs when a company enters the international market for manufacturing the same products or products that have products in the home plants (in essence, says is the geographical diversity product line, company). Contrary to this, vertical investments appear when the company through direct investment goes to other markets in order to production intermediary (semi / components) that will be used as input for their production plants in the home (vertical integration back) or that will use production or marketing of their products in the later stages of the final nearer customer (vertical integration in advance). Both modalities are characteristic for certain activities ( "back" the practice of investing in oil and mining, and "forward" refers to all the possibilities for export as, for example, assembly production or sales branch).

Horizontal profile direct investments in the framework of this theory is based on the possession of superior knowledge and the concept of product life cycle, while the focus on vertical investments implemented in accordance with the principle of achieving position.

Superiority in the available knowledge related to the intangible experience (experimental knowledge) that enables companies to gain a competitive advantage in the operating business. It is the technological, management, organizational, marketing experience when the monopolistic advantage of running on the basis of control in the use of such knowledge, which was transformed in the form of various products. The company through direct investment abroad creates conditions that the product is controlled by their knowledge that can be transferred to foreign markets with little or almost no cost. Superiority in the possession of knowledge essentially allows companies to invest abroad to create different products (differentiated products) on the basis of physical differences (derived from the technological experience) or psychological distinction (derived from marketing experience), so that is able to exercise their dissociation of the products of competitors. In this way, the company achieved and the degree of control price and sales, which allows her to achieve "economic rent" in the knowledge understood as an asset. Economy of scale is also present in the explanation of this theory. Through the mentioned horizontal or vertical integration, direct investment in foreign multinational company can realize the benefit of economies of scale that can not be achieved by local (not multinational) company. Moreover, economies of scale that can be reached through international specialization in the production of many products in many markets, can allow a multinational company to achieve competitive advantage in the market (including home country) but the benefits are for calling in locating production in the countries with the lowest costs.

The theory claims that the monopoly is direct foreign investment emerging as the possibility of some companies to achieve monopoly power in foreign markets. Multinational companies are by definition institutions that are synonymous or show the imperfection markets in some way and almost certainly would not exist in the world of perfect competition. On the other hand, this theory throws light on the phenomenon of reverse investment and direct investment of these companies from different countries in the same home country. It is a fact that the knowledge in terms of assets before the characteristics of the company but the country, and therefore no contradictions in the theoretical framework of this approach which, for example France company invest in Serbia, while Serbian company invests reverse in Hungary. Moreover, because the two companies have different products attractive to different market segments of consumers, and they may belong to the same industry (Michelin has invested in Hungary, while the Firestone located in France). From this theory can sense (but not emerge implicitly) that the possession of knowledge and other specific forms of intangible property (Hi-Tech assets) companies necessary but not sufficient condition for direct foreign investment. Another key requirement is that a company with such monopole advantages can provide the biggest economic rents from the ownership of this property in the international business through the organization of production under his patronage and control. In other words, means that its business rational motivation for profit or return on investment in foreignh must be greater than the effects of export or license.

### 13. FRANCHISING AGREEMENT

Represents a combination of several different contracts. Should accurately predict the mutual rights and obligations of contractors, on the basis of which the long-term contracting with one hand, donor franchise committed to make successive delivery of goods and to provide certain services, transfer of knowledge and experience, and on the other hand recipient franchise committed to pay for the compensation.

Characteristics of franchising the business use of trade names, characters, look outside, experience.

Rights, obligations and responsibilities contractors are:

Giver of the duty for franchise: help in finding seats, and the office building, staff training, assistance in management, advertising, propaganda. Obligations of the recipient franchise: room arrangement, promotion, sales, procurement of goods giver or third persons, payment of compensation, the duty of bearing control.

## **14. THEORY OF INTERNATIONALIZATION OF DIRECT FOREIGN INVESTMENTS**

Theory of internalization is a supplement to the theory of monopoly advantages, offers an explanation for why direct investment abroad may be more effective way of using resources and markets abroad, compared with export licenses or arrangements. The basic postulates of the theory of internalization are:

- market may miss that efficient use of factors relocate services and products because of external effects (externalities),
- market and companies are alternative forms of organizing the exchange of factors necessary for the creation of services and goods,
- exchange is internationalizing in the company when such costs are lower than the market exchange,
- multinational company is an institution that internationalize exchange factors between countries through direct foreign investment (international production).

Internalization theory considers that the company can replace external market with trends in the use of internal factors (service) and the goods when the cost of such activities lower than the cost of organizing the market. So, the company will fall when the internalization of externalities may include more through internal transfers, but by selling and buying in the market - multinational company invests abroad in order to grasp external effects in order to include them in the price. In this way, multinational company achieved international transfers of goods, services and factors of a lot more efficient than the external market (eg export or sale of licenses). From perspective theory of internalization of multinational companies institutions are formed to produce and use the effects of the internal market.

## **15. ELECTION THEORY OF DIRECT INVESTMENTS**

Theory of monopoly advantage and internalization of the explanation of foreign direct investment in the other frames and failed to explain why a multinational company in the modalities of inclusion differ in practice from country to country. The theory is based on the paradigm imperfection markets see this company as oligopolies who shirk their specific advantages based on ownership control of property that have. It is by nature intangible (trademark, copyright, know-how), and allows differentiation of products that competitors can not copy their protection in one way or another. This election factor ownership model at the same time, added two more - internationalize and location-specific advantages to a combination of elements of previous attempts to explain the theory of direct investment abroad. According to the Creator of this theory Daning, specific advantages based on disposal of property ownership is in favor of preferring company that invests, and the specific locations are in favor of preferring the country in which to invest. Thus, the explanation tendencies company to join the international production flows through direct investment is in the same meet three conditions:

- disposal of certain proprietary content provides advantages over other similar companies on the same side of the market (intangible assets),
- the company must be profitable to use the resources of its assets in combination with available factors that are located on foreign markets or to the advantage given observance markets through exports (location factor),
- must be useful for the company, which has these advantages to them alone, but uses them to sell or to give them the right to use other foreign companies (the process of internalization).

Election approach suggests that all forms of international production in all countries can be explained in accordance with these conditions. Internalization as a framework election theory helps in explaining why this company propose direct investment, various forms of contract arrangements (non-equity forms) when exports can not be realized.

## **16. DOWNSIZING PROGRAM - SYSTEMS WITHOUT WORKERS**

Downsizing is explained as a way to more agility of large companies. The essence of the program activities is redefining the strategy, structure, systems and behavior of employees. The aim is to create "appropriate size companies" through the rejection of all unnecessary in order to improve performance.

Forces that contribute to the widening of cuts are: (1) The concept of competence-type umbrella for everything and everything turns to basic competence, and everything else moves from its structure; (2) Fashion management-imitates the other to be in the trend is irresponsible move, which sacrifices long-term stability in order to short-term interest (3) pressures from the environment-market, market and financial institutions as a powerful influence on the strategy of reducing the spread, (4) Inter organization learning program cuts through frequent interaction between managers who share experiences and consultants who similar companies impose the same model for reducing the company;

Forces of resistance are: (1) Behavioral-management approach, which does not achieve results in the dismissal, provoking feelings and behavior of employees, reducing the trust and loyalty, (2) Ethics elements radical changes companies often use in speculative purposes announcement restructuring of provoking and confusion about stock value movements on the BSE. Managers are recommended for a higher degree of ethical and moral responsibility for human resources management.

## **17. FOREIGN DIRECT INVESTMENTS (FDI)**

In the definition of global relations in the world market (not only today but also in economic history) have a significant place and investment in foreign - portfolio and direct. On the road to the globalization of world economy, this investment had a significant contribution because of their cumulative effects to improve the overall level of international commodity exchange. Foreign direct investment (FDI) is crucial link integration of production and marketing functions with the world market. As a category of international economy, FDI in essence become an important element of investments and production strategy of modern corporation, and as an integral part of the process of internalization and globalization are often taken as a necessary precondition to the company save or make expansion in international markets if they do not want to deal with loss of your competition (the EU in 1994.)

The importance of the role of FDI activity is increased tendencies growing liberalization of international trade flows. Easier said they are interrelated, which means to increase or loss of almost one has direct implications on the situation and level of achievement of the other. Practice has shown that earlier assumption that the FDI activities reserved only for large MNC (American, Japanese or European) do not apply. Today in the greater such arrangements related and medium-sized companies, since the flows of foreign investment multiplicities recent years with new and numerous participants from new industrialized economy that is competitive in the global fight through include strong internationalization of its activities.

When the products can deliver the same market development of trade FDI activities, often with each other in the relation to the matter substitution. Usually strategy or affiliation concrete company and the conditions prevailing in this environment. complementary effect occurs when FDI enlarge trade exchange as to the investment creates a strong background on the market, because it increases the activity of exports, and movement of goods from some other point in space where to invest capital. The spread of markets is casual effect because of the production from FDI activities doesn't need to be only a narrow or local market but can not include segments that previously were not covered as only suitable for the increase in the scope of international exchange at a broader basis. Generating trade is usually through FDI engagement, because this is initiated by flows that follow such decisions - placements of capital goods, equipment, knowledge, service, and then the exchange of parts, components, components or other inter medial products that are necessary for the operational functioning of such registration put out from the national economic space.

Empirical research is shown a positive correlation between international trade flows and FDI activities. It only goes in favor of statements on the economic interdependence of the world reproductive cycle and the increasing trend in modern conditions intense due to the influence of forces, the technological process and competition (with the affirmation of the process of liberalization, weakening of barriers to international movement of goods, services and factors of production, increase the importance and comprehensiveness international specialization that have created a general climate for the expansion of international transactions economic). In other words, the ability to organize international business activities on the whole way between the different countries today is a critical factor securing efficiency and competitiveness of enterprises, because the process of globalization, but took Maha so that in any sense, becomes the setting of national, economic development of each state. (UNCTAD 1994).

In traditional (Foreign Trade) terms of international economic integration is often viewed through the expansion of trade links on the basis of larger flows of trade and exchange with one factor, and the activities of the state in order to reduce the obstacles to these flows as the main stimulus to increase the degree of integration with the other side. This type of politics integration (shallow integration) leaves behind participation in the international division of labor on the level of production. It is the international production, which means that the company has control of certain productive assets in more than one country is usually through FDI creates engagement, and through various non property modalities of engagement. This type of involvement on the world market and realization of the connection through (artificial) national border changes the character and profile of international economic integration company focusing it from shallow to deeper integration. Therefore, the investment abroad, as opposed to pure trade do not perform only pre transactions, but have a broader horizon indicate the long term because of the connection between business activities located in different countries. From the aspect of development of international marketing in the full sense to mean that the company must make a combination of successful integration of international trade and production functions in accordance with its strategic opredeljem

that is directed to the complete and long-term inclusion for the international division of work on the world market (in the global economy).

The reasons for direct investment may be different starting from the practical (such as the mandatory presence of marketing services) or need to be on the spot follow the final consumers and their needs and desires to the product adapted to local conditions, tastes and standards and to providing opportunities for the acquisition of technology, avoiding trade restrictions, use the advantages of lower costs of production. Practice has shown that decisions on investments abroad are not motivated only the influence of one factor, but more often depend on them in each specific case. The difference occurs depending on the sector where to invest, size and profit companies, in the form of direct investment which is carried out, etc..

As the phenomenon of the world economic scene from today's point of view, FDI are realistic enough contributed to fogging between national economies, but they had a significant influence on the direction of economic development of countries and their integration into the wider economic space that offers the world economy. World FDI flows amounted to 4-5% of total gross domestic investment (developed and developing countries) and are about 4% of the value of world exports. From the years, branches and regions, the total value of FDI in the world are moved to different pace and intensity, but it is still reached in 1993 the level of \$ 1,800 billion compared to \$ 470 billion at the end of 1980 year. In the period from 1983-90 the placements in the form of FDI (outflows) had an average annual growth rate of about 30%, which is more than three times compared to the growth of world exports, or four times faster than the rate of growth of world GDP. From the OECD region are leading in placements and in obtaining FDI (in-flows). After 1990 this year the group played a leading role in the flows of FDI: In the period 1991-1993. year, has 95% of the total value placed funds, and 42% in obtaining these funds. From the leading regions in this flow is dominated by Triad: total in the Triangle USA-EU-Japan is the 4 / 5 Placement (out-flows), and about 60% of the total inflows (in-flows) of world FDI flows.

One of the features of the world FDI flows in the period after 1990 is important to divert the developing countries. These countries are from 1990-1993. year attracted \$ 80 billion FDI or 55% of the total value (in the period 1980-90 the annual average was about 21% of shares billion \$ 19). This phenomenon can be explained by recession and the slowing down of activity in the developed countries, but also with strong process of internationalization of the developing countries. More than 2 / 3 of FDI were directed to the markets and companies in 10-15 countries, mainly from South-East Asia and Latin America. Estimate is that in the developing countries in 1993 the invested funds on the basis of FDI on the level of total world FDI in 1986 year.

At the same time, a characteristic phenomenon of FDI activities is the most dynamic economies of South-East Asia and Latin America with its own investments, which have amounted to \$ 9 billion in 1992 year and \$ 14 billion in 1993. Tajvan, Korea, Thailand, Singapore are on the list of 10 biggest investors in China as a market that is up to invest in developing countries (although it is China in this period and only started to invest in other countries). Most dynamic Asian countries through its companies not to invest resources in the regions of the country but is there and as investors in the mature economies (EU and USA). As regards the countries of Central and Eastern Europe after 1990 the inflow of FDI on the basis continued to grow although the investment was at a level of about 3% of the total world FDI. The explanation should be sought in the problems of transition of these countries in this period that are held in conditions of adverse tendencies in the domestic economic plan (although the status of individual countries with different aspects of this).

In any case, the need for deeper integration of the world economy through engagement through significant investment by overseas today is a trend that is not in order to avoid building up competitive advantages of companies (including positions in the "domestic" market). Liberalization of economic flows, technological progress, and economic growth of business conditions at the international level may be an explanation for weakened efficiency of shallow integration with national state (the focus is on classic foreign trade with traditional financial flow). This led to a dramatic reversal to the intensive financial integration in the last two decade on the basis of integration of production and marketing functions of companies.

Although FDI activities by the profile and essentially mean more interest in business market behavior of the world market, the conditions prevailing in the global economy is not neglected or portfolio engagement. Since 1992 the portfolio investments have amounted to about \$ 320 billion, which is ten times increase in comparison with 1980. year, when they amounted to about \$ 30 billion. Defining the international business through foreign trade engagement is not propulsive, but are integral involvement in the world market must be achieved through the integrated engagement of all resources (production, marketing, etc. financial) in order to encourage global competitiveness. According to OECD estimates of international flows of investment income on the basis of FDI and portfolio investment are significantly increase participation in property abroad in the value of total assets of an enterprise with 6% in 1980 year to over 15% in 1990. in relation to the value of commodity exports in the world. The total value of FDI, portfolio investment, trade in services and other flows on the basis of investments (dividends, royalty, and intra company funds) today reached a level of about 70% compared to 1980 when they have done about 45% value of commodity exports in the world

From the management aspect, and especially international strategic business options, FDI engagement can be achieved in several modalities of which are two:

- Brand new activity (Greenfield Investment)
- Investment into existing companies and activities (Mergers & Acquisition).

Recently is the leading form of FDI activities was found a new activity (or branches), which means "start from scratch." Companies through direct investment engage in the building or the establishment of new factories or activities included in its integrated strategy at the world market. Here are the leading actors MNC or TNC and major international companies. According to UNCTAD there are today about 37,000 registered companies (parent company) in this way controlled about 206,000 international branches (foreign affiliates) throughout the world (Table 5).

During the last ten years of investment abroad in ever-increasing extent focus on investments in existing companies and activities (M & A) which is in a different way wider world network companies. With the intensification of the process of internationalization and globalization, M & A activities have become all accepted practice in the international market, which includes the activities of the enterprises located in different countries. This type of international investment is made either in the form of acquisition and integration (mergers) or taking over or downloads companies (acquisition, takeovers, and buyouts). Processes taking over and acquisitions of companies (M & A) at the international level are taking place as between large firms and between medium and small. Such activities were typical for companies not only from developed countries but are included in these trends and companies from developing countries as well as from countries in transition (started the privatization process). Although the M & A activities can be considered one of the modalities of FDI, because of their specificity in fact represent a very radical way of combining or connecting companies. This aspect of business in the international market (which is characterized by evident features) has significant strategic dimension in the context of international marketing management. The explanation for their activity and the promotion of the last ten years can be found in the structural factors of the international environment, where key elements are:

- Process of business globalisation,
- Increased competition on international intensive base,
- Improving the efficiency and the need for its achieving,
- The availability of expensive technological solutions and improvements.

Modern M & A activities can be viewed in three basic modalities, which appear as:

- merger,
- acquisition, takeover,
- leverage buyouts.

Annexation (merger) means the case when the two companies merged to create the company (usually in the number of cases) of integrating, or by connecting their interests.

Download (acquisition, takeover) occurs when a company invests funds or buys another company (or parts of other companies) so that it appears as a new owner or control companies. It often occurs when the download comes to leaving some activities or programs, and one company simply sell the second part of the work in the other company wants to enter or expand their him (like) business.

Shopping (buyouts) is essentially a form to download and acquisition companies or branch (part of) the company transferred the property and at the disposal of the new owners. In recent years, many such jobs were the form of specific purchase or Leveraged buyout (LBO). The job of borrowed means using or giving assets (property) companies, which bought the property as a cover or the issuance of its shares, which depends on the business situation at the time that follows. Given the multiple opportunities that are available to customers, LBO may mean that customers are confident in the market perspective purchased the company, but may have elements of strategic maneuver on the market), which depends on customer preferences and strategies).

Motives for investment funds via M & A modalities are in the need for adjusting the terms of the international environment. There are many reasons, among the most important are:

- The need to improve business and operational activities,
- The possibility of achieving higher profits,
- Political climate and trends of deregulation in many jobs at the international level.

With the M & A activity may improve the ability of companies in operational activities for the merging or annexation of other companies can relatively cheaply and quickly to achieve overall growth and development, or allow the spread of business in new markets and entry into new programs. Buying new companies or certain branches can create the space for greater profit, especially if you realize favorable purchase. A similar effect is possible and the purchase of parts of companies or branches then the consolidation exercise and create space for new undertakings. On the other hand, wise investors theoretically can borrow money to buy enough shares to control the company, sold the company to repay the debt and to the win. Already mentioned structural factors supported the influence of current events (program of single EU market, economic growth and intensification of international financial integration) led at the end of 80 years to "merger mania" among the most developed regions of the world. In the period 1986-1990 year of international purchasing companies amounted to about 70% of the value of FDI inflows in developed countries. Leading countries in this regard were the United States

and United Kingdom, where the rate of growth of these international companies to download the year 29% (USA) and 70% (United Kingdom). Similarly, it was with the countries of Western Europe, although the way the campaign for Europe 92 "over 75% of foreign companies to download any of the companies in the region. The practice of buying and downloading company was in the period to 1990. The most intensive in the U.S. market - in the period 1986-1990. The foreign companies were taken over by 3,643 companies, which is the value exceeded the amount of \$ 245 billions. Period after 1990-1992 year is somewhat characterized some stabilizing these flows in the developed regions of the world and tendencies further expansion of these practices after that to this day. These processes were present not only within the limits of industrialized countries, but also the developing countries but also from developing countries - primarily from the group that is still the beginning of 80-years of intensive joined the mainstream of internationalization. Was realistic to expect that in the period after bum M & A activities in the international plan to end 80 years of the event a new period that is at the moment is characterized by focusing attention on the integration and rationalization of the created world network of such companies in the first half of 90-years. Moreover, the prolonged impact of these structural factors in the period 1992-1995 the year will certainly keep the importance of international M & A activities as important modalities of implementation of practices in the future FDI (UNCTAD, 1994).

## 18. CONCLUSION

In the definition of global relations in the world market (not only today but also in economic history) have a significant place and investment in foreign - portfolio and direct. On the road to the globalization of world economy, this investment had a significant contribution because of their cumulative effects to improve the overall level of international commodity exchange. Foreign direct investments (FDI) are crucial link integration of production and marketing functions with the world market. As a category of international economy, FDI in essence become an important element of investment and production strategy of modern corporation, and as an integral part of the process of internalization and globalization are often taken as a necessary precondition to the company save or make expansion in international markets if they do not want to deal with loss of your competition (the EU in 1994.) When the products can be delivered on the same market developing the trade FDI activities, are often with each other in the relation with substitution. Usually it is a matter of strategy or a determination of specific companies and the conditions prevailing in this environment. Complete effect occurs when FDI enlarge trade exchange as to the investment creates a strong background on the market, because it increases the activity of exports, and movement of goods from some other point in space where to invest capital. The spread of markets is casual effect because of the production from FDI activities doesn't have to be only a narrow or local market but can not include segments that previously were not covered as only suitable for the increase in the scope of international exchange at a broader basis. Generating trade is usually through FDI engagement, because this is initiated by flows that follow such decisions - placements of capital goods, equipment, knowledge, service, and then the exchange of parts, components, components or other products that are necessary for the operational functioning of such registration put out from the national economic space.

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## **LEAN MANAGEMENT AND JIT LOGISTICS, ESSENTIAL ELEMENTS OF THE NEW INDUSTRIAL CORPORATION 'AGILITY'**

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***Summary:** The definitions 'Lean management', Toyota production system or 'Just in Time' production system define, with slight differences, the same concept, that of production system, original from Japan and extremely efficient. In the present paper are introduced the characteristics of 'Lean management' concept, ways of achieving a corporation 'agility' by extensive usage of KANBAN, as well as the classical mathematical approach of KANBAN, together with Ohno's formula, Little's formula, Morgan's formula and Morgan's expansion are described in the end of the paper resulting from there the aims of applying them.*

***Key words:** Lean management, agility, corporation, Just in Time*

### **1. LEAN MANAGEMENT AND ITS CONSTITUTIVE ELEMENTS**

'Lean management' is the name given by the members of a group of American researchers from Massachusetts Institute of Technology, to a special type of management which they noticed and analyzed at the Japanese car manufacturers. This system was initially developed by two Japanese engineers within Toyota company (wherefrom the name Toyota production system). The two important elements of Lean management are 'Lean Production' respectively the way in which the production system is organized and 'Just in Time Logistics', which refers to the organisation's supply/acquisition system. To all these other vital elements are added, such as 'Kaizen', which defines the permanent improving system of all activities and 'Total Quality', meaning a quality standard which implies 'zero mistakes'. 'Lean' word which means 'thin' was a result of the fact that the Americans noticed that the Japanese could produce with the help of this management system, using the same resources as their western competition, higher quality products, in higher quantity, faster and in the same time, much cheaper than the last ones.

The most important part of JIT is the 'production fluidization' concept and it mainly refers to leveling the production quality and time, respectively to a balance between production lines. In this approach production planning is done precisely for years, months, decades (periods of ten days) and one day. One of the methods used are the so-called 'kanban' (cards), an information system for a harmonious control of product quantities in each process. In other words, the results of the inferior sub-sequential process is ordered, respectively the necessary products for the next step, thus eliminating stocks.

The third characteristic of Toyota system is called 'shojinka' (reducing the number of operators in a workshop for better work efficiency). The operators are ready to be multi-qualified and to serve more equipment in different processes, distributed along a production line in the form of U letter. Based on this system, it is possible to raise the productivity and to attain 'shojinka'. At the same time Toyota uses techniques such as 'visual control system' which uses control standard operations and 'andon' (an electric system for detecting quality problems in each process).

The techniques mentioned before form an important part of Toyota production system. But maybe the most important is the subcontracting system through which the parts (components) are obtained, called JIT. For business groups like 'keiretsu', main/mother companies order a part of the products to associated companies, or to other companies connected to them. The main company controls the subcontractor regarding the quality control and raising the productivity or cooperates with the subcontractor from the first stages of production conception up to design. The advantage of this system is the fact that the subcontractor can have a very good

design, high quality and delivery in time, using the capacities of the main company, at a low cost. JIT system is implemented not only in an organization but in all companies groups, including the subcontractors. Attaining the 'lean' production system, mainly in the 70's within the Toyota firm by the Japanese engineers E. Toyota and T. Ohno and distributing it subsequently from Japan to USA and Europe and completing it with Kaizen philosophy of continuous improvement typical for Japanese represents a huge step forward towards production activities management.

## 2. EXTENSIVE USE OF KANBAN, 'AGILITY' ATTAINING METHODS

### Achieving production through the classical method. 'Pushed' production

Achieving production in the classical way, the so-called 'pushed' production, implies launching the orders to the first working place of manufacture line and using some stocks of pieces resulting from previous operation \*-unexpected events, working rhythm different at each position, and deliveries should not be synchronized with production program. Apparently, the big existing stocks protect production, but a more careful analysis shows that the funds the organization blocks by keeping them in stocks are significant.

### Achieving production through the Japanese method. 'Pulled' production and Kanban.

'Pulled' production, introduced by the Japanese, implies launching the orders at the last working place, which addresses an order to a previous operation and so on, until the first working place of the line. The advantage lies in that exactly the necessary quantity is produced, eliminating the stocks almost entirely, but not completely, this time either.

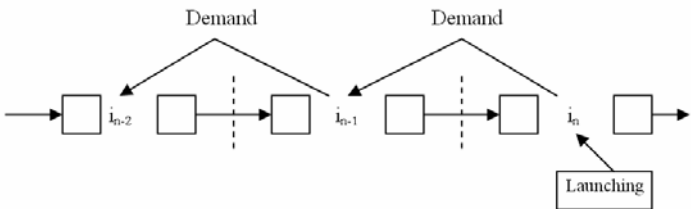


Figure 1: 'Pulled' production

Two variants of Kanban methods are known:

\* Kanban method with two cards – uses a card for transportation, the other for launching the production in the factory, there is a minimum intermediary stock (figure 2). In the simplified scheme we can notice that from a downstream working place ( $i+1$ ) a card is transmitted – transport (1), a container is brought from the intermediary stock (2). From here a launching-production card (3) is transmitted to the working place, on the basis of which pieces are produced that complete the container transmitted to the stock (4).

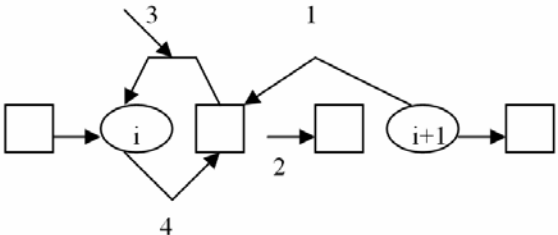
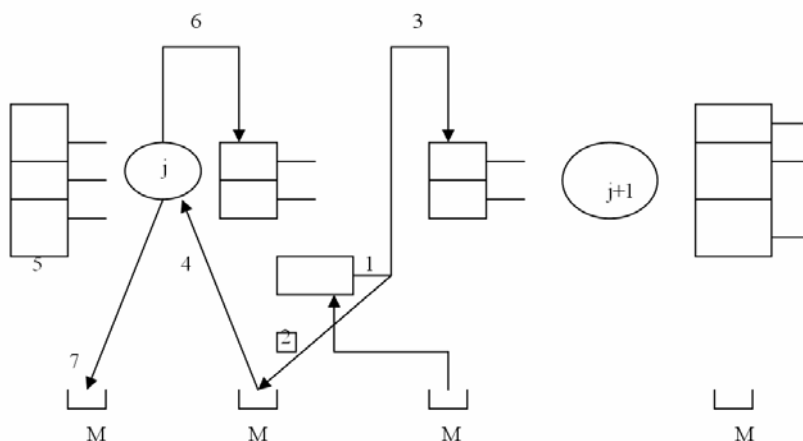


Figure 2: Kanban principle with two cards

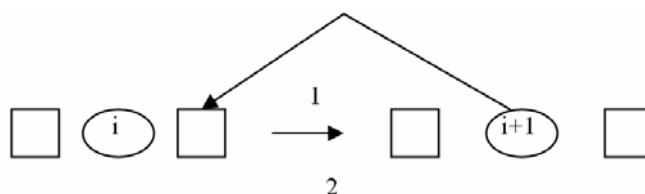
Practically (fig.3), at each working post there are two cases in which cards are held. In the example given, at ( $i$ ) post an order arrived for one container transport (1). The launching-card that the container had is put into the case of a container (2), and to this one a card-transport is attached that is held up to the post ( $i+1$ ). In the post's case ( $i$ ) being a card for production launch (4), starts the processing of a batch that was found in the container (5). Its transport card is put in the case (7), releasing a transport from the post ( $i+1$ ). The container with processed pieces is put on hold to wait for the transport (6), having attached to it a launching card.





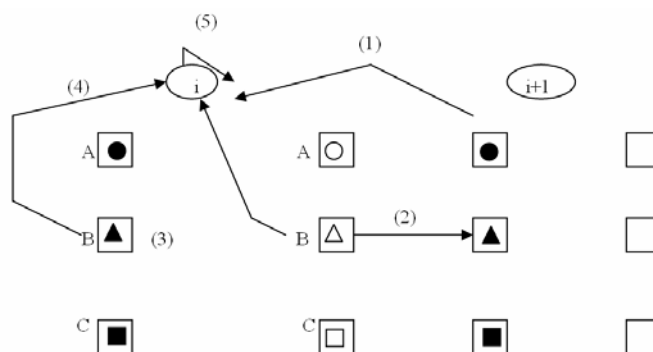
**Figure 3:** Kanban usage with two cards

\* Kanban method with one card (fig.4) uses only the transport card (1) through which the transport is ordered (2), the working places (i) having a constant rhythm of labor previously calculated (there is a production program). The quantity of pieces is identical for all containers.



**Figure 4.** Kanban principle with one card

Through Kanban method different batches of pieces can be launched in production and transported (figure 5). For example, if a transport card (1) has arrived for reference point B, it is taken to the working place (i+1), (2) launching for processing (3) another batch B. After processing (4) the batch is put on hold (5).



**Figure 5:** Kanban usage with one card in the inhomogeneous production

If JIT method is linked to an informational system, then the information from the cards can be given through bar codes that are read with special optical equipment. These codes are useful because:

- they direct the flux of materials from the suppliers, without stopping the operability,
- the system can be linked with the production planning-programming activity.

### 3. CONSEQUENCES OF USING KANBAN

The implementation of JIT method, respectively the use of Kanban is conditioned by some transformations that should take place within the organization (especially we refer to organizational, technical transformations but also behavior changes of the staff). The method's efficiency depends on the strict observance of the following rules:

- Not a single reference point should be processed without the existence of a launching-card. The operators can perform other activities (maintenance, improving, taking part to quality courses), if there is no card in the case, ,
- There is a single launching-card and a single transport-card for each container, and the decision regarding the number of containers is taken by the managers very carefully,
- Only standard containers are used, which are filled with a prescribed quantity (not more, not less),
- It is forbidden any transport without the existence of a transport-card.
- It is forbidden the processing of a quantity bigger than the one indicated in the card,
- The card is always attached to the container,
- When there is no card, transport and processing stop, other activities are taking place at the working place.

**Kanban and TQC.** A special attention is given to the quality of the pieces in the container. They all should comply because the broken ones compromise the 'upstream' production. TQC is essential in a system that uses Kanban.

**Kanban and contractors.** A new relationship should be set with the contractors. They should be convinced to deliver daily small and of good quality batches, the orders can be taken over the phone too. Response time for an order is one day. With bigger contractors a long term contract should be signed and possibly a higher price if the JIT requirements are met, in this way they become a link in the processing chain. Kanban method implies choosing the suppliers according to delivery quality, seriousness manifested and the relationships established between the two parts. This fact leads to reducing the number of suppliers and increasing the deliveries frequency, so that I can get to stocks close to zero.

**Kanban and organization redesign.** Kanban method implies reorganizing the plan of the sectors and the general plan of organization, as it is necessary to revise the transport fluxes and distances, the organization become in this way more compact.

**Kanban and human resources.** Regarding the human problems that appear as a result of Kanban implementation, we can notice that it leads to a rise in stress related conditions to which the operators are subjected. These should be chosen among the ones that have the skills of working in a team (true also for the managers). For operators retribution, the salary based on competence is a less adequate, it is good for flexible production or when an increased productivity is required.

**Kanban and organization general management.** Applying Kanban method depends also on adopting an assembly of coordinate actions on the product, both in the research stage and also during the production, administration, organizational innovation phases, which can insure the amelioration of the situation in a relatively short time. Still, the complete implementation of the method requires a few years.

The influence of Kanban method on the organization is complex, it acts on the quality and stocks. At the same time there is a reduction of working cycle duration, working surface, concomitant with reducing the costs and increasing the efficiency parallel with observing the delivery terms specified in the contracts.

### 4. THE CLASSIC MATHEMATICAL APPROACH TO KANBAN THEORY. OHNO'S FORMULA. LITTLE'S FORMULA.

The mathematical approach to the production system developed by Ohno is emphasized in the equation used to calculate "the Kanban number", which plays a crucial role in this system:

$$y = \frac{D(T_w + T_p)(1 + \alpha)}{a} \quad (1)$$

The following notations are used:

y – Kanban's number

D – demand per unit of time

$T_w$  – Kanban waiting time

$T_p$  – processing time

a – container capacity (not more than 10% of daily requirements)

$\alpha$  - policy-dependent variable (not more than 10%).

In the special case in which 'a' = 1, 'T<sub>w</sub>' and 'α' = 0, formula (1) describes a guided conveyor belt. It also describes a transmission gear, and can be reduced to Little's formula as follows:

- The policy-dependent variable is eliminated, which results in:

$$y = \frac{D(T_w + T_p)}{a}, \quad (2) \quad ya = D(T_w + T_p), \quad (3)$$

T<sub>w</sub> and T<sub>p</sub>, the Kanban waiting time and, respectively, the processing time, make up the total time needed for making or assembling the proper part.

The engineers and researchers refer to the (T<sub>w</sub> + T<sub>p</sub>) sum as 'execution time', because it is the difference between the final time and the initial time of the entire set of operations needed for the production or assembly of a machine part. The execution time is made up of four elements:

- Value-added time,
- Installation/transformation time,
- Waiting time,
- Transport time, from suppliers as well as internal.

(T<sub>w</sub> + T<sub>p</sub>) represents "production time" in Little's formula, and its notation is 'F' (flow time). Replacing (T<sub>w</sub> + T<sub>p</sub>) with 'F' we get:

$$ya = DF$$

'Kanban's number' multiplied by 'a' (container capacity) gives us the maximum number of WIP stock units in the system. In Ohno's theory, this measure represents the stock level needed in order to maintain the cohesion of the process. In Little's formula its notation is 'I', for 'Inventory'.

Replacing 'ya' with 'I', the following formula results:

$$I = DF, \quad (4)$$

Where D is the "demand per time unit" and is equal to the production per time unit, assuming the initial and final stock of finished goods are equal. This is found in Little's formula as units manufactured/hour, and the notation is 'P'. Replacing 'D' with 'P', we get:

$$I = PF \quad (5)$$

Little's formula when used with the Toyota (policy-dependant) variable:

$$I = PF(1 + \alpha) \quad (6)$$

Little's formula can be written in many ways. Thus:

$$0 \leq I \leq PF \quad 0 \leq I \leq PF(1 + \alpha) \quad I = PF \quad P = I/F \quad (7)$$

In the particular case for which 'a' = 1 and 'T<sub>w</sub>' and 'α' = 0, Ohno's formula becomes:

$$y = DT_p \quad (8)$$

which, again, describes a guided conveyor belt.

If an equation is formulated on scientific basis, it must hold true in any circumstance. Little's formula and Ohno's formula meet this criterion. But more important is that the implications of an equation are more profound than its significations. These equations help form the specific prediction that, if the production time or the WIP inventory are variable, or both are variable, then production will also vary. Moreover, the equations forecast that, if the production time or the WIP inventory are stochastic variables, then production will also be a stochastic variable. One implication of these equations is that, if the production time or WIP inventory are stochastic variables, then it will be impossible to specify to the clients when their orders will be shipped.

## 5. MORGAN'S FORMULA AND MORGAN'S EXPANSION. THE EXTENDED TOYOTA PRODUCTION SYSTEM

Little's formula expresses specifically the inter-relatedness and inter-activity of WIP inventory, production time and production per hour. Morgan's formula expresses the interrelation and interactivity between customer lead-time (in days), finished goods inventory (units) and daily production, as follows:

$$CLT = -1 \left( \frac{FGI(t-1)}{P_1} \right) + \beta + x \quad (9)$$

Where: CLT = customer lead-time (number of days)

FGI = finished goods inventory (units)

t = current time frame

P<sub>1</sub> = units produced per day

β = days required to enter the customer order

x = transit days to customer

### \*Morgan Expansion

$P_1$  from Morgan's formula is the same thing as 'P' in Little's formula, except they are expressed in different terms. Thus, interchanging the terms would allow the unification of the two:

$$CLT = -1 \left( \frac{FGI(t-1)}{P\lambda} \right) + \beta + x \quad (10)$$

Where:

CLT = customer lead-time (number of days)

FGI = finished goods inventory (units)

t = current time frame

P = number of units produced per hour (from Little's formula)

$\beta$  = number of days needed to enter the customer order

x = transit days to customer

$\lambda$  = hours worked / day

$P\lambda$  =  $P_1$  from Morgan's formula

Or:

$$CLT = -1 \left( \frac{(FGI)F}{I\lambda} \right) + \beta + x \quad (11)$$

Where:

CLT = customer lead-time (number of days)

FGI = finished goods inventory (units)

F = production time (Little's formula)

I = WIP inventory units (Little's formula)

$\beta$  = days required to enter the customer order

x = transit days to customer

$\lambda$  = hours worked / day

## 6. CONCLUSIONS

The goal of Little's and Ohno's formulas is to create a production process which can rival a guided conveyor belt. The goal of Morgan's expansion is to further extend the conveyor belt to the customer, so the customer is the one guiding it. The Morgan expansion is a kind of complex unification of production theory, which combines in a single formula the following elements:

- customer lead-time,
- required stock of finished goods (units),
- required number of operators,
- required stock for partial or final production process (units),
- production time, known to industry engineers and researchers as 'execution time',
- production per hour and production per day (units).

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## **MODERN CONCEPT IN MANAGEMENT WITH HUMAN BEHAVIOR**

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***Summary:** For successful accomplishment of nominate assignment in organization, it is necessary existence a good among-human relations between employers (members) in each aspects, on all levels. Organization behavior and among-human relations are important area or segment of management. Organization culture, generally said, eludes consciousness and members' behavior of some organization, whole norms and valuations characterized for some organization. The understanding of organization culture is very important: it conduces understanding of employers and successful management their behavior. Accomplishment of these goals in practice is impossible without quality communication.*

***Key words:** organization culture, organization behavior, among-human relations, communication*

### **1. INTRODUCTION**

Because of changes, which happen in modern business and management philosophy, it is happen and it will happened a real resources war, usually named "human capital", "intellectual capital", "brains", "talents", etc. Management becomes humanistic discipline, and knowledge becomes the most important resource. The most quality human resources will ensure the biggest profit, and development. However, each man, like individuality, or a part of determined group, has own character attributes, psycho-emotionally assemblage, education, culture, ethic valuation, etc.

For the organization, like and for individuality in them, the times of ease, slouch, and nonchalance passed forever. Market, like top criteria of successfully, and fight which wages on it, contract area for non-professionalism, non-competency and non-quality. Managers' competency and all employers, customer pleasure, quality in all segments of work, men acceptable like the most improve resources, investment in the knowledge on all levels, etc. are fundament on whom, all successful companies, repose own business. In the attempt to accomplish concurrency advantage on the market, companies turn to themselves more and more, trying that in its internal relations and structures to hurry a new potential for development and quality. On that way begun the goals and thinkable activity with organization culture, like assemblage of valuation, belief, behavior norms, working styles, relations, etc., which each organizations makes unique. Basically idea concept of organization culture consists in perception of organization like mini society, which like that makes own itself culture. The understanding of organization culture conduces generally to understanding and management on employment behavior. The brunt of this research is oriented on along-human relations in the organization, behavior norms, characteristic of human being. Along-human relations elude all kind of interaction between men: communication, conflicts, stresses... As together work is main reason of management existence, it comes from that management of along-human relations one of basically management function. Men, like the most quality resource of organization, at the same time they are resources with which are the most difficult to manage with them, which are the most liable to oscillation in its productivity, which is each aspect the most complex.

## **2. MEN AND ORGANIZATION**

Men are the most quality resource with which disposes one organization. It is necessary to know essential of human being, its moving power, qualities etc., that successful manage with them. There is not successful management without knowing namely categories.

### **2.1. Organization culture**

In the sense of socially category, culture is all-presence changes on the man and his socially and nature environment and it originates as result of appropriate human activity. In wider significance, culture is difference from meaning of society. Culture, like and society, involves all changes and creations originate on human work base and in the goal of remission, maintain, prolongation and prosperity of human race.

Culture involves these socially appearance, which are institutionalization and spiritual expression of human interactions in presented society, that to say, that culture appearances like materially, and ideally relation and process, like products and human creation [4]. From this appointment, come from that culture not eludes just socially process, human activities and their connectedness. Culture represents all of that, what appears as their result, what is, in certain sense, out of that processes and relations, i.e. it is their spontaneous physically or spiritually effect meaning for socially prosperity. Culture does not involve economy processes and relations in production assemblages. It involves only instruments, work organization, production experience, employ partition, economy knowledge; employ moral, ideological prejudice about human relationship in production and distribution (spiritual culture).

From plenty of definition organization (corporative) culture, the most adequate would be that its one on which, organization culture involve consciousness and behavior members of some organization based on collective presuppositions, valuations and norms which they accepted in internal integration process and external organization customize, and which expresses toward material, semantic and behaviorist symbols with determined messages and significance [5]. Corporative culture the most plenty of collective elements has with enterprise philosophy, enterprise ethic, enterprise identity organization clime. It observes as complete of norms and valuation, characterized for some organization. According that, organization culture would be present accepted knowledge and experience which individual person advantages in development of its organization behavior.

Characteristics of organization culture are:

1. It earns (it has not genetic genesis),
2. It is divisibility (divide itself and mixed between organization members, it is not specify of individual),
3. It is trans-generation (transforms from generation to generation),
4. It is symbolist (based on characteristic presentation of one notion with help of other one),
5. It is adaptive (based on men ability to accommodation environment and events),
6. That, what presents person for each individual, is a same what corporative culture means for organization.

### **2.2. Organization behavior**

True rationality is not a base for organization behavior. Men are not completely rationality being, already enough under emotions influence. Organization training and organization behavior, it is more ponder of our emotionally life, than is ponder of our rationally life. Organization behavior definition the simplest would be present like understanding, prescience and control of human behavior in the organization [14]. The subject of organization behavior is enables human behavior, manners and performances in the organizations. The training of organization behavior enables to the men to acquire competencies, which are necessity that they would be successful employers, team leaders or managers. Knowledge and abilities, which they earn, help to them to diagnostic, understand and explain what is happen around them, on employ. Knowledge implementation from organization behavior range has to goal reformation of organization efficiency.

Behavior science (individual behavior in the organization) need to differences from other socially sciences and sociology. Organization behavior is applied behaviorist sciences, and it develops on contribution numerous behaviorist disciplines, in the frame of which it extracts: psychology, sociology, social psychology, anthropology and political sciences. Psychology contribution attaches for individual (micro level analyze), while contribution of other discipline refers in the group training and organization (macro level analyze). So-called groups or organizations behavior, also is and individual behavior in the association with other individual in the group or organization. Science of behavior in organization - management, routed in the direction of reformation along-human relations and working conditions with increase employ effects [9]. From there it is necessary to research and determine the factors, which implement on men behavior in the organization.

For organization behavior, it is very important develop of person from the earlier period of life until to manhood. In develop of person; in the earlier phase decisive influence has family, i.e. atmosphere that parents create.

Among many of theories attached for adult development, especial care, earned approach of Daniel Levinson, who attached adult development phases for events like as marriage, retirement, etc. [16]. Against this model, T. Hog installs universal model development phases of individual career. Beginner trail for own business and employ identity, in the first phase. That period is very unstable, and in the same time and non-productive. In the second phase, employer begins to stabilize itself, what elude increasing productivity and making career. In the third phase, man achieves the top of own career. This is a phase where employer has necessity to leave something to the future generations, so that he often succeeds protector's function according to younger staffs. The fourth phase is implacable crash of ability, and the end of career. It recapitulates results, and man is satisfied or not [16].

Main themes consideration of organization behavior is Motivation, power and leader behavior, interpersonally communication, structure and process in the group, learning, attitude and perception, changing process, conflicts, employ organization and business stress [15].

Organization behavior enables understanding human nature, and with that it gives possibility for employment behavior prescience in determined situations, but same that indicates how organization environment influences on employment behavior [14]. That means that men react on environment so that present determined behavior, but manager assignment would be to direct that behavior. Behavior must to be that ensure accomplishment organization goals, and, certainly, individually employment goals, because they would be, wished behavior, repeat on that way and in the future. Although there is lot of overlay, organization behavior and management have various ways and goals... Cognitive approach to human behavior explains behavior like as affectively and subconscious, so in that sense can say that this approach "warrants" many procedure of men in the frame of their employ activities [14]. Cognitive approach accent that is man behavior, processes result, that happen in it (internal process), these processes cannot be explain, so it cannot influence on man behavior. Hence, cognitive approach can be declare like mentalist, i.e. these that depend on human subconscious. By my opinion, the most acceptable will be socially-knowledge approach, which presents syntesis of cognitive and behaviopistic (mechanicystic-man reacts only on chafes, stimylances) [14].

### **2.3. Human characteristic, which influence on organization behavior**

Organizations are very often base on manner, according who the man is rationally being. Among that, formal job structure and hierarchy are rarely only factor, which influence by the way organization functions in real life. Main assignment for any manager is integration rationality and emotively, what accomplishes good results. To successful manager is well-know that, if wants quality communication with people, and that on the best way manage with people, must to know human nature. As organization would business successful, it is necessary balance between men care and employ care, between emotionally and rationally consideration. Organization, which are excessive oriented on people and approve a little care for productivity not livelong, except if they are not in the public sector. Organization, which are excessive oriented on assignment and approve a little care for people - makes problems and conflicts [14].

Traditionally psychology believe that forces out from us (environment, family, biochemistry and similar) create our reality for us. It is not to allowing for that our meanings create our reality, our emotion and our behavior. According to aspect of traditionally psychology, negative emotions are indivertible and they are normal part of life [13]. As result of that, it observes a victim's consciousness. For regular recognize of human nature, by my opinion, the most adequate is holistic approach, which recognize a men as completely, integrated being, and individuality which behind, for human beings commonly, has and own distinctive characteristic.

The person could be defining as the way the person is of behavior characterized for individual person. Completely said, the person is unique organization attribute, which forms with interactive activity of unit and environment, and determine general, for individual characterized behavior way [20]. The person defines as and combination stabile physically and mental characteristic which gives politics identity. The concept, which was showing like useful for understanding of individual behavior, is a system of persons. The understanding of itself is the way on which the person see itself as physically, socially, spiritual and morel being (that is say, see itself like human being different from others). Own personality, people approves over attitudes, abilities and emotions. Differences involve all of these self-evident, as and the finest characteristics according to which the individuals are different. Differences, which influence on organization behavior, are dividing in the primary category (generic characteristics, which involve on self-perception and socialization, par example, years, race, ethnical qualification, and other), and the secondary category (vested/learned characteristics which the person acquires and modifies across all its life, par example, education, experience, religion conviction, etc.) [14]. These characteristics are not independent. Organization and employers can be exposing to all possibility forms of difference. These differences will influence on mostly of employers, managers, teams, classes and organizations. These are important because they are often reflects the differences in life styles, attitudes, validity and behaviors, and how employers will accept the differences and answers on them, to a great extent will influence on organization efficiency.

On men behavior in the organization, very strong expressions have their validities and attitudes. Both of these categories by men, makes strongly predisposition toward behavior in determined direction. Validities and attitudes are very often subconscious character. Men behaviors in accordance with own convictions although they not thing about them.

Validities present convictions that determined behavior or existentially status personally or socially more desirable in relation on diametrical behavior or statuses [11]. It can characterize and as racially positive and constant relation according to determined objects which estimate as important and for which engagement exists racially personal engagement [4]. Validities show what people consider as good, and what is bad. Content of validity shows what people consider good and important, and intensity how much that consider good and important. When validities of individual, arrange to importance and associate with themselves, it obtains individual valuation system. Valuation system best shows predisposition of individual that behavior on determined way. Validity orientation eludes generally behavior principles and activities with reference to determined goals on which aspire, and manifests with numbers activities forms. Validities are very stabile and it changes difficulty (begins in early infancy, implants in subconscious, learns at "black - white" manner).

One of basic characteristics of validity is to influence on behavior in attitude form. Attitudes present statements of people, which show their relation according to determined, object which predisposites, their behavior to that object [4]. That relation/attitude can be positively or negatively. Although it makes that men attitude determine their behavior, correlation between attitude and behavior is, in effect very small. Person can too publicly and represents determined validities and attitudes for which it knows that they socially desirable or from it respected, but actually has completely other conviction. Correlation of attitudes and behavior is higher if they attitudes more specify and concrete.

## **2.4. Socially intelligence**

For modern management, of the fundamental significance is cognition, research and development socially and emotionally intelligence. These, relatively new scientism category are occupying, shortly, by human emotion management, and among-human relation quality development. As abilities, they allude of appliance of this knowledge in practice. For difference from intelligence quotient (IQ), these kinds of intelligences can be developing.

Bases of socially (interpersonal) intelligence by Hatch Gardner:

1. Groups organization - leadership
2. Negotiation decision, piques absolution
3. Personal relation - empathy, teamwork
4. Socially analyze - ability of detection and interpretation of alien feelings and anxieties [1].

Components of socially intelligence can organized in two great categories: in the category of socially conscience (when we have a felling about other one) and category of socially abilities (when does something according to that conscience) [2]. Socially conscience refers on spectra from instant feelings for alien internal status, to understanding of thinks and feelings of that person to "catch" complex socially situations. It involves:

1. Primal empathy,
2. Adjusting - listening with fully susceptibility, adjusting for some person,
3. Empathy precision - alien understanding of thinks, feelings, and
4. Socially cognition - knowledge acts on socially world.

Socially ability attaches to on socially conscience to enable unmolested, effective interaction. It involves:

1. Synchronizate - flat interaction on un verbal level,
2. Self-presentation - successful presentation itself,
3. Influence - consequence modeling of socialy interaction, and,
4. Care - take care of others neccessities and adequate action [2].

## **2.5. Emotionally intelligence**

Cognitive intelligence and academy education are not much in attachment with emotionally life.

Emotionally intelligence alludes:

1. Motivation and patience in failure case,
2. Instinct control, disposition overmaster,
3. Participation, it participates with other and hopes [1].

Peter Sal way, emotionally intelligence bases on five areas:

1. Perceive of mens' emotions or self-conscience,
2. Emotion management
3. Self-motivation,
4. Emotion recognize at other or empathy, and,



5. Maintain of the human relations [21].

Self-conscience is emotion recognize in the moment approved, what represent fundament of emotionally intelligence.

Emotion management presents ability based on self-conscience. Emotion management allude emotion accept instead of its push, its reliance has intention better decision conveyance. Emotionally self-control and pacification affects are base of each success, and enables excellent accomplishment on each field. Overmaster with emotion is base for self-motivation and overmaster of determined ability.

Empathy is personally kind of feelings; ability is get accustomed in emotion status of other person and understanding their position. Empathy based on self-conscience and self-recognize - person openhearted at own emotions will be ability and in recognize and understanding of alien fallings. When other copy feelings of either person with which communicate, disappear emotionally tension and makes connectedness. Men want to know that we understand their feelings. That helps to its belief at us.

Maintain of the human relations base on recognize alien emotions, which enable successful socially life. Emotionally talent is meta-ability which determine how much successful we use abilities which we have, including and "cold" intellect.

Emotional intelligence theory said that is great knowledge be angry on right person in right measure, from real reason [23]. If someone emotionally intelligent means that it knows why its feelings are on determined way, to knows why others feels on determine way, that it can manage with own and alien emotions. Mostly mistakes in emotional intelligence, simply comes from absence of understanding.

With development of emotional intelligence increase ability of employers for changes, because in employers behavior changes influence of role and influences in the organization, meaning of formal relations, power aspiration and outer success indicators, non-real goals [10]. By other side, it increases personally and socially responsibility, real motives for self-actualization. It is strongly carriage because emotional intelligence cans development, what achieves by education, various programs, and establises successful communication, etc.

### **3. AMONG-HUMAN RELATION IN THE ORGANIZATION**

Among-human relation presents interaction between two or more actors, and actors in the interaction are individual and group [18]. Direction of AMONG-human relation has revolutionary significance for behavior science. This direction establishes by Elton Mayo and its assistants Raptly Berger and Whitehead [9]. They make a great series of experiments on which base they conclusion that men behavior from great significance for organization.

The organization successfully key, and making own manager career is in self-ability for predispose people for accepting and later and for realization of ideas, motivation and adjustment organization goals of employers [7]. On creation good among-human relations influences three main factors: power, communication and ability conflict solving. Behavior science in organization, aimed to directing reformation among-human relations and employ conditions with increasing employ effects. The elements, which influence on organization behavior attached with number concepts, moving to human nature and organization. At wider classification, that is perception, knowledge, motivation, status, power, group, management, conflicts and employs participations [9]. Good among-human business relations, it easier makes disappoint, even make. Because of that it is necessary to take care about its. Affability, nice word and smile, when is that applicable, not breaking authority, not mean weakness.

#### **3.1. Positive employ clima**

Positive psychology analyses optimally men's' functioning [17]. Its goal is to discover and apply these factors, which enables development to the individual and organization. Organization clime reflects subjective understanding and cognitive adaptation of stimulants in employ environment [5]. Under term clime eludes interaction result between individual and organization. Hence, organization clime derives from individual apprehension organization reality by their members. For difference of culture which oriented on organization like a group and has socially traditionally dimension (collective mind), clime based on individual adventure of organization like employ environment. Competition of clime management it is important like as technology knowledge about reformation of productivity and job satisfactory. "Clime management" differences from traditionally ways of motivation employers as that take care on basically human necessity with personally importance from one collectively, holistic perspectives [5]. According to this concept, the best way for creation high motivated, dynamic and enthusiasm employ is creation positive employ clime. Employ clime refers on psychosocial aspects employ environment how employers see it, maintain "chemistry" between individuals who works together. In the organization, various classes may have various kind of employ clime, and exists and whole employ clime. Clime management has two ranges/parts:

1. Creation positive working place
2. Creation of sense working place [17].

Positive part has assignment to take care about that what employers see on itself, on other associates, management and organization and how good men work together. The mostly directed on psychosocially aspect organization life. Positive working place means that organization is pleasure place for work where people is agreed and respect himself or herself. "Sense part" is light motive of organization because organization lives and what is it move its. It is directing on existential motivation aspect of organization live. Sensible working place means that decisions of management and job, which it executes, is sensible. Together, these two management climate parts increases job pleasure and productivity.

Climate management reflects moving from direction on itself toward to care about other people, from own interests on higher goal, and from individual point on collective orientation. Climate management directs to creation politically, senses climate toward humanization of working place. Creation of positive and senses climate need to be a job of all employers in the organization. People must be educated so that positive, group dynamic and synergic not happen spontaneously along it requests knowledge and ability. The way, which conduce to positive and sense climate can be, for example, serves to people must be with respect and dignity, job performance with full openly and integrity and similar.

### **3.2. Positive organization attitude**

For life attitude which we have, depends our feelings, our thinking, but and same way of our behavior. Positive (or negative) attitude is relatively stable predisposition, which determines our behavior or directs our reaction [19]. It is not unchangeable category, already can change and recuperate. From aspect of modern management, positive attitude is with vitality significant.

Positive attitude eludes:

1. Furlough of prejudices. People with positive attitude have not prejudices; irrespective are in question men or situation. From the worst situation try to take the most, and in the men they find all what is good. In the management, this approach is from the greatest importance.
2. Self-confidence and controls with situation. People with this quality are not load with own power and they do not want control all and everyone, but they want to be in the flow with things, what enables successful management.
3. Think and plan creativity. In management creativity eludes ability that creates new ideas, solution and strategies which appears. Managers with positive attitude always think with "step before", labouredly to know where it goes.
4. Knows carry on changes. "Positively" managers in changes see chance, which will bring progress. That is in the same time and chance to research different and unknown areas, accomplish new experiences or break down barriers whose trammel them.
5. Own optimism. Eludes pleasant, gives hope. Optimism very often can be non-real, still positive based on reality and tunings what they are.

Successful manager has ability that successful communicate named attributes. This is mainly, vital element of positive attitude. With our thinking and our attitudes, other people will know only if communication is success.

### **3.3. Communication and communications blockers**

Communication really presents one of the deepest human necessities. It is necessary to lead to ontological union, fusion two being. Actuators of communication are necessities, which are on less, more similar way presented in earlier person's theory. Various approach of necessity, agree that basically necessity main actuators of our thinks, feelings and whole behavior. Interpret of basically necessities can be various depends on main theory orientation, but it is possible to count existential necessities, physically necessities, necessity for security, for love, for identity, belonging, socially acknowledgement, etc. [22]. Hence, with own necessities person enter in communication process with other person. Each form of communication must to have dialogic base, what means openhearted to the other. The relation, which is not dialogic, emergent, is obligation and compulsion, what is non-acceptable with modern management aspect. Areas of communication, which are the most, interest for management are verbally and write interpersonal communication.

Good and successful communication is not simply. Communication blockers can be non-verbal and verbal [6].

Non-verbal blockers involve body speak with which message that person are not interest, that has not a wish, or that it not be able to listen. They have various form, gests, empty face, fixed eye contact etc. Study shows that 15% of communication goes on words and contents, until 25% refers on voice tone, and 60% on non-verbal behavior. Verbal blockers are verbal reactions, which blocked listening and unarmed others. They usually impose superiority attitude for one, which apply them at the other side in communication. They can be:

1. Admonishment (speak to interlocutor how to solve own problem),

2. Judgment (negatively account orator and/or its problem),
3. Analyzing/diagnostic (speak to interlocutor about their motives, roots, problems),
4. Closed investigation (requesting information about orator's problem),
5. Assurance/minimization (trying to interlocutor feels better by minimization of significant of their experiences).

### **3.4. Non-violent communication**

Non-violent communication will be possible describes like process where message sender not care about message acceptor, and with that not necessity for result which will be adequate sent message not sense of necessity for adequate communication like a base of socially interaction which goal is socially influence [22]. Hence, it is clear that accomplishment of abilities non-violent communication starts from activity on itself. Under term "work on itself", means, before all, on own necessity in communication with other [22]. That process includes observation and self-observation. With recognize own necessities, own "strong" and "weak" sides, earns the first conditions to accepted and understanding the second person.

Assertively eludes behavior-determined person in contact with other people, in which shows character like as perseverance, coherency, defense, and simplicity [3]. Assertive person not percept and not impart accomplishment decision of other people that instrumentalist it, or that manipulate with it, on any way, and any what decision or goals.

The fear of future, total absurdity feeling and technique society carry with its communication furlough. Talk to someone to change itself decreases that possibility [8]. That is because people not to change themselves, never. We cannot change someone's mind that it changes its behavior. Changes in behavior happen because arguments, facts and various trying. When we try to change someone, we are attacking his story, and less to listen. Men will be change before if they think that we understand them and it feel free. The rules with which observe for decrease communication conflict possibility:

1. Not abuse and do not stick etiquetes,
2. Each must to take responsibility for chalenge, conflict admission,
3. Tke care that jokes and humour be abstinent,
4. Use "me" sentences,
5. Uses facts and adequate examples [18].

## **4. CONCLUSION**

Organization behavior is very important area or management segment. When managers accomplish their function, planning, organizing, management, coordination and control, they must to know influences of own action on employers. With respect that manager's work with people (employers) and that job do with help the other people (employers), it came from that is consciousness of people mainly for successful manager.

Good among-human relations are conditions for accomplishment assignments, but and accomplish it is under the best conditions. Only satisfied men are useful for organization. For bad among-human relations, conflicts, working atmosphere accomplishes with stress, the biggest responsibility carry just management structure, managers. Successful solution of human problems, makes conditions for solution and other problems in the organization, because they are primarily refers on the other problems. In the future, that problems will be more, because it exist tends to accomplishes own requests, necessity and wishes.

In the organization where exists changes of think, come to increase innovatively and efficiency. Employers obtains certificate that critics will be addressed on right place, and that in that way all problems will be obtain. That decrease level of stress with which employers live in problematic situations.

From these derives that for optimally functioning of organization, ensure conditions in which employers can free presents own opinion. One of the ways that ensure is forming working groups. In this process, will be discovering great number of various observe of problems, possible new ideas, what enables development and progress of organization. It must to take care that with these groups leads manager with knowledge and experience in managing solution of conflict situation that avoid eventually waste conflict escalation. Overmaster abilities of socially and emotionally intelligence on working place and in the private life not anymore choice subject. That is necessary postulate for successfully and accomplishment.

As human, i.e. socio-emotionally problems in organization, is too complex, it is necessary socio-psychology managers' education like and tactile and ability. For successful management with among-human relations, conflicts and stress, it is necessary great experience in work with people, communication and psychology talent, patience, and particularity. Only integration of all named knowledge and abilities can make modern manager successful and efficiency.

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## **MODERN RESEARCH OF NEW MANAGEMENT TECHNOLOGIES**

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**Summary:** *Modern research on natural and conscious organization initiates more versatile and complete research on the success of the exercise of individual and collaborative work activities. In these studies special attention attract those in connection with the organization and function of leadership management business and other organizational systems. A lot of studies and discussion were written about the processes of association, management, leadership and management in different stages of social development. All these studies and discussions are based on a classical Cartesian approach and characterized them, more or less, some ideology or politicization of the display those most complex types of conscious activity.*

**Keywords:** new technologies, management

### **1. INTRODUCTION**

Objective and complete showing and explaining the process of organization, management, leadership and management began in the last decade, after the disclosure of information as a third required component of any organized structure, which take high-quality features a whole. It also marks the beginning of the abandonment of classical Cartesian approach in scientific research and other realities. Classic concept of viewing the process of organization, management, leadership and management is concentrated on the study, display and finding more successful solutions in constituting and functioning of the whole structure, but primarily the business and other organizational systems. Focus on the representation of a whole structure and relationships in them, however, inevitably leave behind watching a whole relationship with the middle where it belongs as an integral part. Appreciation of the fact that every entity of the other and that each business and other organization of the wider community caused the direction of research on the integrity of the objects of observation, which includes links and relations with the observed objects whose mid-on component part. It is marked constitute unite and develop the holistic approach and show the integrity of items of observation. The finding that the whole represents something more than the simple sum of the parts of which were made to initiate scientific research in determining what is it that holds a whole and can not be deduced from the quality of which is made. Modern research reveals that the quality of units in the synergy created by the merging of communication and as a whole. Each unit is created in the process of organizing, in a natural and conscious organization. But it suggests that the attention of research focus on the discovery and introduction of components that choose organizational performance. So in genesis of human labor manifests constantly finding more efficient and effective ways of organizing individual and joint business activities. People who successfully organized a joint work or come in the dominant position in relation to others and their dedication to the successful organization of business activity inevitably leads to competition, where winners of each station, and the other defeated or losers. Something more versatile and complete observation geneses society emphasize that all previous stages of social development based on some types and modes of competition, including those relating to warfare.

Winners in the competitions are as champions and their skills have become a model in preparing the new competition. In modern social conditions in particular is characterized by market competition and achieving champion results in the market. Most common conscious knowledge of language and show unequivocally prove that the success of achieving goals in all aspects of conscious activity primarily depends on the success of organization. Likewise, it is known that the success of achieving the common goals of conscious activity directly and entirely depend on the organizing and directing the activities of joint working.

In any process of joint working activities are functions of its routing that must be performed for some of the people who work together. In the early stages of social development, most probably follow in forefront in the animal realm, targeting of common activities performed by aware man who gained the trust of others. So it gradually develops leadership, which is transformed into entrepreneurship, and management, leadership and, finally, in modern social conditions, in the management. The extent and variety of joint activities under the awareness of professionalism of management, but also the competition of professional managers in the success of achieving the goals of business and other organizational systems.

Competition of professional managers leads to progress in achieving the goals of business and other organizational systems. The most successful managers in organizing and managing joint operating activities are presented as champions in the management. Realistic pursuit of business and other organizational systems to achieve their goals of reaching the top, champ firm result inevitably provokes and increases the interest of people to find ways of achieving excellent results in organizing and managing joint work activities, or ways in which professional managers affect more aware and fully use available potential of people and other resources in the structures of business and other organizational systems. Constantly increasing interest in exploring champion management and general champion behavior of people in achieving the goals aware of action and decides to scientifically study this phenomenon in the organization and management of joint activities of people working in the structures of business and other organizational systems.

Starting point in any consideration of champion management must be statements that the champ firm management support, a process of movement in a given space and time, and that is based on certain algorithms and trajectory. Modern science knowledge stipulate that each item of research or expressed the problem possesses a multitude of components and aspects of observation, which are more difficult to infinite. This also emphasizes that in any discussion about the "champ" management may include certain components that are important for display and introduction of general and special characteristics champion management.

Starting point that every single form champion management characterized by certain originality in comparison to some other form of management champion indicates that primarily explore the components that chooses conditional existence and originality of each of the individual forms. Commitment to any objective showing and explaining the structure of meaning and originality champion management in a way contributes to the development and improvement and represents the starting point and meaning.

## **2. STARTING POINT AND STANDINGS**

Discrepancy between the constantly increasing wants and needs of people and their capabilities to achieve conditional intensification inevitably be aware of development activities and work productivity. Development to increase the power aware operation leads to the division of labor, and specialization of people and to modernize the tools to perform certain kinds of conscious activity or work.

Development of commodity production and exchange of goods on the broader market requires building more complex and larger activities, i.e., organizational systems and their specialization to perform specific types of conscious activity.

Success of achieving the program objectives in the immediate connection with the strengthening of domination and rule in a particular social and natural environment.

Each competition and competition requires the appropriate qualifications of people and other resources that with less stress and other expenditure perform those work processes that are a condition for the achievement of established goals.

Training people to perform certain types of conscious activity gives rise to the professionalisation and development of more diverse crafts, understood in the widest sense.

Expansion of professionalisation, and trade, leads to the appearance of professional secrets and constituted the specific ways of performing certain transformational processes, which are all fully created in specific technologies.

Any special technology is based on standardized procedures and their interconnection in a unique and complete technological process. Specialization for the performance of individual stages of technological process inevitably raises the necessity of increasing concentration of people and other resources within the organizational system.

Concentration and specialization require the introduction of synchronization in the performance of common aware activities, especially organized groups of people and other resources, and each synchronization is based on the guidance and control performance of the program process.

Guidance and control the conduct of any joint activities are aware of from time immemorial acquire characteristics of a certain, special technology, which under the specialization and professionalization of people, and creating and developing a sort of trade.

Necessity of routing and control the conduct of joint working activity indicates the introduction of new components in the structure of technological processes. This new component in the joint conduct of conscious activity decides the success of the objective and as such is always special value.

Genesis routing and control to conduct joint business activities highlights the presence of different ways of treating people who perform the specific function in the process of achieving set targets. At each new time dimension created and developed special technology. This holds true for technology, routing and control to conduct joint business activities.

Different way of performing routing and control of common business activities inevitably decides and diversity in the efficiency and effectiveness, and success in achieving the established goals.

In all stages of social development people have special care guide to getting to know the particularity of the most successful individuals, and how the achievement of routing and control of individual and collaborative work, and in all other areas of conscious activity.

### **3. CONSTITUTION OF TECHNOLOGY OF SUCCESSFUL GUIDANCE AND MANAGEMENT**

Every process of change the existing situation in a new, different, is carried out according to the specific algorithm, or changes the order of operation. Also, each change takes place at the appropriate trajectory, ie, in a certain space and time. These laws also apply for a process of all types and models of leadership, including successfully managing management.

Research and daily practice also confirmed that the goal of every conscious activity can achieve in different ways. Any way of aware the objective conditional constitute a special organizational system. This means that in the realities facing so many ways of achieving the goals as established by common goals aware action.

The choice of realizing consciously set goal of comprehended as a way to change the existing situation in a new desired state is conditioned primarily by readiness of people to perform all those functions and operations that must be done to this state redirected into a new, one that is more appropriate. Selected methods of realizing a fortified target implies the use of certain tools that people used to increase the awareness of their actions in carrying out the process of transformation of the existing situation in the new desired state, i.e. during the process of realization of set targets.

The starting point is that in transformation processes that can include only three mandatory components of any organizational structure of entities: matter, energy and information. Conscious change in the state of matter and energy information resulting new products and state that in a way meet some of the constantly increasing wants and needs of people, as well as constructed organizational systems. Natural gift people the ability that allows the election on the basis of acquired knowledge and experience constructed various possible ways of achieving set targets and to make a choice of optimal methods for the establishment of the natural and social conditions of life.

#### **3.1. Classical and modern understanding of technology**

In the classical sense, technology is presented and interpreted as learning of the procedures by which the processed materials, or science and skills that apply to change the form of material objects in a new form that meets the specific needs of people.

In the modern understanding and using the concept of technology departs from this that the term in general meaning explains formalized transformation, i.e. transformation, reverse, and modifying the existing objects, phenomena and processes, regardless of whether they are material, energy or information purposes. Technology leadership and management is a set of interrelated special technology in which the realization of the people directly involved and, as such, they acquire characteristics of stochastic systems.

#### **3.2. Specialties of technologies of aware organizing and management**

Knowledge that every goal is a conscious activity can be achieved in different ways leads to the conclusion that the achievement of the primary functions of leadership and management and the limitation of freedom of behavior of people during the conduct of joint working activities can also bring in several ways. For each method of realizing a goal it is necessary to set forth knowledge of the rules, principles and character of natural and social order, with the art of people that this knowledge, skill and appropriate use in carrying out awareness activities.

### **3.2.1. Idea and its use**

Home and the first phase of work always makes the construction of which he intends to achieve aware of the activity. Something more complete analysis shows that the idea represents the basis for making management decisions.

Issue is that in each stage of development of society people revolutionary increase efficiency and effectiveness aware of action, which is shown in the first stage of social development.

Revolutionary changes in increasing the efficiency and effectiveness are aware of activities in the modern social development related to constitution of tools and information purposes. Development of information tools character refers to the new ideas that people develop on the basis of acquired knowledge about the possibilities of quality new ways of organizing and managing organizational systems.

### **3.2.2. Mental constructions**

At each new stage of social development is evident that the mental construction of increasingly uobličava the special tools that people use for successful realization of its all raznovrsnijih wants and needs.

Issue that svestranije and intensive use of computer directs analogue intensification of development šampionskog leadership and management, since it is a basic characteristic šampionskog leadership and quality management support new ways of realizing the objectives of organizational systems.

### **3.2.3. Stochastic technology of champion leadership and management**

Knowledge that people acquire characteristics of stochastic systems at the same time indicates that they can not predict mental construction people about their treatment during the conduct of any kind of conscious activity.

### **3.3. Specifics of champion technology leadership and management**

Constitute personal technology system manages somebody else's work and other resources in the organizational structure of the system indicates that in any way designed system technology exists something that is known to other people, and how the established technology differs from all other analog technology systems.

Unknown components of personal systems technology leadership and management are expressed as professional secrets of their constructors.

#### **3.3.1. Focus on the domination**

People have inborn focus for mastering on domination of elements in the environment. Mastering and domination are the primary components of the law of the existence and development. The overall social development support is spread legality of expanding the material basis of life of people, which led to the appearance and development of private ownership of material goods. Expansion of the domination in the environment is usually linked to possession of property of material goods, which in modern society is expressed in the amount of equity. Immediate expansion of domination they realize the people who successfully find a more efficient and effective and successful ways of achieving the established goals.

#### **3.3.2. Appearance of champion leaders and managers**

Emergence and development of industrial methods of production of material goods, and performing various services caused the increased need for professional organizers, or leaders and managers. Owners of capital tend to hire those professional managers who have the real ability to successfully organize and manage the business and other organizational systems.

Quickly came to the knowledge that the activities of professional managers, or managers, reproductive success depends on capital. It points out desire and effort of the capital to hire the managers and managers who achieve results in the champion's organization and management of certain types of business or other organizational systems.

Changes in technologies champion leadership and management are conditioned updated scientific knowledge and on their grounds constituted professional secrets to successful technology leadership and management.



### **3.3.3. Increasing complexity of technology leadership and management**

Increase the complexity of technological systems in general, as well as the technology leadership and management, occurs due to increasing specialization and more complex goals whose realization is necessary to construct new technologies.

Introduction of new and more complex technologies in specific processes of organizing and managing organizational systems that are under especially trained and educated personnel for certain functions and that, in pursuance of this, technology leadership and management analyzes the special stages, which express as separate entities. In every way specially constructed technology in general practice could be achieved by various efficiency and effectiveness.

### **3.4. Hierarchy in champion guidance and management**

Based on the technological complexity of the functions, structure of leadership and management are most often presented as a structure of parts, which perform functions top leadership and management, functional management, and management and operational leadership and management. Top-management and management (or the general management and management) are always in a dominant position in relation to the functional and operational. On this basis, is constructed the hierarchical structure of leadership and management.

## **4. CONCLUSION**

From written in this paper can be stated that all of management more or less affect environment in which they operate. There micro surrounding and macro surrounding, and since their structure depends on the success of product realization and application of organizational activities.

Macro surrounding includes physical environment, socio-cultural, demographic and economic influences, as well as the effects of science and technology, as well as political and legal regulations. For him, it is essential that you can not control, but management has to know its scope and effect to their impact incorporated in the projects and construction management.

Micro surrounding consists of factors that directly act on the organization, such as the application of technology, personnel, organizational culture and other factors. These forces are normally under the control and influence of management, and can be displayed or marginalized. However, it should be noted that between the external and internal factors that influence the management of a high degree of correlation, because it is impossible that the organization remain successful with the application of management manufacturing work if robotization and computerization affected existing environment.

Founders and designers of management must permanently adapt management existing design environments. It is therefore a need that they arrange timely and reorganize its management, in order to establish the appropriate balance between the company and the environment.

You should note that the meaning of the affiliations, where each objective and show explanation sense and structure of originality, successful management in a way contributes to the development and successful management specialization, represents the starting point and the meaning of compliance attitudes towards people need for coherent social relations. To achieves the professionalization of secrets and constitute specific ways of performing certain transformational processes, which are all fully construed in particular the application of modern technologies of management.

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## **CLASSIFICATION, NOMENCLATURE AND STANDARDS FOR MATERIAL PRODUCTS IN INTERNATIONAL GOODS TRAFFIC**

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***Summary:** For the process of normal transaction in international trade, there is a need for knowing of systematization of material products, as well as adopted classification and nomenclature from competent international economic organizations. Also, for all subjects of foreign trade business, the practice of international standardization, specifications, procedures, compliance with technical regulations is important for increasing business flexibility and profit. The application of technical regulations and standards involves a procedure that includes the operational activities of checking the completion of conditions for putting the product into market. This paper also discusses the problems mentioned in the context of harmonization of material products with the EU practice.*

***Keywords:** classification, nomenclature, compliance of material products*

### **1. INTRODUCTION**

Material products have their substance and their form so that in the trade turnover it is clearly known when they are subject to trade. When we talk about material products we need to know that it is not a homogeneous product group. It includes a large number of products that differ according to their physical characteristics, the degree of processing before placing on the market, the degree to which they are required in the modern society and the degree to which they are of interest to trade.

Systematic classification of products is necessary, because it enables review of a very large number of products. Disequilibrium in terms of systematic classification of products causes great difficulties in the coverage and comparison of various products in many activities such as: production, consumption, trade, customs services, international trade, statistics, planning and other economic activities. For this reason, the need for standard nomenclature and classification is imposed.

Classification often face difficulties, primarily because of the diversity of products that differ by origin, composition, degree of processing, use, properties, the aggregate state and other criteria. Given the different origins of classification it is not possible to set uniform rules for all types of products. Difficulties in the classification are also caused by product names that were made spontaneously, or because of different sources of language trivia and complexity.

Technical barriers relate to the procedures for testing compliance with the technical regulations, product adaptation to specific standards and requirements for the fulfillment of certain conditions so the product could be used to put on the market.

### **2. PRODUCT CLASSIFICATION**

Most frequently used classification of material products, is the categorization of products into **sectors, areas, groups and types**. Specified classification can be made based on criteria that can be applied with or without certain limitations. Unlimited applicable criteria of classification are based on the properties or functions that are common to all products: aggregate state, size, geographical sources, the way of distribution, the level of technological processing, application, etc. Limited applicable criteria are however, specific to certain products: chemical composition, insalubrities, the way of packaging, etc.

International goods traffic include the tens of thousands of products, including them as a kind, not as a variant of their quality, that would significantly increase this number. An analysis of the scope, structure and dynamics of the developments in the international trade exchange is a necessity of time in which we live in, and to make that possible, we need to ensure absolute comparability table statements, the status and trends of foreign trade and the movement of goods on international level. This is necessary both for the individual participating countries and for world trade in general. Therefore, there was a need for creating a comprehensive, or at least the small number of internationally recognized classification of goods for the purposes of statistical enclosing of foreign trade transactions, customs services and other purposes in some countries (export premiums, tax benefits, classification of goods for insurance rates, transportation, etc.). On the other hand, the need for stability of foreign trade business of companies imposes that they are placed on a wider nomenclature of goods with the work in the goods traffic. Bearing in mind the two factors in relation to the width of commodity nomenclature, it is necessary to set the appropriate nomenclature and position of goods in the terms of business rationality.

### 3. PRODUCTS NOMENCLATURE

List of products in which they are classified by some system is called **nomenclature**. In trade practice, we need more restrict delimitation of certain products. The need for detailed distinction of product material is caused by the necessity to bring your product closer to the potential products and the necessity for business partners to know about which products they negotiate. If it is the foreign trade, then there is also a need of the state to apply different external trade regime for different products.

Among the most famous international classification and nomenclature there is the **International Standard for Industrial Classification - ISIC**, which was adopted under the auspices of the **United Nations** and which's third revision is in use today. It classifies all economic activity in the world in 99 sections that are grouped in a particular activity.

**Table 1:** International Standard Industrial Classification (ISIC) [9]

R. br.	Activity	ISIC group
1	Agriculture, hunting, forestry and fishing	01, 02, 05
2	Mining and obtaining stone	10, 11, 12, 13, 14
3	Production	15-37
4	Electricity, gas and water supply	40, 41
5	Construction industry	45
6	Trade and repair	50, 51, 52
7	Hotel and catering industry	55
8	Transport, storage and communication	60-64
9	Financial intermediation	65-67
10	Real estate related business activities	70
11	Renting of machinery and equipment	71
12	Computer and computer related activities	72
13	Research and development	73
14	Other business activities (legal, accounting, marketing, etc.)	74
15	Public administration and defense	75
16	Education	80
17	Health and social work	85
18	Sewage and waste disposal	90
19	Activities of international organizations	91
20	Recreational, sports and cultural activities	92
21	Other services	93

For international goods traffic, there are two major classification and nomenclature. The first one is the **Standard International Trade Classification – SITC** (table 2) [9]. It is based upon **Central Product Classification**, which was adopted by the UN, and it refers to the classification of goods in international trade.

**Table 2:** Standard International Trade Classification (SITC Rev. 3) [9]

Groups	Type of goods
0	Food and live animals
1	Beverages and tobacco
2	Raw materials, without oil
3	Mineral fuels and lubricants
4	Animal and vegetable oil, grease and wax
5	Chemical products
6	Manufactured goods classified by material
7	Machinery and transporting equipment
8	Other manufactured goods
9	Other unclassified goods (gold, weapons)

Another classification is the harmonized system for marking or simply **Harmonized System - HS** adopted by the **World Customs Organization - WCO**. This is a classification of goods in the twenty-one section and is used by customs authorities in the foreign exchange practice (table 3).<sup>1</sup>

**Table 3:** Harmonized system (HS)

Section	Type of goods
I	Alive animals and animal products
II	Vegetables
III	Animal and vegetable oil and fats
IV	Food products - beverages, alcoholic drinks and tobacco
V	Minerals
VI	Chemical products
VII	Plastic and rubber
VIII	Leather and fur
IX	Wood
X	Wood pulp and cellulose
XI	Textile
XII	Footwear, hats, umbrellas
XIII	Stone, plaster, cement, asbestos and ceramic products
XIV	Pearls, precious and semiprecious stones, precious metals, jewelry and coins
XV	Base metals (iron, steel, copper, nickel, aluminum, lead, zinc)
XVI	Machines and electrical equipment
XVII	Vehicles, ships and airplanes
XVIII	Optical, photographic, measuring and medical instruments, watches and musical instruments
XIX	Weapons and military equipment
XX	Various industrial products (furniture, toys)
XXI	Art goods

As an example of classification based on the standard international trade classification we have the classification of food products. (table 4)

**International Standard Industrial Classification of all Economic Activities**) is given on the example of the division of chemical industry and production activities extractive industry from which we can conclude that the products of above mentioned industries are products of different complexity of the composition and purpose (table 5 and 6).

<sup>1</sup> Since 1988, our country applies the harmonized customs nomenclature, because our country ratified the Convention on the coordinated system of marking and encryption of products. With the use of European standards and best practices of customs legislation, our customs system is shaped by the EU, and it is fully harmonized with the EU legislation and the prospect of the World Trade Organization and World Customs Organization as well as the basic determination of the General Agreement on Tariffs and Trade (GATT) when we question customs value, the origin of goods and customs procedures.

**Table 4:** classification of food products according to standard international trade classification.

Section 0; food and live animals (intended for nutrition)	
001	Live animals
011	Meat, fresh, cooled and frozen
012	Meat, dried, smoked or salted, in pressurized or non-pressurized packaging
013	Other meat products, regardless of pressurized or non-pressurized packaging
022	Milk and dairy products (plum, cream, ice cream, etc.)
023	Butter
024	Cheese
025	Eggs
031	Fish, fresh and simply-canned
032	Fish products
041	Wheat and sharecropping, non-ground
042	Rice
043	Barley, non-ground
044	Corn, non-ground
045	Other non-ground cereals
046	Whole wheat and wheat flour
047	Whole wheat and other cereal flour
048	Derivate of wheat, flour and starch, fruits and vegetables
051	Fresh and stone fruits (walnuts, hazelnut, almond), fresh and dried
052	Dried fruit (including artificially dried fruit)
053	Canned fruit and fruit products
054	Vegetables, fresh, frozen or simply canned; eatable roots, tuber (potato) and other eatable vegetables
055	Vegetable products (canned and modified)
061	Sugar and honey
062	Delicacy and other sugar-based products (except chocolate)
071	Coffee
072	Cocoa
073	Chocolate and other cocoa-based products
074	Tea
075	Spices
081	Cattle food (without non-ground cereals)
091	Margarine and other culinary fat
099	Other (above mentioned) food products
Section 1; beverages and tobacco	
111	Non-alcoholic beverages (which are not included in food products)
112	Alcoholic beverages
121	Tobacco (unprocessed)
122	Tobacco products

#### 4. STANDARDIZATION AND TECNICAL BARRIERS IN GOODS TRAFFIC

There is an appropriate technical documentation for each product in the production. In time it came to matching different technical regulations and specifications between the manufacturers, especially in industries whose products are used as an input in other production, because of more massive application of products. Manufacturers have suffered great damage in the race for imposing their standards, and have decided to cooperate and together they formed unique standards. This autonomous harmonization of industry standards was not always acceptable for consumers, and therefore, began the negotiations on the acceptance of standards that are optimized from the standpoint of the whole community. For this purpose, they established special bodies for creating national standards. That solved the problem of the same products traffic, produced by different standards within one country. However, each state for itself brought the optimized standards, so that there is still a problem of different technical regulations and accepted national standards because they create obstacles to international trade transactions. These obstacles derive from the diversity of technical regulations and the appropriate standards in production in various countries, and they are called technical barriers to trade traffic. Technical regulations are binding requirements or standards that determine the characteristics that a certain

product must have. These are documents that contain technical specifications of products according to which they are produced, and they are obligatory for producers. When the individual technical specifications as part of technical regulations, or the entire technical regulations are accepted as dominant and they are widely accepted they become standards that must be followed up in the production.

**Table 5:** Division of chemical industry based on the International Standard Industrial Classification (ISIC).

Main group	Group	Activities
351		Basic chemical products industry
	3511	Basic chemical products industry (no fertilizers)
	3512	Fertilizers and pesticides industry
	3513	Synthetic resins, plastic materials, synthetic rubber and chemical fibers industry
352		Other chemical products industry
	3521	Paints, coatings and varnishes
	3522	Pharmaceutical chemicals industry
	3523	Soap, detergents, cleaning preparations, perfumery, cosmetics and other toilet items industry
	3529	Industry of other and chemical products
353		Oil refinery
354		Various oil and coal-based products industry
355		Rubber and other rubber-based products industry
	3551	Pneumatic products industry (external and internal tires for cars and other vehicles)
	3552	Industry of other rubber-based products
356		Industry of plastic materials products

**Table 6:** production activities of extractive industry according to ISIC classification

Branch	Main group	Group	Activity
21	210	2100	Coal production
22	220	2200	Production of crude oil and natural gas
23	230		Iron ore production
		2302	Production of nonferrous metal ores
29	290		Other mining
		2901	Production of building stone and sand
		2902	Chemical processing materials and fertilizers production
		2903	Production of salt (rock, sea, spring)
		2909	Production of other mineral ores

As an appropriate object of standardization we may have all areas of human activities:

- Various types of raw materials, materials and finished products;
- Testing methods;
- Various definitions and other abstract terms;
- Technical equipment;
- Production processes;
- Documentation (design, production, etc.);
- Quality control system;
- Quality system.

According to that, the basic types of standards are:

- Standards for particular types of goods, which provides the quality of finished products, raw materials and other materials;
- Standards that provide methods and testing technology;
- Standards that provide elements of production processes, equipment, projects and engineering in general;
- Standards for technical communication, which provide definitions of various concepts, measures, size, etc.;
- Standards that provide the requirements that companies' quality system must meet.

**Table 7:** Types of material product standards [1]

Subject of regulation	Contents	Example
Tipovi	Defining the final number of types of products by class, size or form a second joint characteristics	Electric motors, forklifts, etc.
Dimensions	Dimensions of products, all or some that affect the use value	Paper formats, dimensions of machine elements, building elements and the like
Materials	Structural, chemical and technical characteristics of materials and their division by use	Construction materials, types of steel, nonferrous metals, etc.
Hardware products	Requirements regarding the quality of technical and natural products	Standards for wood, standards for fireproof materials, quality class of fruit, etc.
Technology	Processes for obtaining and processing products	Welding process, soda or sour cellulose, etc.
Testing	Procedures for testing and measurements in science and technology, in order to check the expected characteristics of materials or finished products	Determination of chemical, structural and other characteristics of products (household appliances, packaging, food products, etc.)

Products for which there are different technical regulations and standards in various countries often can not be traded internationally or they are sometimes needed some changes and finishing that increase the cost in a great matter.

The reasons for which the countries introduce the regulations on the implementation of standards, which specifically refers to the requirements for product testing, marking and so on, is required in order to preserve the security of citizens in the use of imported products and the protection of consumer rights. These are reasonable requirements that are imposed to importers of products, but only to the extent in which their countries do not use them from wanting to protect domestic producers, and not the consumers. This is mainly reflected in the imposition of inadequate standards, complication and aggravation of certification procedures etc. In this case, these regulations are significant barriers to trade traffic. These barriers are removed only international standard regulation.

New regulations and standards constantly appear in practice. An example of this are ecology standards. Today the most of developed countries insist on the application of regulations on the ecology, which the developing countries interpret as new obstacles to trade and they are ranged into the group of technical barriers in foreign trade, because they imply the fulfillment of certain technical specifications and standards. World Trade Organization follows the introduction of new technical regulations and standards of its members, which are obliged to report them by agreement on technical barriers of trade. According to this organizations data, we see the number of new technical regulations and standards that members introduce grows from 1995, when the organization was founded. Most of the measures were brought out by the European Union.

**Table 8:** Number of new technical regulations and standards applied to WTO [18]

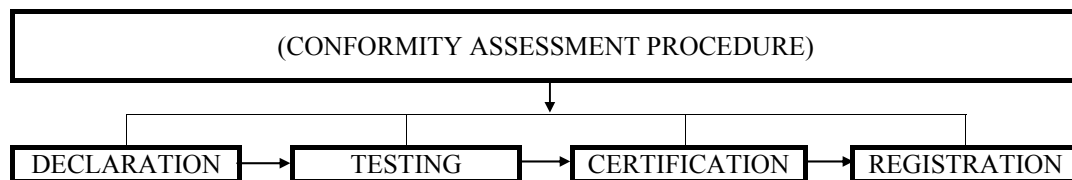
WTO member	1995	1996	1997	1998	1999	2000
Argentina	0	1	0	1	16	37
Australia	20	18	26	12	35	10
Brazil	1	9	35	43	17	12
Czech republic	12	14	1	6	28	52
European Union	123	123	437	276	185	156
Japan	50	41	35	28	30	56
Canada	29	20	30	115	24	26
Republic of Korea	13	9	14	8	22	27
Malaysia	1	19	12	28	98	3
Mexico	29	27	29	35	34	28
USA	33	40	33	35	49	32
Switzerland	4	12	21	7	22	9
Thailand	7	13	22	34	22	9
IN TOTAL	365	460	795	648	672	611

## 5. TESTING PROCEDURES COMPATIBLE WITH TECHNICAL REGULATIONS AND STANDARDS

Technical barriers are related to the procedures for testing compliance with technical regulations, product adaptation to specific standards and requirements for the fulfillment of certain conditions so the product could be put on the market. Manifestation of practical application of technical regulations and standards are:

- Procedures of analyzing compatibility with technical regulations and standards;
- Mandatory products labeling;
- Special requirements regarding the packaging of goods;
- Testing, inspection and quarantine at the border;
- Ecologic barriers.

The procedures include sampling, testing, assessment, verification and guarantee of compliance with the standards, as well as registration and accreditation approval. The procedure consists of four phases. In the first phase the manufacturer of goods issues a declaration of compliance with the technical regulations and standards. In the second phase, the testing is performed in independent laboratories at the request of the manufacturer. The third phase is a confirmation of compliance with the standards by an impartial body, and, based on that, they issue an approval or a certificate, so this phase is called certification. In the fourth phase, we register a quality system, for what we need the independent revision.



After the completion of procedures product can be free to put in circulation on the market of the country where the procedure of compliance testing was performed. This is extremely important for the protection of safety, health and preservation of consumer rights.

In the international trade problems occur because of practices that different countries do not recognize the results of testing procedures for compliance with standards that are formed in other countries. This means that exported products must undergo this procedure again, in the country of import. This significantly slows down trade traffic and increases its cost.

## 6. MANDATORY PRODUCT LABELING

Products packaging, except protection, marketing and operational function, has an information feature too. The products labeling involves the placement of text, details, commercial trademark, brand of the product, images or symbols that are related to food product, the packaging or the accompanying documentation.

Manufacturers have self-initially begun to label their own products to turn the consumers attention to more regular and safer use of products. However, some manufacturers avoided giving out information that could change the opinion of consumers about the product. This information is related to the products harmfulness, lower quality, etc.

Eventually the state began to prescribe the minimum information that must be indicated on the products. Products that were not labeled in this way could not to be put into market.

In the international trade the obligation for labeling products can be a significant barrier. The existence of various regulations on products labeling imposes the need for different product labeling in exports, which increases the cost of production process and distribution. In this way, the requirements for labeling present a barrier to international trade.

## 7. SPECIAL REQUIREMENTS CONCERNING GOODS PACKAGING

Packing or packaging of products (French: Emballage) is a protective layer around the product that in addition to protecting functions of the products, has operational, marketing and information function. Packaging as a process of placing protective layer around the product, is done at the manufacturers. For some products some countries require special forms of packaging, whether it is a potentially dangerous products from or a need to protect consumers. This means that the manufacturer has a different packaging of products for markets that they are



intended for, or that the importer must repack the imported goods. Anyway, this means the increase of business costs, higher price for the product and deterioration of the competitiveness of companies on the imports market.

## **8. TESTING, INSPECTION**

The customs authorities of each country have the right to review the goods, and carry out inspections for goods entering the customs area under their control. If the customs authorities evaluate that the goods did not match certain standards, they have the right to ban their market entrance even when the goods were previously treated to procedures to test compliance with the standards.

For the assessment of compliance evaluation at the border, there are special laboratories in which testing of goods is carried out, as well as the warehouses where goods are stored until reviewing and testing. For dangerous products we have special warehouses - quarantines. Typical example for the appliance of these regulations are sanitary and phytosanitary measures that the state provided, and the customs service applies. They are used in food products in which they determine the products compliance with relevant regulations on quality.

## **9. ECOLOGIC BARRIERS**

When the export of goods from one country to another country is disabled because of the existence of strict regulations on environmental standards, we say that there are Environmental Trade Barriers. In countries where there are regulations on the protection of the environment a certain examination of compliance with environmental standards is required when importing certain goods.

One study of UNCTAD and the International Trade Center found that from 4,917 observed products traded globally even 3,746 are under the influence of environmental barriers in foreign trade. Products under the influence of environmental barriers participate with 88% of the total world trade of goods in 1999.

Such a significant impact on trade of environmental regulations has led to significant debate in the international community about the priorities of preserving the environment, or growth of trade and increasing the standards of the population. The final result of the discussions on the relation of foreign trade and ecology in the international community is a statement that the protection of the environment is important for the state of pollution on the planet, but that this protection must be implemented at the international level to make it less of a barrier to development of the economy and world trade. The so-called global concept of sustainable development was launched, and it includes natural development with environment protection.

## **10. COMPATIBILITY OF PRODUCTS WITH EU DEMANDS**

When the consumer sees the "CE (European conformity)" mark on the product, he should know that such a product is compliant with the requirements of EU directives in regard to security, environmental protection and health of users. Government of EU member states passed directives in their own legislation and allow the import of products complied with the requirements of the directive.

The CE sign is applied to the device, modified equipment, packaging and accompanying documentation, and it means that the competent authorities can recognize that it is a product that was put on the market, in accordance with these directives. If more directives are applied to the product, then they must satisfy the requirements of all relevant directives. According to them, we determine the control that should be made to the product or the production process prior to release to the market. While some control is performed under the responsibility of the manufacturer, the other must be made by the appropriate organizations, the so-called competent body. Controlling the performance in a country in the EU are automatically approved by all member countries, and putting a mark CE on the product allows the free trade flow on the entire territory of the EU. The CE mark will be set on the product (label) or on the packaging for the product packaging so it can be clearly visible, and it is prohibited to place similar marks that can cause a customers mistake. This symbol should be accompanied by:

- The name or identification sign of the manufacturer;
- Indicating of product characteristics that identify it;
- Symbol of an organization that is involved in the supervision (if involved);
- Number of EU attests on accordance (if any);

From the standpoint of consumers the CE mark is the most important and also one of the signs of accordance together with a statement about the accordance of producers and manufacturers in traffic and attests (accordance documents).<sup>2</sup>

Many manufacturers, unfortunately, deceive consumers, putting a CE mark on the product (especially in children's toys and tools) although they have not met standards in terms of security, environmental protection and health in accordance with EU Directive. If the suspects in compliance with the directives exists, member states are obliged to take the following measures: the prohibition of putting the products to market, to withdraw it from traffic or limit the free circulation.

For the purposes of exposure to trade fairs, exhibitions and demonstrations the EU member states may allow exposure of products that are not consistent with the Directives. When we talk about, for example, the machinery, they must be labeled a separate label, which provides notice of not fulfilling the requirements and directives to sell these machines, and their selling can occur only after establishing the full compliance with the directives.

A new European label "keymark", which is being protected from the European Institute for normative CEN and CENELEC,<sup>3</sup> will be enabled for manufacturers to use to show that their product is in accordance with European standards in terms of safety, quality and ecological impact. The "keymark" sign means that the product is in compliance with EU standards. The rules of use are developed by the CEN, but each country is responsible for their appliance.

Apart from the two marks listed in the European economic area, there are national signs,<sup>4</sup> being used: **NF** - French national mark, which has four logos (for consumer goods products, for agricultural products, services and eco-NF); **UNI** - Italian national mark; **N** - Spanish national mark, **U** - German national mark, which refers to the construction equipment; **BENOR** - Belgium national mark. At the EU level, there are marks such as sector marks, i.e. ENES - in the field of electricity. The general impression is that the national and sector marks are more multiplied, the CE mark is less and less taken.

## 11. CONCLUSION

Management of transposition activities of material products include certain specific steps or operations that the manufacturer or supplier undertakes to unburden and protect their products. These activities vary depending on the specific requirements of some of the field in the logistics chain. For all the subjects of foreign trade business, the practice of international standardization, specifications, procedures, compliance with technical regulations, is important to increase business flexibility and profit.

**For all these activities we require the existence of appropriate classification, nomenclature and standards of material products in trade turnover**, according to criteria of international economic organizations, on which we base the forming of the structure of production of commodity products important for the practice of management of trade. The need for detailed diversity of material products arises from the necessity of producers to make their product closer to potential customers. In this way, all products classified in the different list of products on the basis of which the analysis of trends in the market contest, change of directions and the structure of commodity flows can be made. A special segment of this work is related to the respect for the uniform standards of material products in international trade transactions and their compliance with the requirements of the European Union.

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<sup>2</sup> Signs of accordance are preceded by rating of conformity with the requirements of directives to the following modules: module A - internal controls in the production process with additional requirements; module B - testing by EU standards; module C - compliance with standards; module D - quality assurance in production; module E - providing quality of products; module F - product verification; module G - product unit verification; module H - providing full quality and a number of possible additional requirements.

<sup>3</sup> CEN - Comité Européen de Normalisation (The European Committee for Standardization). CENELEC - Comité Européen de Normalisation Electrotechniques (European Committee for Electro-technical Standardization).

<sup>4</sup> National marks are applied to the product, next to the CE mark, and except for compliance with directives and standards, they testify that they meet some specific requirements. Using the CE mark is required, compliance with European regulations is also required, while the national marks can be voluntary put on products and they depend on the requirements and needs of consumers.

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## **MATERIAL PRODUCTS TRANSPOSITION DEVELOPING TRENDS**

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**Summary:** Factors of modern transposition processes include besides known logistic principles a new concept which is seen through the new requirements of the market, fierce competition provoked by globalist movement, changes in international goods movements, product structure changes, which demand goods practice to be harmonized. Space dispersion of industrial production, intensive development of industrial and consummation centres, urban structures differentiation are characteristic forms of modern civilization generators of new requirements for goods transport. Goods flow are cause and effect factor of constant growth of space, time and quantity transformation in constant change of material goods transposition in activities of packing, loading, transport, storing, reloading, transport, unloading and delivery. All the activities of goods flow transformation cause immense work, material and energy costs, transport and manipulative damage cost, connected capital cost. The purpose of this paper is to pinpoint to systematization of goods flow activities and their transformation in context of global competition requirements and process of homogenization of consumer needs. Special aspect of work is in defining decision-making in activities of physical distribution of material products as a key component of material goods transposition.

**Key words:** Concentration and integration of goods flow, flow transformation, physical distribution

### **1. NEW ECONOMICS DINAMICS, CONCENTRATION AND INTEGRATION OF GOODS FLOW**

Globalization is a defining process of present part in development of international economic relationships in the world. During the last few centuries the enterprises constantly aimed at enlarging their presence at home and at foreign markets. In earlier terminologies these processes were considered under international division of work, which mostly defined real flows of goods in the world's economy and trade. Even though the process of globalization was provoked by fast technology growth, and especially informatics and communication technologies, it stays that the key area of economic globalization is in the sphere of trade goods flow. One of the most important characteristics of globalization is a growing concentration and monopolization of economy resources and multinational company power. These processes are name as "transnationalization" in literature, where a few multinational companies gain a great part in managing world's resources, production and market. Differently from big and classical enterprise that dominated the market of big enterprises, modern new multinational companies are typical producers or traders of a larger number of products and services. Through integration and merging of a few transnational companies they control a larger part on global raw material market, industrial products and services. Traditional division by local, regional, national and international market becomes less and less relevant. It also came to a big mutual dependence in the world under the pressure of development of producing power, communications, and means of transportation. Judging by that, it is obvious that no market can develop in isolation. By freer capital, work and idea flow, information becomes modern, and attitudes that technology and globalization make today's reality are becoming more important. The most profitable competitor according to the new interpretations is the subject which uses the advantages of global market and projects its business system to achieve better business result as much as possible. Globalization, from the buyer's point of view means that they buy different products not thinking about the origin of the parts the product is made of (composed) Buyers more and more ask for products that satisfy their needs best, followed by

appropriate price and quality, undependably of the country of origin (need for disposable goods especially in the generation of consumers under 30 years of age, is quickly homogenized through countries and continents). Globalization means fierce competition around the world which will make enterprises to rationalize further. When you define global character of work, you look for technology around the world which will be suitable for the largest number of markets. When a product is formed it is planned that it should be acceptable in maximum number of states, to reach to maximum number of similar market segments, or to be easily adaptable for different market [15]. Global enterprises are not only those that produce product for global (world's) market but also those corporations which own standardized concept of products adaptable to be made in variants which are wanted by national markets and regions. Having global concept of a product means to have such an ability to create a line of different models using basic technology out of one elementary (basic) idea.

Global tendencies or global trends change business philosophy and marketing strategy of material product transposition considerably. Numerous phenomena come out of this [10]:

- Strong development of so called Off-shore financial markets with large amounts of money and products;
- Buying practice explosion and merging enterprises in regional international boundaries which has already brought to global restructuring in certain industries and to integrations and concentration of suitable activities;
- Fastened process of buyer need homogenization, levelling of tastes, product standards and producing methods;
- Boundaries have been moved for economic decision making from national to global level;
- Producer becomes world's multinational network in which each participant finds and makes his interest;
- Global competition is characterized by a high quality and reliability product offer, and traditional idea about direct connection of quality level and high costs is brought down. Enterprises that do not have international market ambitions will have to think on world's tendencies in different areas they belong to.

Adjusting up-to-date work to current trends of new economic reality we were led by the need to introduce new knowledges on general management model development of material product transposition. Today's factors of modern transposition process besides already known logistic principles include a new concept which is seen through new market requirements, fierce competition, change in international goods flow, product structure change, higher quality in goods delivery and cost decrease. This approach requires perception of the whole production system of a broader region which is observed. Different jurisdiction of managing and decision bringing material product transposition is possible to realize only through goods practice harmonization. Likewise, the whole complex of problems should be seen joined with custom and tax Law changes, free trade Laws, and joining regional interstate organizations and initiatives (CEFTA, EU etc). The aim of changes is to create safe and stable regional surroundings, make material product, capital, and technology and model transfer distribution easier. Regional functioning implies clever and rational decision bringing on connecting all the activities for getting optimal effects of macro and micro region systems. Mutual connections among regional, material, energetic and informational flows go under principles of intensive coordination and integration by which material products transposition flows are transformed in space, time and quality. World trends of concentration and integration show that savings of material and human resources are proportional to citizen life standard increase. International work division, decentralization and space dispersion of industrial production, intensive development of industrial and consuming centres, agrarian and urban structures differentiation, are specific forms of modern civilization and generators of a new dimension of goods transport requirements. Goods flow whose weight is stated in millions of tons transits through regional, national and international spaces. Goods flows are cause and effect factor of constant growth of space, time and quantity transformation in continual changing in activities as packing, loading, transport, storing, reloading, transport, unloading, storing, delivery, etc. All the activities of space, time, qualitative, quantitative and other transformations of goods flow provoke enormous work, material and energy costs, manipulative damage cost, tied capital costs, etc.

## 2. MATERIAL PRODUCT FLOW

Material flow is mostly connected with various types of materials in different aggregation states in which most raw materials appear, half products prepared for further production and pressing, and all the flows of recycling material, waste and return materials. Goods flows are mostly defined by placing final products in the market for consummation or using.

Basis on which it is possible to make differences among these flows are in phases of creation and consummation of the product and its aiming towards the market.

The thing that can distinguish between these terms is in different characteristics of raw materials and half products flow, in the process or purchasing and production, flows of final products and distribution to consumers, as well as waste and return material flows and secondary raw materials. Characteristics of these flows may differ considerably and are extremely important for many plans, projects and are more important than

initial term classification to material, goods and shipping costs. Terminals aimed at receiving, servicing, and delivery of these flows may be similar to differences which belong to a type of flow. In goods terminals and goods transport centres all types of materials, goods and cargo can be found by all structures and characteristics of mentioned flows. Terminals for specific type of material for example wood or timber, get the name wood terminal or terminal for wood and keep the name whether it is in the industrial complex, goods transport centre or port complex. Container terminal may be located next to industrial complex, goods transport centre or seaport. Terminal structure will not be significantly affected by material type, for example copper products or type of goods for example soft drinks. Its structure, size and functions may be affected by intensity and characteristics of flows that gravitate to that location, as well as characteristics of means of transport or types of transport. Goods flows from place of sender to place of receiver go through a line of transformations which often significantly change their characteristics. The fact that goods sender can be one company and that receivers can be various subjects shows division-transformation of the flow. Transformations of goods flow mostly happen in goods terminal – logistic centres. By knowing the characteristics of goods-flows and their transformations conditions for proper planning, projecting and managing goods terminals are created. Goods flows are basic thread of logistic systems, but at the same time no goods flow could be realized without logistic systems and logistic chains.

Goods flows transformations are happening in goods terminals, and trends in production and distribution of products go towards an aim to make product finalization closer to final user. This implies that certain activities on product preparation or value adding to the product (eng.value added services) specially move towards the user and are done in terminals which are often far from production complex. These trends are consequences of new requirements concerning the quality of logistic service created by users.

## 2.1. Goods flow transformation

Material product flows are an integral part of all economic systems. Each company, each individual for purposes of doing his activity, or satisfying requirements and needs, generates moving of goods flow. Goods flow has a beginning and an end, a spring and an abyss, a few meters away from each other, a few hundreds of meters, to a few thousand kilometres. At a road from point A to point B goods flows go through different systems and are subjected to different processes which change their basic characteristics, features. Goods flow transformation is possible to describe (picture 1) [24]:

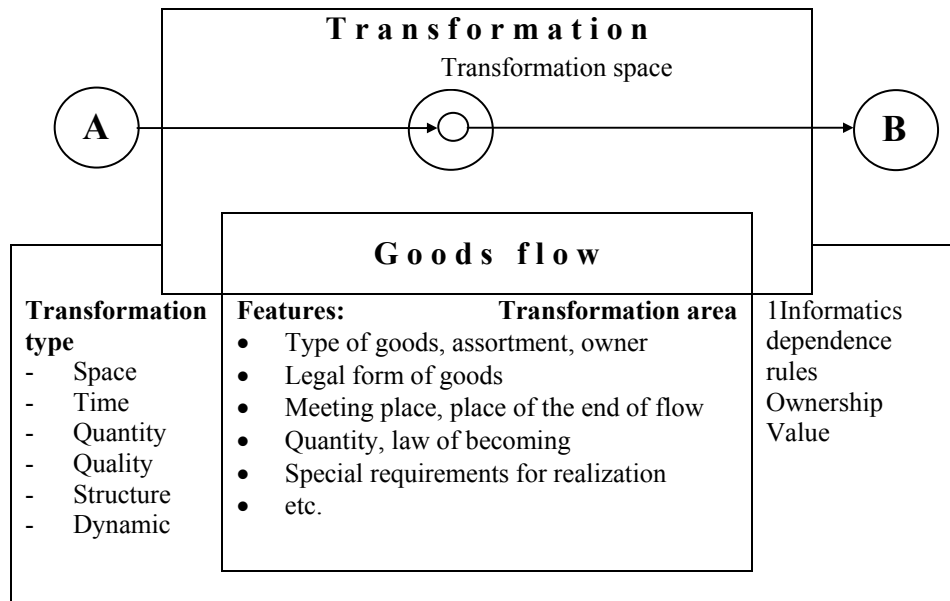
**Transformation space** is made by all the systems and processes through which goods flows go and where transformation can take place. Systems and processes belong to all the activities, from primary (agriculture, mining) to secondary (industry, construction, and energetics) and tertiary (trade, hotel management, etc). Special spaces where transformations are performed are transport, storing, packing, reloading systems etc. All systems and processes that support movement of mentioned category flows are part of transformation space.

**Transformation type** is defined by a specific attribute which describes at least two different states of goods flow which can change during movement. Movement and changing of flows is possible to view concerning:

- Space
- Time
- Quantity
- Quality
- Structure
- Dynamics
- Definity
- Informatics
- Dependence
- Ownership
- Value

**Spacial flow transformation** is basic chain which follows goods flow and is defined by movement, or changing of space. Spring and abyss of goods flow are mostly divided and in space sense connected by definite way and measurable size of a road passed stated in some of measurement units. In space change the most important role is carried by a bearer of that transformation, and that is a transport system with all the solutions concerning type, size and technology (striped transporters, hanging containers, elevators, road vehicles, trains, ships, pipelines, underground transport systems, forklifts, etc.).

**Time flow transformation** is a process of movement and not movement in goods flows which is possible to be measured in reference to those processes length. Dominant time flow transformation is done by not moving process which in physical sense takes place in storing systems, and in functional way in a system of keeping stock supply. Time flow transformation in different processes may have significantly different time dimensions. So the goods flow in so called “puffer” storage may stand for a few minutes, so that later, in the process of placing, for example a car spare part can spend a few months or even years in distributive storage place.



**Picture 1:** Goods flow transformation  
 a) Space of transformation; b) type of transformation,  
 c) Area of transformation and d) place of transformation.

**Quantitative flow transformation** happens when means of transportation are changed, in the process of reloading or changing loading manipulative unit in the process of enlargement or breaking up in collective – distributive processes. Typical example of quantitative transformation happens at reloading of goods from one ship to a significantly smaller means of transport by land: trucks, wagons, etc. Also while collecting boxes or palettes in function of forming bigger units (containers) come to quantitative flow transformation. The same way is with processes of commissioning, or breaking up of smaller quantities of different structure of goods from a storage system with a larger number of articles in larger quantity.

**Qualitative transformation flow** has more various forms. Goods on its way, and in function of placing it on the market, may be subjected to one of the processes of improvement, or processing, competition or treatment. By changing of the main features of products in one of the mentioned processes quality of goods can be improved. Processes can be printing, colouring, packing, marking, cleaning, sorting, ripening etc. They influence making of new forms of goods with an aim of fulfilling requirements given by a client on the market. A large part of activities fulfilling qualitative requirements is done on the way of moving and standing of goods, in some of the transporting or storing systems, or specialized systems and objects in logistic terminals. Ripening of fruit in the process of distribution and transport is one of the numerous examples of this kind of goods flow transformation.

**Structural flow transformation** shows that goods flow on a part of its way changes in accordance with requirements of the final receiver of goods. These procedures can be performed during space change and during retaining goods process in storing systems. Procedures as sorting, commissioning in accordance with requirements of consolidation or dividing and distribution of goods are most often parts of the activities of storage systems and specialized terminals. Goods flows at entering the terminal might have a homogeneity mark, in each of (n) vehicles coming into the terminal may be (n) different kinds of goods, and in each of these vehicles is one different kind of goods (homogenous shipping). When exiting the terminal in each of (m) different vehicles combined structures of (n) types of goods may be found (inhomogeneous shipping). Enlarging process is a typical process in which combinations of many transformations on the way of goods flow happen. Collecting packages and combining them into a larger units of manipulation (larger boxes and palettes), may cause changing structures of flow besides enlarging quantity., by collecting different kinds of packages or collecting more palettes with different structure of goods and its loading into a container Enlarging and structural change of units may go towards a larger quantity and larger number of different types of goods or articles.

**Informatics transformation of flow** refers to the flows of goods which in the process of distribution move and stop according to two basic principles: principles of flow to unknown and known buyer, or according to principle of “pushed” and “tugged” flows. On the part of the way flows may move without the existence of precise, reliable information on destination place and a client for whom the goods are planned. Informational definition of flow may have three different levels: there is no information on final disposition of flow, the flow is completely informatively defined and the flow is completely defined to a point on the way but there is no information on final destination. For undefined and incompletely defined elements of flow, transformation mostly happens in tranquil phase of goods flow in storage systems, or terminals. Based on requirements for

goods delivery, available stock and its availability from a certain location of a storage system a precise disposition is issued for goods delivery to the clients at required structure of demands. Spare parts for cars are delivered according to a “push” strategy of unknown buyer to regional storages of car distributors where they are directed or redirected to a specific or some other region based on buyer order list. The role of informatics transformation of flow is aimed for systems of ordering, stock and storage and then systems of packing and transport. In physical sense a flow without information is mostly transformed into a flow with information in logistic centre-terminal.

**Owner flow transformation** refers to information components of goods flow which can be pictured to the area of ownership of goods and distribution flows. In distributive chains producers, mega markets, retail, logistic provider, buyer, etc, appear. The number of participants and the number of their combinations in the chain can be different and extremely large. Goods ownership can be changed at any phase of goods flow which starts at production system itself and ends at final destination of flow. Goods ownership change influences shaping of structure terminals – logistic centres, as owner change requires special subsystems of terminals, technology, layout, etc. Dutch flower producers deliver their products for world’s market to logistic centre for flowers AAlsmeer, near Amsterdam. Apart from the all necessary activities for accepting, packaging, sorting and delivery of flowers to the world’s market, there is a flower stock market. There comes to a change of ownership, after which, the flowers get transported to the airports or train stations besides other ways through underground system, and later to distributive network and final users. In this chain of supply, on the way that goes to other continents the goods can change owners more than once.

Mega market owner who buys bananas at a plantage takes them to the market and sells through stock market in London. While being shipped, for example to Europe they change owners. In stock trading market for fruit and vegetables in Munich mega market and retail traders exchange ownership over goods; other types of transformations take place during the process after which goods flows are aimed to final users, firstly to Germany.

## 2.2 Area of transformation

Those are different features of goods flow which in accordance with changes, change their attributes and rules. Features of goods flows are:

- type of goods, or assortment,
- appearance form of goods,
- kind and category of flow,
- delivery point of flow,
- quantity, law of flow becoming and
- Specific requirements for realization.

Type of goods and assortment are basic features of flow. They are defined at step one of goods flow analyses, and classification processes used in practice are rather different. Goods classification vary from standard nomenclature used in official statistic data bases, to classifications which for their own use and for different purposes are performed by individuals or certain companies in different activities: industry, trade, traffic.

Goods and assortment classification spectra is extremely wide and nomenclatures can number a few hundred to a few thousand species and assortments of goods. Grouping goods at the level of usage are mostly done by statistic organizations, so that according to Statistic Office of European Union (EUROSTAT) a nomenclature of ten types of goods is used. Harmonization and standardization of statistics at international level enables better data comparison and rationalizes all the procedures of gathering, processing and presentation of data at international level. Aggregation of data for functions of the aim, planning and projecting of logistic systems, let’s say goods terminals, requires application of special methodology. Grouping goods according to appearance form in general comes to collecting goods according to main characteristics of logistic system technology. For example we may show that data which quantifies goods flow of cement is not usable for a planner or projecting engineer if it is not defined by appearance forms of these goods: dust, bag, palette, and container. Bagged cement requires one technology of transport, reloading and storage, palletized cement some other, and dust cements the third technology that differs considerably from the previous two (table 1). Goods flow classification is done according to the aspect of reviewing considering many factors as: space where they appear, economic-installation units, geography politic divisions, traffic-transport and logistics destinations, market destinations, etc. [24].



**Table 1:** Interdependence of appearance shape of goods and technology of transport, reloading and storage

GOODS TYPE	APPEARANCE SHAPE	TECHNOLOGY		
		TRANSPORT	RELOADING	STORAGE
CEMENT	DUST	Vehicles Cisterns	Pneumatic device	Silo
CEMENT	BAG	G car, truck, lorry, covered truck	By hand, stripped transporters	Closed floor storage
CEMENT	PALETT	Closed or open car	Fork lifters	Floor or board storage
CEMENT	CONTAINER	Container transport vehicles	Crain, fork lifter	Plato-opened

Place of starting and place of finish of flow is defined according to previously described flow features, and before all implies defining two pieces of data or “spring” or “destination” of goods flow. Analyses of spring/destination points of goods flow imply defining at least four pieces of information, or size [14]:

- First, elements of a cluster of senders and elements of a cluster of receivers should be defined, their type of an activity of trade, industry, logistics, etc.
- The second task is determining location which should be defined compared to space-economy objects and systems.
- The third task is connected to location and placing of starting and finishing points in comparison to logistic centres, terminals, transport corridors, axes, and highways.
- The fourth size which is necessary to be determined is the distance between the points. This size can be determined based on basic space destinations and traffic-transport roads which connect starting to final destination point of goods flow.

Specific requirements for realization of goods flow may be considered from a few angles as follows [4]:

- Requirements that appear may be a consequence of physical, chemical or other features of goods;
- Requirements that appear as a consequence of business logistic processes and
- Requirements set by surroundings through which goods flow moves.

Based on physical and chemical features of goods, and in accordance with goods protection from negative influences of surroundings, as well as protection of surroundings from negative effects of goods, specific requirements for packaging transport, storing and reloading appear.

Requirements of business-logistic processes influence division of goods flow on their intensities or consolidation towards specific transport destinations or consolidations at servicing space units. Specific requirements that are exceptionally processed concerning logistic service quality (time realization of flow, reliability and flexibility, delivery conditions etc.).

Requirements for goods flow realization may have different status concerning fulfilment obligation. So all requirements can be classified into three groups:

- Obligatory requirements which must be fulfilled or goods flow will not have its realization,
- Desirable requirements which, if fulfilled, influence quality of goods flow increase,
- Unobligatory requirements which organizers, goods receivers do not expect, but if fulfilled they enable significant business-economic effects.

Requirements which are not in obligatory category, and partly those that are in category of desirable are mostly connected to wishes and expectations of business partners connected by goods flow and have the character of quality and satisfaction of users in the market.

### 3. MANAGING PHYSICAL DISTRIBUTION OF MATERIAL PRODUCTS

Physical distribution has a dramatic effect upon the success of product selling. On the way from the producer to final customer it is necessary to solve many problems connected to physical aspects of product flow, independently of the fact whether the products are: ice creams, kitchen tables, air conditioners or irrigation systems. Products must be sent, shipped, stored, kept and delivered with an aim of contribution to more efficient using of time.

There is no generally accepted definition of physical distribution. It is a term which is mostly used in the area of production and trade for describing numerous activities that enable efficient physical movement of the product to the final users. In other words, physical distribution refers to product movement from the producer to users with

main focus on physical aspects of the flow and material product conditions, and not on activities of institutions inside distribution canal.

Physical distribution has a larger number of tasks which can condense in one basic which shows its purpose: minimalization of costs with maximalization of customer service. Lower total costs and higher level of customer service almost always exclude one another. For example improving the level of customer service implies that managers of physical distribution work with a higher number of storages and that each storage will have a large supply of stock so that local customer orders can be fulfilled faster. Connected to this, managers should have a ready fleet of vehicles that can distribute the goods to customers in a matter of hours since they have been ordered. Opposed to customer service maximization, total cost minimization implies using a few storages, keeping small supplies and using cheaper means of transportation.

At the same time fulfilling both requests of cost minimization and customer service maximization are mostly impossible. Certain compromises for purposes of fulfilling both requests are necessary. Physical distribution management wants the managers to focus their attention to increasing customer satisfaction when they plan or do any activity of physical distribution. During this, distribution costs should be, as other elements of distribution system, define from the point of view of customer requirements. If market analyses show that customers are interested in fast delivery it means that it should be determined how ready they are to pay higher price for such a service. In some other cases customer may prioritize something else instead of delivery speed. Buyers of furniture and complex household device might want to buy from the retailers which offer qualified services of assembling and product installation than from the retailers who enable faster delivery. Those buyers are ready to accept longer delivery deadlines, to sacrifice delivery speed to the feeling that bought products will be assembled and installed in the best possible way by qualified workers. So, physical distribution managers must explore and identify customer demands, connected to meeting maximum of service and minimum of total costs [12].

Managing physical distribution implies shortly said, deciding upon certain elements and combining them into a total system of physical distribution. In physical movement of the product from producers to final customers we may divide the most important activities of physical distribution. Managers must consider their mutual relationships and individual contribution of each unique activity to the total system of physical distribution. Main activities of the physical distribution system are:

- Transport,
- Storage,
- Supply control,
- Goods handling,
- Order procession and
- Packing.

### **3.1. Deciding on transport**

Deciding on transport includes selection of specific solutions which will be used for physical moving of products from producers, mega traders or other traders to receiving capacities of buyers. Main alternative solutions on transport include: truck, air, railroad, water transport as well as pipeline transport. One criterion of their comparative importance is the parentage of their participation in realization of total transport on national and global international level.

Besides alternative transport solutions, managers of physical distribution must think about exchange in the process of distribution. In the first place they must think about customer needs. If it is especially hard or expensive to satisfy their needs readiness of buyers to stand the costs should be investigated. They also have to think about the nature of the product (size, perishableness, weight, fragility), about necessary speed and reliability of delivery, about expenses and availability of transport methods and storage space. Available alternative solutions must be marked from the point of view of these variables for purposes of transport service efficient choice.

### **3.2. Deciding about storing and storage choosing**

It includes three fundamental decisions. The first refer to the choosing of the type of storage, the second refers to deciding upon optimal number of storage locations, and the third refers to deciding upon the level of stock to be kept in the storage. The third decision is mostly a part of the stock control process. While bringing these decisions, appropriate compromise should be found between requirements for storage cost minimization and satisfying level of customer service [23].

Storage is a physical object which is primary used for keeping goods necessary for anticipated trade or transfer inside distribution canal. Storing contributes to minimization of goods on stock shortages made by difficulties in predicting demands or inconsistency between production and consummation. Deciding on storage type includes two main decisions. The first refers to a choice between private and public storages and the other to choice

between central and local storages. From the point of view of the ownership we can distinguish between two broadly present storages: private and public storages. Private storages are owned or rented by a bidder or retailer, members of distribution canal. Public storages are specialized storage and goods handling service performers which most often rent their business space to business enterprises based on monthly contract with a rent in a form of storage tax and goods handling tax. Private storages are especially important when products require special handling and storing as the case is with perishable products. Private storages also show more understanding for enterprise attachment to some products or geographic regions. Producer or trader will use private storages when season variations are small and when demand for goods is relatively stable on geographic area that will be serviced by the storage. In comparison to public, private storage enables higher control level of special conditions of storing and special handling of goods.

One of the broadest types of privately owned storages are distributive centres. Distributive centres represent main storage capacity in private ownership which services regional market by consolidating of large deliveries from many suppliers to a large number of small orders of local customers. Suppliers distribute the goods to distributive centre and then it is delivered to factories, middlemen or retail objects. Advantages of this way of distribution are:

- Smaller stock supply in distributive center from the supply in customer storages;
- Higher possibility of getting quantity discounts when buying;
- Higher possibilities of automatization of storage business and lower costs of storing and transport.

Public storages are very useful for supplying customers at new geographic markets, when season demand cannot be satisfied by mere using of private enterprise storage, when demand for goods is not stable or when the enterprise uses chosen products as a guarantee to get loans.

Decisions on location choice and storage size from the available storages by marketing managers may be divided into two different combinations. In one case producer can do a large deliveries to storages with huge capacity located close to the producer. From those large storages deliveries are made in smaller quantities to retailers and other buyers. In the other case the producer can do relatively large deliveries to different remote storages with smaller capacity located close to the buyer. Each of these storage alternatives has certain advantages in cost and service. In the first case, using of a few large storages located close to the producer may bring the economy of volume and other advantages, but also certain reductions for customers. In the other case locating storage capacities close to buyers has trade attraction, but includes business with a large number of storages and work with small deliveries as local storages serve only local markets. In deciding upon choosing storage location it is

### **3.3. Goods handling**

It includes elementary operations which refer to physical movement and goods supply transfer. Material products must be physically moved from producer to consumer or inside the storage from one place to another. Those movements and transfers require using labour, machines and identifying equipment, control, loading and unloading of goods. Choice of the way of handling goods depends on the type of goods, type of storage, way of storing and delivery and other factors. In the second half of this century there was a significant improvement in mechanization usage in the process of handling goods. Workers, who handled the goods physically by hands in earlier times, today became operators of numerous mechanical means as: fork lifters, transport stripes, elevators and cranes. In recent times using of robots increased for tasks dealing with goods handling. In many storages orders can be gathered, and goods packed without including human labour. For fulfilling the aims of efficient control of material product physical flow and handling products it is necessary to predict and plan the following needs [13]:

- Handling and holding of entering supply of material, parts and other input,
- Material supply control and final product supply control,
- Handling final products and their delivery to distribution storages or middlemen,
- Dumping waste and badly produced output.

### **3.4. Protective packaging**

It has a very important part in physical distribution because of the fact the products can be appropriately protected during the process of distribution. Damages on products cost and may happen during transport and storing. Product protection during process of physical distribution includes protection from perishing, damaging, moulding, insects, dirt and other unwanted influences.

In the process of decision making on product packaging, physical distribution managers must decide upon the quality of the product, appearance of the package and costs. Less obvious but not less important are expenses of repackaging of products into bigger or smaller quantities as retail or mega trade packages are. Deciding upon packages must take into consideration the need to minimize difficulties in goods handling. For some products as machine parts, packages are usually marked with different colours or in some other way that can make order

delivery process easier. Specific requirements of customers and products represent different challenges to physical distribution managers to make the shape of packages more effective.

#### 4. CONCLUSION

International work division, decentralization and space dispersion of industrial production, intensive development of industrial and consumer centres, and differentiation of agrarian and urban structures are characteristic forms of modern civilization and generators of a new requirement dimension for goods transport. Goods flow whose weight is expressed in millions of tons transit through regional, national and international space. Goods flows are cause and effect factor of constant growth of space, time and quantity transformations in continual changing in activities of packing, loading, transport, storage, reloading, transport, unloading, storage, delivery, etc. All the activities of space, time, qualitative, quantitative and other transformations of goods flows make enormous expenses of work, material, energy, manipulative damages, tied capital etc. As a key trend in transposition of material products physical distribution appears. Managing physical distribution means deciding on activities of transport, storing, supply control, goods handling, orders processing and packing. Alternative solutions on packing include transport type choice and the way of the most adequate protection of product taking into consideration size, perishableness, weight, fragility, etc. Decisions on storage location and size understand optimal decision concerning expenses, volume economy, capacity and types of used storages. Handling goods is an important trend of physical distribution where optimal decisions are expected concerning with keeping and handling input and stock control of final products and dumping out-of-order made outputs. In the process of decision making of the packing of products the important actual trend becomes packing quality. Deciding on packing must take into consideration the need to minimize difficulties in handling and specific requests of customers and products for more effective product shaping.

The aim of this paper is to pinpoint systematization of activities of goods flows and their transformation in the context of global competition requirements and the process of homogenization of customer needs. The special aspect of work is in the process defining decision making in the activities of physical distribution of material products as key component of material product transposition.

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## **WITH INNOVATIVE TECHNOLOGIES IN XXI CENTURY**

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***Summary:** The human society development has a trend of modification, accomplishment, and overcoming starting conditions, constantly transforming material and non-material environment and man's mind improve about own self and leaving ambient. In that environment, men appear like generator of changes which are actuator and development manifestation. He is "innovator" - creates new ways and solutions, toiling on that way to simplify his reality. In economic sense, innovations are creative process in which two or more existing facts combines on new way with goal of producing new valuation. Such comprehend innovation, among other things, incorporate the widest society changes process, which appear like answer on new technology use and it is possible to apply on things, events and processes. In international work partition, position of one country, in the first of all, depends of implementation the latest accomplishments science and technique in its economy. Economic efficiency economy becomes these which develop technology which becomes main component of growth and development. Dynamic technology development imposes necessity and in same time it manages high level of internationalization of economy life, pull down many of politic and ideological barriers, and previous enemies and rivals transform in contributors. The accelerated technological development becomes main factor of economic development of world's economy.*

***Key words:** technology, innovation, concurrency, knowledge, development.*

### **1. INTRODUCTION**

The enterprise, which themselves suppose like innovative, insists to increase own concurrency with constant accomplishment of own products, process and services. It becomes obvious that is main factor countries ability is to maintain economy growth and concurrency, is that activate innovations and learning. Innovations presents challenge for each business and each sector, especially for these who are expose international concurrency on inland and foreign markets.

Technological innovation accomplish evident domination own complexly, changes speed vitality for concurrent prosperity of one firm. In the times, which are, not so far, stayed beyond us, they necessity years that by new technological processes, acquire products be - develop, mass production, standardize and market to emporium by extensively realization and campaigns of promotion. Term of realization of these products measured by decades, in production processes equipment used applied only for that standardized products and accomplished profit were measure by economic scales.

Today, products development represents primary assignment-imperative for coherent implementation "technology pyramid", and with that, today's technology management requests that managers understands the way of technology appearance, develop, influence on concurrency between organization and human employ.

In very eminent American competent journal "Business Week", on November 26, 2001 year, Olga Kharif from Portland, advertise feature (news analysis) under title "Native Americans Stake a High-Tech Claim", in which describes implementation of high information technologies, in Indian Reservation in South Dakota, owing to tribe chief Greg Borland, who attended lessons of Internet and computers use, and who created Internet portal [www.siooux.org](http://www.siooux.org).

At the end of the 20th century, Toffler the first use term "Knowledge society", this would be describing society which becomes: Technology and science progress in the last twenty years, affirm correct himself preconceptions. Technology, technical and science elite of cosmopolitan visions and cosmopolitan consistency changed the world in which we live and the way what we are thinking.

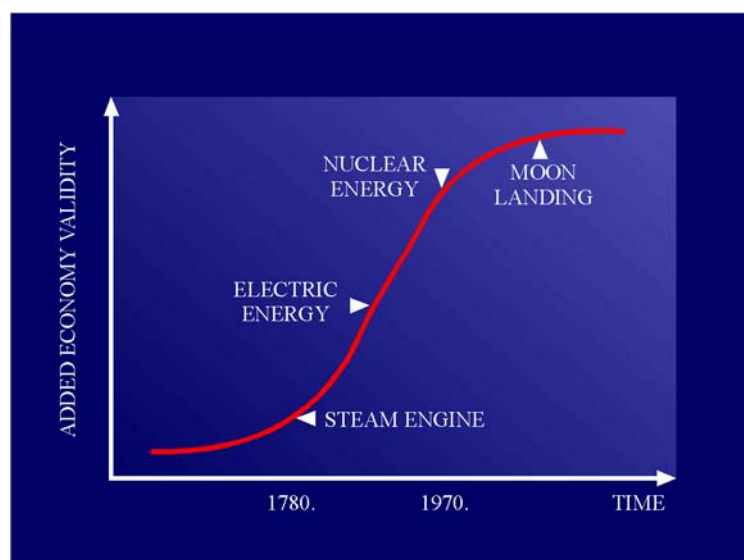
With development and wider appliance of electronics, it instigates total society development and negative consequence eliminates of older technologies. Development effect intrudes to post-civilization society essentiality of institutionalization of researches and development, with changes in knowledge and technology sphere and, indirect, economy transfer from primary and secondary in tertiary sector.

Modern economy, with technology and electronic expansion - especially in computers and communication range, changes industrial process which is not anymore determinant basically of structure and validity changes. Scientist and technically knowledge, accomplish production process, which is wide on all aspects of society life.

"If we understand technology like a big motor, powerful accelerator, than the knowledge we can understand like its fuel. We came on intersection on acceleration process in society, because the motor supplies with fuel more and more, every day" [10].

When we talk about technology innovations, they, before all, have physically nature which is based on natural science base, and then on society-economy base. They are characteristic because, they stayed unchangeable in longer-term period, without respect on innumerable changes of conditions in which they are exist. Logically and acceptable conclusion follows, that is without understanding internal dynamic of innovation technology, our process understanding which relates to technological progress, is not complete. We can to conclude that new technology step out, cannot explain completely, with use social-economic terms, although a number of researcher think that it is possible. Approving unpredictable and large variability of changes learning in technology, they requests acquirement in consideration physical parameters, technical and economic nature.

By aspect of socially economic researches, technology step out, certainly, has big importance. Also, from excellent importance is acknowledgement internal mechanism of innovation process in technology range. That, what is completely evident, is new, on science base established technologies which create economy age (figure 1).



**Figure 1:** Strategic points of industry development era [9]

Education system development, could be to say, cannot to follow development of technology. Obvious that exist discrepancy which understanding is, and in some case and unavoidable. Education, whatever that is permanently, cannot to follow intensive technological development, which has higher level of automation as well as more complex organization systems.

Prescience of sociologists, philosophers and others experts, next era will be era of science and education, innovations in education in innovative society. We are, actually, daily precision witnesses of that prescience. Numerous of explorers in own tasks write about innovative society at whom it aspires, to take into dynamic technological process.

The development of technical process, directly or indirect is dependence of great number society science discipline, so with lot of rights can accentuate obvious science leading role depends on technique. Scientifics discoveries of radio-electronics, nuclear energy, photonics, holography, chemistry of polymer materials, lasers, genetic and other, and cause sprout completely new branches of production. Scientifics-technical progress involves not only industry, already and other spheres: agriculture, traffic, medicine, education, services. Example of connection scientific and technical activity is very considerable

Example joint scientific and technical activities are very important link the development of the industrial era.

In the time of industry civilization, comparative advantages was recognized in the next:

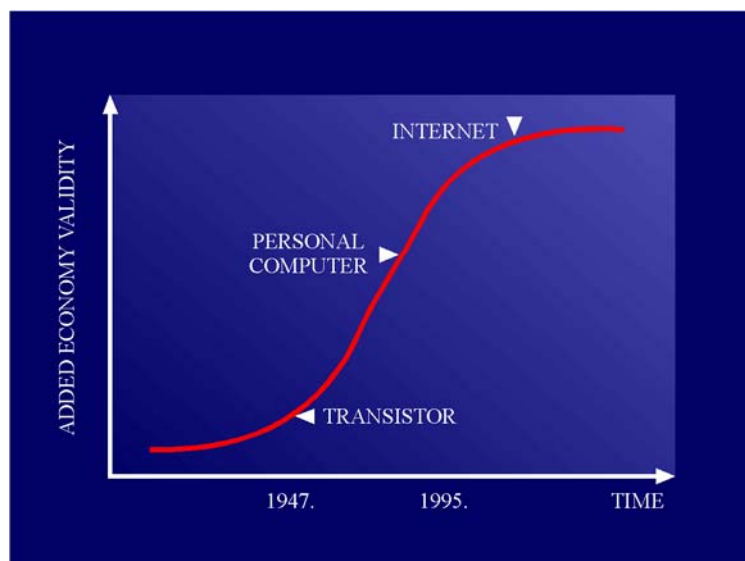
- Available natural resources - great ore and raw quantity,
- Available energy's potentials and origin,
- Very low-priced and numerous employs.

From named comparative advantages, country power directly depended, in the industrial age. It is very simple was to measure one country power because it was necessity only two perceptions: ton and megawatt. The third perception which refers on employ was like "positive constant" [9].

After information revolution, based on macro-electronics like on technology's infrastructure, it begins the new information age with accompanying terminology and new comparative advantage. Mainly new technologies connected with informatics and genetic and they dedicated to compilation, transfer and information arrangement. They are: byte, chip, software, hardware and gen.

Four, the most significant comparative advantages of information's era, are:

1. - knowledge,
2. - Mass and low-priced manual and mental employ,
3. - Creation of new innovative structures (techno parks, techno-cities, and incubators of small business), and
4. - Capitals essentiality for dynamic and technological modernization.



**Figure 2:** Strategic point of information era development [9]

While in the industrial civilization, primary significance is belong raw resources and energetic potentials, in the information civilization it belongs to the knowledge. That presents fundamental difference between age which slow going on and age which quickly bears.

Richness of one country doesn't valuation only with natural resources and energy quantity, already knowledge quantity with which that country dispose.

## 2. SCIENCE IN TECHNOLOGY DEVELOPMENT FUNCTION

Science is observing usually like human activity sphere, which occupied with elaboration and theory systematization objectives knowledge about reality. Along historical development, science evaluated in production power of society and its main socially institution.

In the same time, science is activity, which produces new knowledge, like final output of that activity originate entire science knowledge with whom mankind dispose in that moment and which is modeling science world image. Hence, science, by terminology, implementations for numeration individual branches and science knowledge ranges.

Direct goals of science are description, annotation, and portent reality phenomenon, which makes object of its training based on Law which it discovers, i.e. in the widest sense, which is theoretic description of reality.

Science presents specific form of activity, which significantly differences, as from activity in domain material production, so and spare forms of spiritual activity. In material production, knowledge uses inclusive in the form of assignment resources, in science their derivation is main goal, independent of the way on which is that goal



realized (in the form of theoretic description, scheme, and experimental data or chemistry formulation of any preparation). At science, result is obscure, it gives increasing in the form of new knowledge, and because of that science marked the force which change permanently other activities, and do not fit in cliché and do not sustain limits.

Exponential growth of knowledge gives possibility that and its useful increase with same dynamic, what increase number of modalities for society decision-making. Par example, in some cases it is necessary limited reliance of science results (genetic engineering, biological and climatologically weapons).

American University in Stanford passes research, on which total human knowledge till the 1900th year, duplicates till the 1950th year. Next duplications is coming already the 1960th year. Human knowledge adventure exponentially growth, like and, world industry production, useful of raw which are not retrievable, environment contamination, increasing of population on planet, number of denounce patents, promoted doctors of science, produced personal computers, robots, modems, mobile phones.

"Investment in the science always presents real investment and cannot treat like expense. That investment conduce increase of profitability and long-term development, while intellectual property by the time presents the biggest valuation mighty companies. At the end of the Second World War, in his report, published Vanever Bush, science adviser of President Franklin Roosevelt. His plan becomes, very soon, national plan and development plan of United States, enabling to U.S. to become lead technology and economy world power. To the present day, American industry is the most investment in researching and development (I&R). However in that compete and its domination. Par example, in period from the 1951st to 2005th year, American, from Award of Nobel, assigned for physics, chemistry, medicine and economy win even 195, or 56%, while in the year 2005, they won all, for physics, chemistry, medicine and economy, what is non-memorize in the world for last 23 years.

In the 2007th, in economy science, Nobel Award divides three American scientists: Leonid Hurwicz, Roger Myerson and Eric Maskin, for, like as named, establishment theory about "mechanism design theory".

Technology, like science has assignment to determine and chose that chemistry, physically-chemistry, physically, mechanic or the other validity in natural process frame, which can and practically use in the goal efficiency and economy production processes leading, with the smallest decrement of resources, and constant increase productivity and efficiency.

Leadership phone company, of the fiftieth years of previous century - AT&T, with own I&R department Bell Labs, had six Nobel Awards winner which exposures accomplished a real technological revolution. Par example, exposure of transistor, laser, audio-stereo technology, super-conductors, solar cells, IBM experts wins three Nobel Awards, Xerox patents which today are standards for parts of personal computers, practically, from computer's mouse, across graphic interfaces to protocol for computers' nets. Investments in fundamental researches for named companies were minimum price for their position as leaders and realized profit.

Companies own researchers more often direct on to improving existing technologies, somewhere on invention of news one, if exist necessity for new technological solutions, it is approach connections and acquisitions of other companies. Existing companies are and organizationally different connected and more and more use suppliers' nets, what partitioning researching department but and decrease expenses. It finds different model of I&R, which from researcher makes innovative "troupes for fast activity" for necessity companies' development, and faster and quality commercialization of goods and services. Fundamentally research, which was leading before, now is in private sector almost abandoned, because it observes substance which is intuition not accomplish in the practice, and with that, for today's occasions, spends lot of time for acceptance knowledge and too much money.

With these, linear model of innovation, which starts from basically and over applicative researches toward production to sells, puts in other plan. "Lesson, which we learned, is that the systems of work, in which "clever men" are separate from the others, in modern world, did not exist", said Mr. Eric Smith, executive director and president of internet log-up, "Google", who is its career begins just in "Bell Labs", and then continue in the "Xerox".

"Greatness of I&R capitals, except in IT industry, invests in accomplishment existing products, what is the best perceive on pharmacy industries example. In period from the 1998th to 2003 year, from 487 medicaments which appears on US market, even 68% makes old medicaments in the new forms. But, against years report British Ministry for market and industry, about research capitals spent in 1250 leading firms with year I&R budget greater than 33 million dollars, pharmacy industry have the biggest growth at last twenty years. Then, aircraft and military industries recorded the biggest jump according capitals invested in I&R, especially in Great Britain and United States" [9].

The numerous limits for bigger investment and researches, characterize Europe. That is, before of all, weakness of sectors which develops too fast and has high develop-research intensity, like is pharmacy and biotechnology, or IT industry. Participation of these sectors development and research range in Europe, decrease, because European firms are orient less research-intensive branches which accomplish greater sales. That is the best notices on Germany companies' example, which are treat as the first one leader in European innovations. Mainly part of these investments separate for automobile industry sector. Increasing knowledge level is from important

significance and economy growth: one added education year increase economy productivity for three to six percents in European countries develops what Europe must respect.

On the three continents, big company, IBM has eight research laboratories. Its the best laboratory is in Zurich, with over 300 researcher, 14 years succession indicts the biggest number of patents to American Patent Institute. Germany is on the top list of European countries when we talk about patents and innovations registration. "From over 190.000 registered patents on European Union area in the 2005th year, more than 24.000, or 18.5% comes from Germany. With that it makes an economy power, but and, the most new employs are make on the place where are product completely new inventions" [9].

Between 50 leading World Universities, even 37 are from US, but only 9 from Europe (even 5 are from Great Britain), between which, what is indicative, have not from Germany and Italy. Education sense is that too efficiency accomplish students to market changes, it can to draw a line with successfully American companies refers on all other countries. The second reason for European lags, which is notice at analyzes, is inflow politics when forms research teams and immobility of European research staff, primarily connected for own country. The great failure of European scientist system, which is especially register in the Germany and France, like and numerous countries with weakness scientist production, are legally binding limitation of sanctioning researchers who have constant employ places, and which research product are insufficient. What is the worst, the word is about professors on high positions, which stopped to makes new scientist accomplishments.

There are differences between Europe, America and Japan in refer nature of investment on research work. Business sector of European countries, mostly, less investment in researching, European private sector finances 55% of research, but in the US - 64%. Corporative sector in Japan based for research and development, with finances research projects from 75%. In China is, the biggest part of science researches initiate from public or state's sectors.

Fundamental researches in the firm frame are very difficulty to appliance, considering market dynamic and industry which based on constant concurrency and model - victory or defeat. Because of that, some private organizations tries that fundamental researches connect with business plans of referent firms, but the results were not satisfy.

Paul Alan, one from establisher of "Microsoft", announce pompous, at the ninth years of last century, corporation "Interval Researches", but it is very soon, after 100 million dollars invested on fundamental research, close down, because bad results. It is interesting that "Microsoft" and today presents rarely case of private firms whose finances doctors' study of talents from all over the world and that in area which had not some especially attachment with business of this great company from Richmond. This is a word about scientist who are occupied astrophysics, cosmology, and in more case, stipends who works on projects in fundamental sciences area. Paul Alan invests 1.65 billion dollars in corporation RCN in the year 1999. "Alan's firm "Vulcan Ventures" reports that will add to that own global cable imperia, and telecommunication corporation RCN, in which invested 1.65 billion dollars in the year 1995" [12]. These Alan's investment in cables, media and high technological companies with which it will to accomplish strategic plan named "Wired World". On Alan's list there are corporation "Charter Communications", the fourth by the size cable company in US. Corporation RCN has occurrence in Princeton, in New Jersey and won money it will invest in building optical net for proffer phones, cables and Internet services.

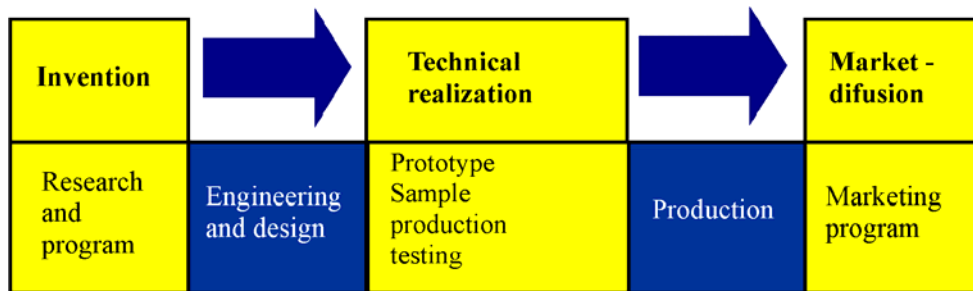
Chinese economy, market as the most perspective in the world, but its companies with own technologies is low number, though they are every day mush more and more, like and multinational corporation which their research departments and development, migrate in China. Par example, "Microsoft" and "Motorola" are some of firms which open I&R in China departments. Chinese development, would be, probably, favor on on American technological development, with one essential difference: the time which is necessary in America will be divide for half, in case of China.

### **3. MODERN INNOVATION OF TECHNOLOGY DEVELOPMENT**

Whole economy development depends directly from events of primary quality changes which are consequence of new innovation technologies, that's to say, innovations, accrued in various historical periods. Mainly contribution is in accent technological concurrency, or concurrency based on innovations, like moving force of economy development. For Schumpeter, innovations are new products, new method of production, and new origin of appliances, new markets, and new ways to business organizing. Innovation defines like "new combination" of existing resources.

Period, which accompanied after The Second World War, presents revolutionary period in aspect production things and tools for work, the biggest part technology development, presents the result organized science-research and development work specialized experts and organizations. That intensively industry development in this period, accrued before all, owing to technologies development by the biggest part like result innovation development, which are base on good organization of development research. Mostly of developed countries,

accepting priority significance of industry innovations in economy development process, give especially accrued on creation and to administer simulative politics, in area of development according to evident socially specifics. Very soon, after that period, accurse period of energetic crises and disarrangement in economy flows of the eighth years, which brings to saturation and stagnation of industry production in mostly of development countries, what reflects and on countries in development. It arrive period of great conflict between individually technologies natural resources and expressed disorganize of eco-system. All of that indicate on essential turning of innovative technology in direction creation of industrial innovations and creation new politics industry innovations which would accomplish of overcoming named negatively tends disorganize of eco-system.



**Figure 3:** Industry innovation process [6]

On the enterprise level, technology development requests continuous and carefully relation according to all accessible resources and production factors organization. To accomplish growth and development of enterprise based on following and new technologies changes, it is necessary not only organization in existing enterprises sectors, already suitable socially ambient and following infrastructure. The named elements leave are negatively reflecting on economy effects and technology diffusion, that's to say on it's horizontally and vertically growth. Most of authors' industry innovations define like transformation of any idea in the new or accomplish product, i.e. technology process. Same innovation process involves research, technical and commercial phase, including management organization and finance of that process. Significance industry innovations consist of that they make faster technology changes which make exchanges in production structure, efficiency increasing and concurrency and international market.

#### 4. SIGNIFICANCE AND FUNCTION INNOVATION LIKE ACCELERATOR OF TECHNOLOGY DEVELOPMENT

In the book *Economy development theory* which Schumpeter edited long time ago the 1912th year, innovation concept is result of entrepreneur and entrepreneur can be only one who the innovation implemented. All of hitherto researches affirm Schumpeter's relation according to innovations and entrepreneur gives to entrepreneur the most dynamic sectors of modern economy epithet, approve evidence advantage of appliance speed refer on the other participants on the market.

Schumpeter exposes that rate and direction of technology changes it is very hard to anticipate, and "technology possibilities are undiscovered sea" and it is completely wrong "...predicate that enterprise and technology two different factors of output growth. Enterprise and technology progress are one the same thing, or still much better, technology was propeller force of enterprise" [7].

Schumpeter's elements in the innovation define:

1. Injection of new goods or new quality;
2. Injection of new production method;
3. New market opening;
4. Overmaster of new appliance raw or semi finished products origin;
5. Injection of new organization form in industry.

"Enterprises inject *new goods*; enterprises inject technical news in the production of "*old*" goods, enterprises inject new commercial combination like as opening of new market for products or new origin of material supply, enterprise stays during industry reorganization. Par example by monopoly accomplish" [7].

There are three basically phase of technology development, based on innovation technology and products appearance:

- Invention,
- Innovation, and

- Innovation diffusion.

Invention, the Latin word, means invention ability, creator phantasm, imagination, contrivance ability, and in nearest senses, means idea or contrivance. Also, it means sense and individual ability for invention, and it can signify and ability of enterprise to create new technology process and product, like all other human activities, observed widely. Invention presents only potential possibilities if innovations, considering that great number of innovations it never accomplished, and only appliance requests significant bankroll on longer term. In English speak able area, under invention alludes and discovery, artifice.

If term innovation on Latin means changes, that invention presents emergent presupposition arise of innovation.

Between significant areas of innovation, they induce:

- New products,
- New services,
- New process,
- New method of work,
- New delivery way of products or services of customers,
- New information way of customers about products/services,
- New ways of organization or management in the organizations,
- New relations between, multi innovations [11].

"Invention is activity of creation or production by imagination appliance, and innovation is commercial exploitation of invention" [3].

Interpret terms of invention and innovation, have practically significant for enterprises, especially in the part which refers on creation and choice of innovation strategy. Some of individually explorers consider that enterprise can accomplish a high level of innovatively and that is not necessity postulate overmaster with all phases inventive method, in main area of research and development. By other words, it must not to be occupying with fundamental scientific research, enterprise can make decision and for invention and strategically developed competency in direction innovation overmaster, developing abilities of innovation accomplishment.

If exists a question what can be innovation, than it can to say that it is new product or new way or process product production, new services, the way of delivery some services organization, it can be and structure organization changes or the way of employing so we can listed very long, and that toward we are not induce what it animadvert to us.

By Porter, innovation process cannot be disengaging from strategic and concrete action of firm. Innovation is and "accomplishment of the ideas which are new for organization which accept them".

"The innovations are new things accomplishing on production business, production and service spending distribution. They can appear in the various forms, like are new management procedures, new finance services, new distribution of bankrolls, new products, etc. Technology innovations are new products (product innovations), new machines or equipment (process innovations), improve existing products and process which are apply based of some technology change which make innovator and when is commercially utilize. Inventions are technology accomplishments which are not commercially exploit yet" [1].

Technology innovations are new products (product innovations) and new machines or equipment (process innovations), improve existing products and process which are apply based of some technology change which make innovator and when is commercially utilize.

Innovation process presents assemblage of connected activities which makes or one innovation or more innovations which are very often intermediate connection. Innovation project i planned and organized assemblage, with before establish goals which must to result of making concrete innovation. Innovation projects include and determine relevant institution and sometima and state, if they are from national interest.

Economy analiticants analyzes the innovation ways and effects whose are connect to appliance in making products or service. By innovation analyze, researcher, before all, starts from idea. Idea is that what procreate and make innovation. It is normally that great number of ideas are not result with inovation. It incites the data, which mostly shows, that more than 80% of ideas, be throw out. From economy aspect, for innovation, main measurement, is profiting. A word profiting, which becomes from term "profit", signify to us, that innovation, that would be really innovation, but not only good idea, must bring profit, must be profitable.

Profitability in economy is not watching that confined that profit, excludely, define like a profit in money. Profitable can be organization or state establishment which with accomplishment of own service brings various convenience which directly decrease citizen expense, and on that way presents they own profitability, which in that case is not a money, already its validity.

The innovations which are not find their appliance in activities for which are conect by the context, not be throw out - already "store", that it can be activate in necessity moment, when condition be accomplish for its profitable appliances.

When is concrete word about succesfull evaluation of products and services, than will be take various criteria:

- Profit in investment refer,
- Nuber of new products launchd,

- Maintenance concurrency ability on present market,
- Successful breach on the new markets.

Each criteria past across improve phases, owing to constantli innovative results, with which distinguish modern economy and modern society.

For all technology innovations, the most meritorious are learned researches, and they has learned substrat or proffed performances. Inovation proceses happened with determine tempus and order at phases and past across all area of society activities.

**Table 1: Ideas origin for new products and technologies [9]**

I D E A S   O R I G I N	
Internal (enterprise inside)	Eksterni (izvan preduzeća)
Sector IR Marketing Sector (market research, product pro) Production sector Patent service Admonisher in enterprise	University laboratories, Research Institute Inventors Patent institute Suppliers Customers / Byers Wholesale trade / Retail trade. Concurrency enterprises News on the other markets. Product of other branches Producers of complementary products Marketing research organizations, propaganda agencies Economy chambers, ministries and other state's institutions Internet Consulting firms Link enterprises

At some authors, "innovation in the first, signify the first practically appliance of some innovation in production" and such assumption we can accept, if we take to allowing for a wideness production term. When originally *Homo sapiens* customize the stone, with which he can easier to work, or when with abrasion process came to the first fire, he doesn't be sensible that by "force of events", become innovator. When humankind developed, more and more innovations show technology connection with process term.

Each separation of innovation from process, resets innovation, and with that and based origin to arise innovation, and that is idea ("new idea"). When we analyze technology development, it is evident that it doe to technology innovations, whose means appliance new technology process, new resources for work and subjects of work, new products and various accomplishment which means increasing economy efficiency of technology and productivity. That is accomplishes by improve of existing and new forms of organizations or management produce-technology systems.

Researcher, when "makes difference" between innovation of product and innovation of process, they do that from methodology reasons, that could to be accomplish their connection's level. Innovation like accelerator of technology development is any amelioration process methods, or technology change, which make profit, capability or increase valuation.

Technology innovations are materialized or non-materialized. The first belongs to new technologies and with that and new technology production equipment-lines, higher level of automatically , and the second belongs to accomplishment organization and to its nearness aspects of existing productions which don't request new equipment, where new organization-efficient approach leads to productivity increasing.

Data analyze about technology innovations diffusion based on time which passes from discovery to commercialization of innovation and its appliance in practice shows, where is that period, during last decencies more decrease 1914th year was in average 50 years, 1945-1960th - 9 years, 1990th - 1 to 3 years, and till 2000th year - less than one year [5].

Innovative ability of enterprise refers on bigger enterprises in which are completed innovation chains, starting from defined market, requests, marginally profit. Concurrency based on products quality and price, and decrease of expenses can ensure with data integration, processes and systems of management.

For difference from bigger enterprises, small enterprises use already development products, further accomplishment it, to market, they have not completed chain of innovation, but have attribute of innovatively (innovative enterprises).

In product life cycles, with constantly improvement of same product and its make technology, it accomplishes increase of profit to 50%. Small firms have only possibility innovatively improvement, for difference from great enterprises. Incremental innovations use at specialized system parts, with great automatically level.

When is assortment innovation in the questions, that means, that whole orientation on new products, even, and it freezes or "smother" of existing products or the processes. As the expenses of supply and adaptation of equipment, decrease, it is necessary that equipment has higher level of flexibility.

Researchers' studies show that innovation has a goal to launch new product, requests engagement the spectra of participants, starting from university, market, finance institutions, entrepreneurs, and to use product and serviceable capacities. When innovation period appears the first time on the market, the criteria of performances decides buyers. From uncertain performance reasons, innovations are preponderant in the frame of small, flexibility enterprises and good external communications.

Phillip Kotler interests for rate of economy increase which are nearly connect with number of new incoming technologists. Greatly of big companies do not neglect research and innovate business, already have strategic directing toward creation technology innovations as they would products of their companies make better, or different. Besides, it always increases finances investments for research sectors work. For example, expenses of research and development in United States of America in 1976th year was 32 billion dollars, or over 2% from society gross products [8].

Big part of resources ensures Federal Government because research supporting in defense-oriented industries, like and space research programs, whereas, it noticed great increase of research and development expenses at private companies. All of those investments give positive effects in research-development efforts, and life cycles of products become shorter.

It needs to notice that subsists big difference in opinion about right-minded great investments in new technologies and because of that induce number of negative effects of new technologies, especially register in bad events genetic modified food, so that technology treat like mankind enemy. By the other side, whereas, greatness of Americans is fascinate with technology and each new product. Their trustiness in technology is limitless. Stories about increase limit it rejects with arguments that technology will find decision for all our problems [4].

New technologies, not only to market overrun for old products, already bring and to procreate of new market by way of new product which created exclusive for the market. "Transistor, which change vacuum tube in many appliances, is one of example. It does nothing what vacuum tube not to do yet, but because it's less size and weight, longer life and less energy consumption, it brings to changes in many of electronic products. Existing products, like a mobile radio receiver, it got strongly impulse, and becomes possibility and completely new products, as radio-cassette decks" [2].

## 5. CONCLUSION

The new innovative technologies, for the old products markets overrun, already make to new concurrency markets by new products.

The strongest force which models human's destiny is its technology. Technology modeling whole humans' society makes a lot of sensationally innovations, from which one, some of them are abuse and use at force demonstration of developed countries, makes from decennia to decennia just bigger gap between riches and poor.

New revolutionary technologies make new, epochal industry which until that technology sends in the forgotten. For determined analytics beginning of new technologies is and making and destroying force, that would be, for Schumpeter, "creative destroy". If no one Records Company makes radio receivers, new technology in the radio receivers industry, cannot be guilty for that, already only guilty are Records Company which with great number of copies and album sells be asleep vested capitals. Such examples have a lot, but they may not that on any way to detract new technologies, already they must recognize them on time and change them with old one.

Modern technology discoveries, develops with such dynamic, that marketing-management of enterprises in great and constant trials and challenges.

Technologies and other innovatively presents main actuators of society development, making new base of civilization survive on the planet.

Modern economy, with technology and electronic expansion - especially in ranges of computers and communications, changes industrial process which are not anymore based determinant structure and valuation. Scientist and technical knowledge improves production process, which overrun on all aspects of society life.

Approving unproved and big miscellaneous of changes in technology learning requests parameters taking from physics, technical and economy nature.  
"... thrust in technology is unlimited." (Kotler, 1976th)

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## **THE IMPLEMENTATION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS**

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**Summary:** *The paper presents the historical development of International Financial Reporting Standards (IFRS) and principal institutions linked to their implementation process. The paper seeks to examine the harmonization process within the European Union and critically examines the convergence process between IFRS and American Generally Accepted Accounting Principles. The aim of the accounting harmonization process is to assure more comparable financial statements that will lead to minor reporting costs. To that end we will be witnessing the issuance of IFRS for entities that were not accountable. The paper critically analysis the benefits and reporting costs related to their adoption. If their adoption will be obligatory for Member States we will be witnessing the new era of corporate reporting.*

**Keywords:** *IFRS, GAAP, financial reporting, accounting harmonization*

### **1. INTRODUCTION**

In 2002 the regulation of the European Parliament and of the Council introduced as obligatory the use of international accounting standards for publicly traded companies. The application of International Financial Reporting Standards (IFRS) was obligatory for financial years starting after 1 January 2005. Since 2005 companies which securities are admitted to trading on a regulated market of any Member State have to prepare their consolidated accounts in accordance with IFRS [13]. The regulative has introduced radical changes in accounting for numerous companies, which used domestic standards as IFRS introduced a more dynamic accounting approach. Since 2005 IFRS has contributed to better financial information, which will ensure more efficient functioning of the internal capital market.

In the first part the article presents a description of the historical development of IFRS. There are presented the principal institutions linked to their adoption and the harmonization process of standards within the European Union. As follows the article seeks to examine the main characteristics of IFRS which will improve corporate reporting. In the second part the article focuses on the current harmonization process. The article critically examines the harmonization process between European IFRS and American Generally Accepted Accounting Principles (GAAP). The current harmonization process is announcing the convergence of world leading standards, which will ensure for the first time in the history comparable accounts of entities being part of world leading economies. In addition the article presents the evolution of IFRS for small and medium-sized companies. Despite the benefits related to more comparable standards for small and medium sized entities, their adoption is leading to higher reporting costs. The current harmonization process is announcing a new era of harmonized corporate reporting.

### **2. HISTORICAL DEVELOPMENT OF IFRS**

The aim of the international standards was undoubtedly the minimization of reporting costs, which were rising due to the process of internationalization. According to the rising number of associate companies which were operating abroad, a growing need for cross-border standards became apparent. A uniform accounting approach facilitates the cross-border comparison, which leads to a better allocation of capital in European active markets.



The very beginning of the harmonization process of accounting standards in Europe can be found in the year 1957 by signing the Treaty establishing the European Economic Community. The following three decades were denoted by following principal events [4]:

- in 1967 the Accountants International Study Group (AISG) was created, which was the precursor of International Accounting Standards Committee (IASC),
- in 1973 IASC was established and two years later it has published the first IAS 1-Disclosure of Accounting Policies and IAS 2-Valuation and Presentation of Inventories in the Context of the Historical Cost System,
- in 1977 followed the formation of International Federation of Accountants (IFAC),
- a major step towards the harmonization process was made in 1985, when IASC participated in a forum of Organization for Economic Co-operation and Development (OECD) on global accounting harmonization,
- two years later, in 1987 IASC began its Comparability and Improvements project with the aim to reduce or eliminate alternatives in international accounting standards (the project was completed in 1993). The project was supported by the International Organization of Securities Commissions (IOSCO).

In subsequent years many important bodies took part of the harmonization project, as Financial Accounting Standard Board (FASB) and European Accounting Federation (FEE). A major step towards multinational standards was made in 1995 with the agreement between IASC and IOSCO with the aim to develop the core standards that could be used for cross-border offerings. Their agreement was supported also by the European Commission. For the first time an important step towards international standards was made.

In 1997 followed the formation of the Standing Interpretation Committee (SIC). In the same year the very beginning of a more dynamic accounting approach can be found. IASC published a discussion paper regarding the use of fair value for all Financial Assets and Financial Liabilities. In 1999 the European Commission analyzed the International Accounting Standards (IAS) and did not find any significant conflicts between IAS and the European Directives. Consequently the Commission adopted a financial services action plan that included the use of IAS as 'European GAAP' [4]. At the beginning of the new century the following events were notable for the development of IFRS:

- in 2000 IOSCO recommended for its members the use of IAS for cross-border offerings and listings,
- in 2000 the European Commission for the first time announced a plan to require IAS for listed companies in EU no later than 2005,
- in April 2001 International Accounting Standard Board (IASB) took over the work of IASC. The activity of long standing (1973-2000) IASC assumed the IASB. Since 2001 IASB is responsible for setting IAS,
- in 2001 was created the European Financial Reporting Advisory Group (EFRAG),
- in 2002 Standing Interpretations Committee (SIC) was renamed to International Financial Reporting Interpretations Committee (IFRIC),
- in 2002 finally the regulation of the European Parliament and of the Council introduced as obligatory the use of international accounting standards for listed companies which have to prepare their consolidated accounts.

The first exposure draft of the new IFRS was issued in 2001 as Exposure Draft 1 First-Time Application of International Financial Reporting Standards. In the next year followed the adoption of the first IFRS; IFRS 1-First Time Adoption of IFRS. Since 2002 eight IFRS were issued. The last one was issued in 2006. Since 2006 no standards were issued due to the announcement of IASB which proclaimed a moratorium during 2006 and 2009, according to which no major standards will be effective before 2009. IFRS are currently including:

- International Accounting Standards (IAS),
- International Financial Reporting Standards (IFRS) and
- Interpretations of International Financial Reporting Interpretations Committee (IFRIC).

The term International Financial Reporting Standards is currently applied for International Accounting Standards issued till April 2001 and Interpretations of Standing Interpretations Committee (SIC) issued till March 2002. Additionally IFRS include IFRS issued since April 2001 and Interpretations of IFRIC issued since March 2002. IFRS have become more important after 2002, after the acceptance of the regulative which requested the use of IFRS for consolidated accounts of companies which securities are admitted to trade on a regulated market of any Member State.

In continuation the paper presents the main institution connected with the development of IFRS and the harmonization of standards in European Union.

## 2.1. Harmonization and institutions

There have been various international institutions that had an impact on the harmonization process in European Union. The most significant impact has been made by the IASB (successor to IASC). IASC was established in 1973 by representatives of various accountancy bodies, with the aim of developing reliable standards for international use. The Board of the IASC promulgated a substantial body of Standards, Interpretations and Conceptual Framework [9].

The objectives of IASC were according to the IASC Foundation Constitution [8]:

- development of high quality, understandable and global accounting standards,
- promotion of application of those standards,
- taking into consideration the special needs of small and medium-sized entities and emerging economies and to bring about convergence of national accounting standards and IAS and IFRS to high quality solutions.

In its later years it worked with the International Organization of Securities Commissions (IOSCO) with the objective to form accounting standards that could be used on the world's stock exchanges. In April 2001 IASB took over from IASC the responsibility for setting IAS and their principal objectives to achieve and became an independent non-governmental organization. IASB was established as part of the IASC Foundation.

International Organization of Securities Commissions (IOSCO) was formed in 1983 as successor to originally formed Inter-American Conference of Securities Commission. In 1983 its name changed and it expanded over the borders of America. IOSCO looks to the IASB to develop IFRS that IOSCO members can use in their jurisdictions [12]. IOSCO supported IASC in its initial Comparability and Improvements project. In 1995 a significant agreement between bodies was made regarding the principal accounting standards for entities involved in cross-border offerings.

Another major part of the IASB's organization is its International Financial Reporting Interpretation Committee (IFRIC), which is the IASB's interpretative body. IASB is the successor of Standing Interpretations Committee (SIC), which was replaced in March 2002. The main duty of IFRIC is to interpret the application of International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) and provide timely guidance on financial reporting issues not specifically addressed in IAS and IFRS, in the context of the IASB Framework, and undertake other tasks at the request of the IASB [11]. The interpretations of standards are developed by IFRIC, but they have to be approved by IASB. At first they are exposed to public comment (Draft Interpretations) and subsequently sent for the review process and approval to IASB (as Final Interpretations).

The International Federation of Accountants (IFAC) was founded in 1977 with the aim to [10]:

- develop high quality international standards and support their adoption and use,
- facilitate collaboration and cooperation among its member body,
- collaborate with other international institutions and
- serving as the international spokesperson for the accountancy profession.

FEE (Federation des Experts Comptables Europeens) was formed in 1987. FEE is a non-profit association with the objective to promote and advance the interest of the European accountancy profession. FEE tends towards the harmonization and liberalization of the practice and regulation of the accountancy and financial reporting in Europe and towards promoting co-operation among the professional accountancy bodies in Europe [2].

European Financial Reporting Advisory Group (EFRAG) was established in 2001 to assist European Commission in the endorsement of IFRS. EFRAG is a private sector body, with the role of the technical committee for the European Commission. EFRAG has to provide advices to the Commission on all issues relating the applications of IFRS. EFRAG role is also to [1]:

- comment on proposed IFRS and IFRIC interpretations,
- IASB discussion papers,
- work closely with European National Standard Setters.

## **2.2. Harmonization of standards and the European Union**

The harmonization process among Europe has been founded in 1957 with the Treaty establishing the European Economic Community (Treaty of Rome). In 1978 a major step towards harmonized standards was made with the Fourth Council Directive<sup>1</sup> of European Economic Community on annual accounts and the Seventh Council Directive in 1983 on consolidated accounts.

The Fourth Directive has coordinated the national provisions concerning the presentation and content of annual reports, the required disclosures and valuation techniques in use. The Seventh Directive subsequently coordinated the national legislation concerning the consolidated annual accounts. Despite the fact that annual accounts of individual countries were made in accordance with European Directives, the harmonization between countries was still not achieved. The harmonization process continued with the subsequent directives. With the growing significance of capital markets international standards were urgent.

In 2000 the European Commission published the announcement in which was proposed that all publicly traded companies members of the European Union will have to prepare their financial statements in accordance with one single set of accounting standards, not later than 2005.

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<sup>1</sup> A directive is a legislative act of the European Union which requires member states to achieve a particular result without dictating the means of achieving that result. It has to be distinguished from European Union regulations. Regulations are self-executing and do not require any implementing measures.

In 2002 the European Parliament and the Council in order to contribute to a better functioning of the internal market issued the regulation 1606/2002, which required the use of IFRS. The aim of the regulation was to ensure international standards which will be applied by the Community companies, which participate on European financial markets. Member States may permit or require the use of IFRS also for other companies. The requirement has to be prescribed in the national legislation. The rest of the companies still continue to apply national accounting standards.

IFRS lead to an increasing convergence with the ultimate objective to achieve a single set of global accounting standards. The first step towards global standards was made within Europe. In the second step the convergence between European standards and American Principles is expected.

IFRS issued by IASB are not adopted immediately. The European Commission determines their use upon European Union. They can be applied in the Community if they meet the requirements of the Council Directives. The Directive claims that the standards have to [13]:

- result in the true and fair view,
- they have to conduct to the European public good,
- they have to provide information of good quality that are useful to the users of financial statements and
- they have to meet the criteria of understandability, relevance, reliability and comparability.

In 2002 the Commission set up the Accounting Regulatory Committee (ARC) with the function to provide opinions on proposals to adopt IFRS. The new standards introduced new characteristics of corporate reporting. According to an unstable environment, a more dynamic accounting approach was needed.

## **2.3 Characteristics of corporate reporting according to IFRS**

IFRS have introduced radical changes in accounting for corporate reporting. The main difference was the introduction of a more dynamic accounting approach with the implication of the fair value approach. The general principles related to the previous valuation approach were included in the Fourth Directive. As the general valuation basis was used the historical cost, although the individual national regulatory bodies could allow also the use of replacement cost or fair value. That was according to Walton et al. (2003, 33) one of the major reasons for the accounting disharmony in Europe.

According to IFRS the main accounting principles are the following [7]:

- the accruals basis of accounting; the effects of transactions and other events are recognized when they occur, rather than when cash or its equivalent is received or paid, and they are reported in the financial statements of the periods to which they relate,
- going concern; the financial statements presume that an enterprise will continue in operation indefinitely or, if that presumption is not valid, disclosure and a different basis of reporting are required.

According to the accruals basis of accounting users of financial statements are informed not only about the past events, but also of events that will occur. The accrual basis of accounting is the principle in use for all financial statements except the statement of cash flows. Preparers of financial statements have to follow the going concern principle as the valuation process for assets and liabilities is different if the entity will not continue its activity.

The qualitative characteristics according to IFRS have to be the following:

- understandability,
- relevance,
- reliability and
- comparability.

The first qualitative characteristic demands that information presented in financial statements have to be understandable. Additionally the information has to be relevant. The information is relevant when it can still influent economic decisions. The reliability of information is assured if it is free from material error and bias and represents events and transactions faithfully. Comparability is attained when the information in financial statements can be comparable over time and between different entities.

As the financial statements have to present true and fair view, IFRS introduced the concept of fair value measurement. Historical value is not in use any more, but prepares of financial statements have to apply the fair value. Fair value is according to IFRS defined as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

## **3. CURRENT PROJECTS OF HARMONIZATION**

According to the development of capital markets an indispensable need for more comparable accounting standards was needed. In last decades the world leading standards had too many disharmonies, consequently investors had difficulties to compare financial accounts between companies that used different accounting standards.

European Companies which securities were admitted in US active market had to prepare their accounts also according to GAAP. Two types of annual accounts increased the reporting costs and there was only the question of time when the harmonization process will start. As expected, the leading standard setters the International Accounting Standards Board (IASB) and American Financial Accounting Standards Board (FASB) in 2002 issued a memorandum of understanding making a major step toward formalizing their commitment to the convergence.

### **3.1. Harmonization of IFRS and US GAAP**

The aim of the commitment was to adopt high-quality solutions to existing and future accounting standards. The convergence project was divided in two phases. The first one was the short-term convergence project with the object to propose changes to IFRS and Generally Accepted Accounting Principles (GAAP) that will reflect in common and harmonized solutions and eliminating or reducing remaining differences. Individual convergence projects related the following fields [5]:

- IAS 12 – Income Taxes,
- IAS 14 – Segment Reporting,
- IAS 19 – Employee Benefits,
- IAS 20 – Government Grants and Disclosure of Government Assistance,
- IAS 23 – Borrowing Costs,
- IAS 33 – Earnings per Share,
- IAS 37 – Provisions, Contingent Liabilities and Contingent Assets
- IAS 39 – Financial Instruments: Recognition and Measurement

In February 2006 two Boards updated their convergence agreement. They published a Memorandum of Understanding that reaffirms their shared objective of developing high quality, common accounting standards for use in the world's capital markets. The Memorandum is a further elaboration of the objectives and principles first described in the Memorandum published in 2002. In the new Memorandum the goal by 2008 was to identify potential differences between standards and to find common solution.

In the near future we will be witnessing the elimination of major differences between IFRS and GAAP. According to the announcement of IASB no major standards will be effective before 2009. Major changes in both IFRS and GAAP can be expected after the conclusion of the short-term convergence project by IASB and FASB when major changes to present standards will be identified.

Soon after the very beginning of the harmonization process between IASB and FASB, IASB started the project of IFRS for small and medium-sized entities.

### **3.2. IFRS for small and medium sized entities (SME)**

Soon after the formation of IASB the project of standards for SME was placed on their future agenda. In 2004 the first discussion paper regarding the Accounting Standards for Small and Medium-sized Entities was published. The discussion paper was titled: Preliminary Views on Accounting Standards for Small and Medium-sized Entities. According to numerous responses IASB proposed in 2007 a separate IFRS for entities that were not accountable (previously called Small and Medium-sized Entities). In 2007 IASB issued an exposure draft of International Financial Reporting Standard for Small and Medium-sized Entities.

The IFRS for Small and Medium-Sized entities is intended to be used for small and medium-sized entities that [6]:

- do not have public accountability and
- publish general purpose financial statements for external users.

The IFRS for SME includes several differences in comparison with existing IFRS. The users of financial statements of SME may have less interest in some information in general purpose financial statement prepared in accordance with full IFRS in comparison with users of financial statements of entities whose securities are listed for trading [3]. Users of accounts of SME are more interested in short-term cash flows, liquidity, interest coverage, balance sheet strength and not in long-term cash flow, earnings and value.

The definition Small and Medium Sized does not include quantified size criteria for defining what is a small or medium entity, as the size is very relative among countries [3]. The size and criteria for entities which will be required to use this standard will depend of the jurisdiction that may prescribe each country.

The modification to full IFRS was made on four major types based on need of user of SME accounts [6]:

- topics omitted,
- only the simpler option included,
- recognition and measurement simplifications,
- disclosure reductions.

The main excluded topics in IFRS for SME are segment reporting, interim reporting, share-based payments, general price-level adjusted reporting and determining the recoverable amount of goodwill. The simpler options are related to cost depreciation model for investment property, cost-amortization, expense borrowing costs and indirect method for reporting operating cash flows. The recognition and measurement simplifications are related to financial instruments, goodwill impairment, research and development cost, share-based payments and finance leases. For the successive modifications there might be some simplification regarding the statement of cash flow, recognition of deferred taxes and consolidation.

Almost parallel with the issuance of the Exposure draft the European Parliament adopted a resolution on a simplified business environment for companies in the areas of company law, accounting and auditing in response to the European Commission's communication on the subject. After the first analysis the European Commission thinks that the IFRS for SME will not simplify the activity of reporting for small and medium sized entities. The first provision for simplifying their business environment would be the exclusion of micro companies. For this kind of companies (the smallest companies) the preparation of annual accounts for general purposes is the biggest burden.

Currently the Board is re-deliberating the proposals of its exposure draft that was issued in February 2007. The Working group plans to submit a ballot draft of a final IFRS for Private entities to the Board towards the end of the fourth quarter of 2008. The standard is expected to be published in the first quarter of 2009.

There is still not known if the IFRS for SME will be required within the EU with the Commission's regulation or with the directive which will permit to individual member to determine if their use is obligatory or not. At the moment we can look forward to obtain three types of IFRS. The first are the existent IFRS for companies which securities are admitted to trade on an active market of EU and they have to present annual accounts to the public. The second type are almost certainly going to be IFRS for SME for companies that do not have public accountability and finally according to the resolution of European Commission there is a possibility that in a near future we will be witnessing IFRS for micro companies, which will be simpler than IFRS for SME. IFRS for SME are going to introduce radical changes in accounting for SME, as they used national standards which were simpler and did not require many requirements which will be introduced with the IFRS for SME. Although the aim of the new standards is to assure comparable financial statements for SME, they are going to intensify difficulties in financial reporting for SME. Future researches will show if the uniform standards for small and medium sized companies were needed and if the benefits of these standards are higher than costs incurred.

#### 4. CONCLUSION

According to the process of globalization and the growing number of foreign subsidiaries, many different standards for corporate reporting were in use. Different standards lead to different results, as their recognition criteria and subsequent measurements were not always uniform. As the capital markets became more important, a growing need of more harmonized standards became apparent. In 2002, with the Directive of the European Commission IFRS became the leading standards in the European Union. Since 2005 their use is obligatory for quoted companies which have to prepare consolidated accounts. Since 2002 a major step towards the harmonization of accounting standards was made. In the same year IASB and FASB signed their agreement for the harmonization of IFRS and GAAP. For the first time in the history we are facing the elimination of the main differences between the world leading standards.

Few years later IASB put on its agenda the evolution of standards for SME. The project is currently about the end, but there is still not known if the IFRS for SME will be required within the EU with the Commission's regulation or with the directive which will permit to individual member to determine if their use is obligatory or not. The European Commission believes that the standards are not facilitating the corporate reporting of SME and that are redundant for the smallest entities. Future researches will demonstrate if the benefits of these standards are going to be higher than the costs incurred. The harmonization process provides a uniform accounting approach for many companies, but not necessarily the benefits will be higher than cost incurred. The harmonization of standards for quoted companies was undoubtedly needed, but it is not necessarily needed for all sizes of entities.

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## MISUSES IN USAGE OF NEW TECHNOLOGIES

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**Summary:** Internet is one of the most significant appearances in world at the end of 20<sup>th</sup> century. In the first decade of 21<sup>st</sup> century its significance is undoubtedly spread into all pores of life. Certainly this significant appearance could not avoid misuse and development of criminal activities in this area.

As internet developed, so appeared new forms of criminal activity in its frame. Piracy, computer frauds, computer sabotages and hacking are just some of the appearance forms of internet misuse (cyber criminal). Next is response from law holders in confronting with this new kind of criminal.

**Keywords:** cyber, hacking, criminal.

### 1. INTRODUCTION

Internet today is undoubtedly the largest set of facts in the world, a huge database in which the wide variety of facilities. It is estimated that currently has about two hundred million computers that have Internet access. The amount of information that these computers have is huge. If we wanted to visually express the size of the content on the Internet, it would not be able to fit in the territory, which occupies the whole Europe.

On the Internet you can find variety of data: there are a variety of business information, music, games, movies, pages of UFO-in, different ads, presentation of a huge number of subjects, etc.

Internet very successfully used for business purposes. In fact, feel free to be said to be a modern business can not be imagined without a mobile phone and TV. Almost all companies in the world present its products and services on the Internet. Thanks to the company from one country is very easy and just see the complete offer of services and products which are located on the other end of the world. That is to establish contact with remote business partners in the tens of thousands of kilometers significantly easier, especially when you bear in mind the speed of electronic mail. Namely, E-Mail sent from Belgrade to New York came only a few minutes, as opposed to conventional mail that travels days.

Except for business purposes, the Internet can be used to entertain. There are places on the Internet that provide various forms of entertainment, from the chat - talk which allows communication between people find to various points of globe, and to CHILDREN that allow people to play games regardless of the distance between them. Also, where many Internet users downloaded movies, games, pictures and other entertainment content that is recorded in their computers. On the Internet there are many so-called discussion forums (eng. discussion forums), where users can discuss that on various topics-from various games and programs, and to the political situation. More and more people use the Internet as a means of information. Namely, all news organizations, television stations and other media have a site on the Internet, where the latest news from around the world. There are also so-called electronic books (eng. E-books - electronic books), which on the Internet.

### 2. TERM AND ESSENCE OF INTERNET FUNCTIONING

The roots of today's Internet reach from 1957 year. Then SSSR (whose successor today the Russian Federation launched the famous Sputnik, the first artificial satellite. In response to the move the United States are established agency ARPA, which was in the U.S. Ministry of Defense (United States Department of Defense

Advanced Research Projects Agency) scientist Paul Baran has the 1962<sup>nd</sup> year, for the purposes of the American Ministry of Defense, made a study on the imagined military network. In this network would be connected all the more cities in the United States, and it would aim was to maintain control of atomic weapons in case of nuclear attack. In this study was first mentioned in any way to transfer data are now used in computer networks packet - package. Agency ARPA was using this study in 1969, the first set computer network in the world. These networks connect a few universities in America and are called the message processor. Then in 1972 the scientist Ray Tomlinson created the first program for e-mail.

Vinton Cerf, an American expert in computers, is 1973. year, for the purpose of connecting military communication systems, established protocol for the transfer of data from computer to computer - ACI / IP (Transmission Control Protocol / Internet Protocol). This new protocol is to allow different computer networks mutually connect and share information.

### **3. CYBER CRIMINAL**

Criminal acts against the security of computer data is often called cyber crime. The term "Cyber" is often used to describe new concepts based on computer technology or concepts connected to the Internet. Cyber crime marked all the criminal activities committed using computers. Convention on Cyber Crime Council of Europe, the terms "computer" and "cyber" crime is used as synonyms.

With cyber crime can distinguish two types of criminal acts that can be made via computer.

In the first group of new criminal offenses such as the spread of computer viruses, destruction of files or software, etc., and criminal acts in which the computer means of attack, and object of protection requires a special legal regulation. The second group includes the classic criminal acts, such as fraud, Child Pornography, gambling, copyright infringement, etc., in which a computer is used as a mean of enforcement and due to that a new form of cyber-space.

The problems arise when this is technical, legal and operational. Technical problems were caused by rapid changes in technology and impossibility of the order to be constantly in progress, as well as technical deficiencies that make finding and prosecution of workers. Legal problems are caused by impossibility of legal framework to monitor technological developments. Operational problems caused by the lack of equipment, training and adequate organizational structure, as well as the need to be a high speed regardless of the time zone, language and cultural differences.

Research showed that the computer crime is very difficult to detect, so that the probability of detection is 1: 22,000. For example, in the United States, during one year, in the ways of computer crime damage of more billions of dollars (which is characterized by the fact that a large percentage of out, but the perpetrators are not found).

Pursuant to the above we can conclude that this kind of crime equivocal and to virtual reality provides enormous potential for fraud, sabotage and blackmail.

In the law of many countries is usual separation of computer criminal on:

1. computer abuse
2. computer related crime

### **4. BASIC FORMS OF COMPUTER MISUSE**

Basic forms of computer misuse are seen through accomplishing following banned actions:

1. Piracy
2. Unlawful use of services and unauthorized acquisition of information,
3. Computer fraud,
4. Computer sabotage and terrorism and computer
5. Irruption in the computer system

#### **4.1. PIRACY**

One of the very common forms of computer crime is piracy.

The piracy is the unauthorized copying, use and distribution of computer programs violation of copyright or trade secrets. Piracy includes the "fine" copy of various programs at home, and popular "cities" or "state of pirates," in which the pirated copies of new software can be purchased at very low prices.

Manufacturer of computer programs fight against piracy by installing programs in various forms, such as virus programs which are activated in the event unauthorized program usage, and embedding as a special ID that react differently in the case of unauthorized inclusion.



Volume piracy illustrates the fact that in the world at least 60% of all programs is unauthorized copied. With us, the percentage is much higher.

#### **4.2. UNAUTHORIZED USAGE OF SERVICES AND UNAUTHORIZED INFORMATION ACQUIRING**

Unlawful use of services is reflected in the unauthorized use of computers for the needs of a user, such as unauthorized publication, play, transmit, display or otherwise use computer programs (as well as videogames, Phonograms and other copyright works) protected by law in order to acquire personal use.

Unauthorized acquisition of information represents a special form of unauthorized discovering to data that contain a computer system.

#### **4.3. COMPUTER FRAUDS**

Most used form of computer crime is computer fraud which enables the acquisition unlawful used for them and for the other. To computer fraud is on the way in which the computer enters false or inaccurate information, or missed entering accurate data, or computer is used to display false situation, as the administration of fraud in the criminal justice system.

#### **4.4. COMPUTER SABOTAGE AND COMPUTER TERRORISM**

Computer sabotage present an execution of unauthorized actions to destroy or damage computers and other devices for data processing in the computer system, as well as delete, modify, and prevention of use of data, which are present in the memory of information devices. The most common forms of computer sabotage have to change or disabling use information that has a computer system.

Computer sabotage is carried out by installing obstacles, or in changing the existing password you are defending for the system.

Computer systems, especially the global information database, are very efficient tool that can be used by terrorists and extremists for the implementation of various forms of destructive action, and for the realization of computer terrorism.

#### **4.5. HACKING INTO COMPUTER SYSTEMS**

Irruption in the computer system is a form of harm to a certain secret computer system, or the unauthorized use of data that a computer system.

Irruption in the computer systems primarily hackers made using personal computers which so ably opened. "Computer locks.

This irruption usually does not have evil intent, but represents a certain demo making skills. However, in practice, this irruption can bring great damage vital computer networks.

In some cases computer criminals present a psychological moment. Namely, they consider themselves honest people, and not because thief justify their misdeeds, "Robin Hood syndrome", especially when irrupt in the database and powerful and richer companies. At the same time they consider themselves as "fighters for the fair distribution".

A similar syndrome was present during the great economic crisis in the United States, when they are known robbers Bony and Clyde poor citizens watch as heroes.

Celebrities are also cases of "removing" a dollar or just a few cents from all accounts that are managed in a bank, in which the system break wheeler, which is the amount transferred in to your account.

Irruption in the computer system when there are no harmful consequences or a violation of official or military secrets.

However, if irruption in the computer system aims to collect sensitive economic and military data to lecture other countries or physical persons, and are crime espionage.

#### **4.6. CREATION AND INSERTION OF COMPUTER VIRUSES**

Under the term "virus" means the program that has similarities with the real virus. Namely, computer viruses are a special type of software that can reproduce themselves (and clone), which is wider, and to a secret in order to

infect other programs as they execute goals, which is pre-set maker virus, while the infected programs are seem so.

Characteristics of a virus program are to:

1. is able to reproduce himself or clone,
2. you copied into other programs,
3. expanding permanently, even though the consequences are visible - public,
4. aims to change the other data as it is imagined to its creator;
5. infected programs at first glance do not look different than normal, is a program that includes some intentional undocumented actions without the knowledge of its users,
6. which usually real damage is carrying out that function and
7. computer work with this program as well as others and performs them.

Computer viruses are different. Usually they occur with various types of viral program, which is common to perform undocumented actions which usually destroy all the data that are available from the computer that is executed.

In practice, there are the following types of viral program:

- 1) **Logic bombs and time bombs** are programs that are activated in fulfilling previously defined conditions. They are particularly dangerous, because until the moment of their activation, doggo in the computer memory;
- 2) **Worms** are the kinds of programs that allow the increase of the degree of exploitation of the computer system (travel from one station to another when excluding the "unemployed");  
In time, these programs started to be misused for theft of processor time and complete blocking of computer systems. Now to the programs that are executed regardless of the user, expanding copying themselves on the computers;
- 3) **"rojan horse"** or Trojan is a program that contains hidden, camouflaged code for the execution of some unwanted harmful actions.
- 4) **Viruses** are programs that include two components. Namely, they are one component control the spread of a second exercise destruction;

#### 4.7. HACKING

The notion of hacking is unauthorized violent approach, or attempt to access the system (computer or communications). Executant's unauthorized violent action is a hacker, or the person who has knowledge and capability to fully intrude to unauthorized use of computer systems, and communication.

Hacking characterized by the following characteristics:

- 1) It is unauthorized and carefully planned approach to computer data;
- 2) It is a violent approach, because it is done forcefully remove existing obstacles;
- 3) Access to the system is implemented violent by intruding the existing computer system;
- 4) Intrusion into the system for the base have a high professional knowledge perpetrators of attacks, i.e. hackers;
- 5) Violent intrusion in the existing system, Hacker, as a rule, realized and other unauthorized actions;
- 6) Hacking can carry out one person, or more persons, which is present in the practice of organized hacking achievement of a group hackers;
- 7) Town review, by rule, is far from the place of hacker's residence;
- 8) When the one found in the system, Hacker has acted as an authorized user;
- 9) Hackers tools are made programs and facilities are computer systems and their contents;
- 10) Hackers motivation the specific and diverse and
- 11) Many cases of hacking have wide scale and are internationalized.

Realization of hacking made to amateurs and professionals.

The basic characteristics of amateur hacking are that, as a rule, perpetrators are young people that their intrusion in a computer system does not want to cause harm.

Hacker amateurs usually want to achieve one of the following goals:

1. To find enough challenging system and play with him;
2. To obtain access to the system and search it to satisfy your curiosity and confirm their knowledge and skills;
3. To find a new, interesting game in the existing system;
4. To destroy or modify data, insert viruses and viral programs and to leave one of their messages, that is, in most cases, amusing characters;
5. This form of hacking is varied and difficult to detect, because hackers amateur and has many more times they try to achieve the incursion in the system which often experience failures.

Professional hackers who have made the incursion into the system to achieve a criminal act.

This type of hacking characterized by:

- 1) that the attacks were carefully planned and long-term analysis of the previous own and others' experiences;
- 2) that usually attack the same or similar type of system (which is not characteristic of amateur hacking);

- 3) hacking have very skillfully, ability and in a way that is effective and least risky;
- 4) that the perpetrators of professional hacking have a high volume of technical knowledge and have some motivation for his execution;
- 5) to the role and committing crimes are great, and the consequences of their large-scale, a "get" the great.

## 5. CRIMINAL LEGAL PROTECTION FROM CYBER CRIMINAL

The Criminal Law of the Republic of Serbia sanctions abuse and non-standard behavior when working with computers.

Is reflected in the making regulations of certain criminal offenses and sanctions for enforcement.

These criminal acts are:

- 1) Damage to computer data and programs (Article 298 CC) - unauthorized deletion, change, damage, concealing or otherwise making unusable computer data or programs;
- 2) Computer sabotage (Article 299 CC) - entering, destruction, change, damage, safety or other action making unusable computer or program or destruction or damage to computers or other devices for electronic processing and transmission of data with intent to disable or significantly disturbs process electronic processing and transmission of data that are important for the state bodies, public services, institutions, companies or other entities;
- 3) Creating and entering a computer virus (Art. 300 CC) - the creation of computer viruses with the aim of entering other computer or computer network;
- 4) Computer fraud (Article 301 CC) - entering incorrect data, failure of entering the correct information or otherwise concealing or false data, and thus influencing the result of electronic processing and data transmission in order to themselves or other property Tools and cause other property damage;
- 5) Unauthorized access to a protected computer, computer network and electronic data processing (Article 302 CC) - violation of protective measures and unauthorized inclusion in the computer or computer network, or unauthorized access to electronic data processing;
- 6) Prevention and restrict access to public computer network (Article 303 CC) - to prevent unauthorized access to public disturbance or computer network;
- 7) Unauthorized use of computer or network information (Article 304 CC) – unauthorized usage computer service or computer network in order to themselves or other property gain.

## 6. CONCLUSION

Introduction of computers in almost all areas of modern life in addition to obvious advantages and has some negative consequences, such as the exercise of certain criminal acts. Computers and information technology has become a tool for easier and more efficient enforcement of certain criminal acts, but they have become the subject of attack. Bearing in mind the significance of computer and information technology in the modern states have indicated the need for criminal justice, particularly as the society became only depending on the use of computers in some important segments.

High-tech crime is a crime in the present and future. The state is in the fight against this crime given the importance of fulfilling their international obligations assumed by signing and accepting suitable international conventions that regulate this area.

The international community, the global character of technology, interested horror suppression unauthorized conduct in this field. The large number of conventions and of particular importance is the Convention on cyber crime. Council of Europe with the additional protocol in 2003 year, which includes an obligation punish acts of racism and xenophobia committed through computers. Our country has signed the Convention in 2005, and the ratification has not yet occurred, although the obligations accepted fact and the appropriate criminal acts directed against the computer database.

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## **UML PROCESSES OF INFORMATION SUPPORT IN COMPANIES**

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***Summary:** Computer technology and the Internet are very important invention, which is used in almost all spheres of life. Public administration, judiciary and legal affairs in general, more and more benefit from computer techniques and Internet techniques. In the last time, and our courts are increasingly using computers and the Internet, which significantly accelerate the process by court cases, and also up. Also, through the Internet is the availability of legal acts and their frequent changes, which increased significantly, facilitates their application and meet with them. The occurrence of new criminal offenses in this area leads to changes in criminal legislation. In this paper, described the proposal Business Process model Process model of information support to the productive enterprise, which should be an integral part of modeling the entire enterprise by introducing the system of quality management (Quality Management System - QMS). The company has been used as a model because it is one of the most common structure in the process of implementing information support.*

***Keywords:** computer, law, judiciary, QMS.*

### **1. INTRODUCTION**

Modern business trends, and demanding market, the company is looking for that quick and quality responses to all requests, said the modern market. One of the ways that will contribute to the modern and high quality business is the introduction of quality management system (QMS). In order to obtain conditions for the introduction of QMS, it is necessary to fulfill a specific procedure. One of the first steps is defining the tree (hierarchy) companies. Tree of a company primarily involves decomposition of the companies in the business functions and business processes.

No matter which company it is, we can talk about three main business processes:

- Processes of recovery,
- Basic processes
- Processes of support.

Each of these three business processes has its processes, and one such process is the process of information and support (which in this paper and says), classified in the third process of business enterprise, business process support.

For further introduction of a QMS, it is necessary to determine the boundaries of the width for each process, to make decomposition process to determine lower levels of sub processes and activities, as well as determine the link between the processes (sub processes, activities). Decomposing the model to define the depth and it should be made to the possibility of defining the software modules that can be described by data flow diagram (DTP), i.e. Data Flow diagram (DFD).

### **2. METHODOLOGY**

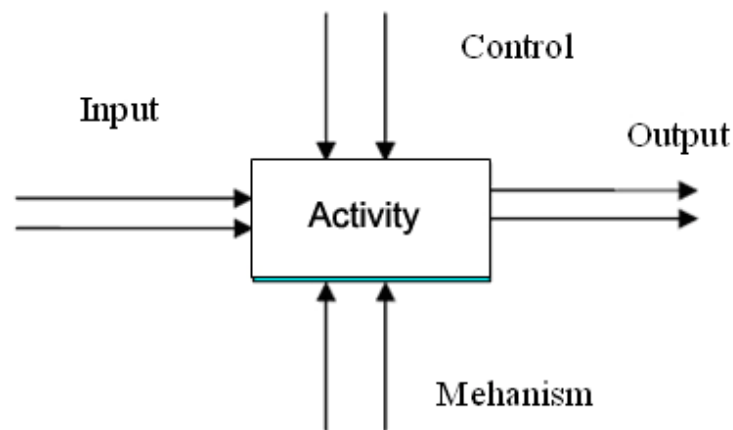
Modeling context diagram and the first level of process support information presented in this paper, is carried out using standard IDEF0 (Business Process Modeling). This standard is used as a graphic means: rectangle (boxes) and arrows (arrows). Rectangles represent the activities (tasks, transformation), and arrows, data or objects related to the activities. Type the arrow is determined according to which the arrow enters or exits, and from the activities by the following rules (rules):

- If you enter on the left side, arrow represents Login (Input),

- If you enter from above, the arrow defines the management (control),
- If you exit on the right in question is the exit (output) and
- If you enter from the bottom, it is about the mechanisms (Mechanism).

Therefore, the diagrams of Business Process Modeling are called ICOM diagrams (Figure 1).

Name of activity is usually in the form of verb / subject, while the arrow is the name of the most common nouns. The focus is on the way of performance, not on the structure of the organization. Models with the idea that one man does all the tasks in the company or that, while one for everyone else waiting. This definition of activities in the company received the news because all present phenomenon of restructuring, where the other plan in place and function generators function, or the organizational structure of companies (which was primarily in ISO 9000), in the first plan you come jobs, or activities, whose definition of good and reflects the efficiency of the market orientation. Classical structure organization is often a source of conflict between the organizational entities that compete with each other, which this approach seeks to avoid.



**Figure 1:** - Semantics of graphical languages IDEF0

Jobs are divided on the hierarchy of business functions, business processes, processes and activities. Tree establishes the connection between the vertical, while decomposition diagrams establish horizontal connections between the same levels.

There are three types of IDEF0 VIEWS:

- graphic,
- text and
- dictionary (glossary).

Diagram defines the functions and links the process through a rectangle and arrow already explained methodology. Text and the dictionary update graphic diagrams. This methodology is explained in detail in [1] and [2], where the examples on the basis of which are designed and diagrams presented in this paper.

Used for drawing diagrams can be used more software solutions such as: BPwin (Business Process windows), Erwin (Entity Relationships windows), UML paradigm, which represent the software implementation of IDEF0 standards.

### 3. DIAGRAM OF CONTEXT OF INFORMATION SUPPORT PROCESS

The primary task or mission of information system (IS) is providing information to all levels of management and governance in the company or external customers. Therefore, he should meet the following criteria:

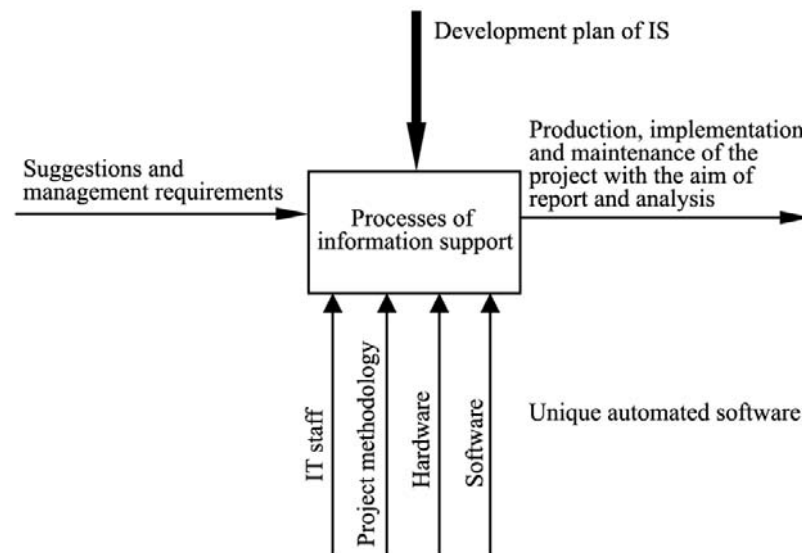
- IS should be defined from the perspective of the highest levels of management, to give information that will enable the adoption of the most important decisions. IS should support the basic objective of the business system as a whole, as well as partial goals of its parts.
- IS should be designed according to the key business processes of the system. Thus is achieved that is independent of organizational structure, because it is subject to change, and development of IS is a long-term and expensive job.
- To IS could provide information to various users in the company, data should be treated as the means of the whole enterprise, as a property of its individual parts or applications.

One of the conditions, which is imposed modern technology, hardware and software, which will give full support to the development of information support system for the QMS, the relational database. The existence of relation

database allows you to enter information in one module, can be from any process, but can be and generalize the suggestions and requirements management. This should define the appropriate documentation, for the development and implementation of applications, according to standard ISO 9000, which regulates the beginning of design, and projecting of information system and which is practically Set project task.

Similar applies to the output, which are in various ways related to all of the Company and the processes, however, the ultimate goal of automated processing of data are surveys, reports, analysis and diagrams (drawings), which move in the Company, and the external users .

Control of this process is the development plan and the work of information systems, and mechanisms are informatics personnel, methodologies for designing databases, hardware and software.

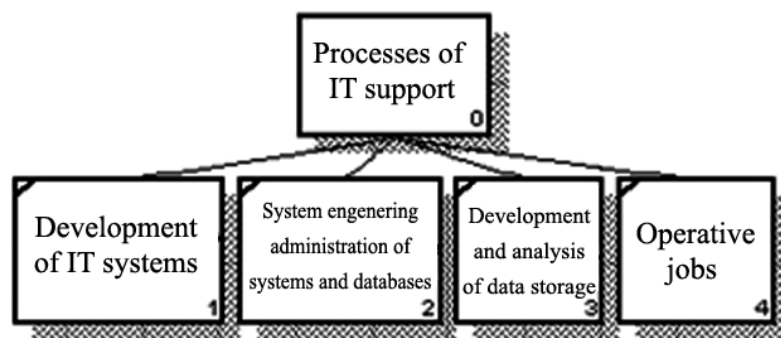


**Figure 2:** - Diagram of context of information support process

#### 4. DIAGRAM OF FIRST LEVEL OF INFORMATION SUPPORT PROCESS

It is proposed that the process of information support is decomposed into four subprocesses, Figure 3:

1. development of information systems,
2. system engineering, administration systems and databases,
3. development and analysis of data storage and
4. operating jobs.



**Figure 3:** Proposed tree of information support process

##### 4.1. Development of information system

This includes all phases of sub processes necessary for obtaining high-quality application software based on the design and modeling relational databases:

- Functional modeling - defining the limits and verification system and tree activities, conducting surveys and interviews, analysis of user requirements and demands from the documents, defining the system architecture, human needs and the dynamics of sales, ...
- In a word, this phase of the formulation of goals, tasks and requirements of the user puts in IT framework.
- Information modeling - models of decomposition, making diagrams Business Process Modeling a production of Data Flow diagram-a (DFD), the selection of candidates for the entities, the definition of entity-relation (ER) diagram (logical and physical model otherwise known as facilities-link diagrams ), where you define the keys, attributes, entities are normal, is determined by the connection, referential integrity, domains, data types ...
- This phase is obtained detailed information developed model real (sub) system.
- Modeling application - the determination of the specific database, generating database schemes, tables, columns, keys, indexes, define menus, forms, queries and reports, development of applications, ...
- The project gets its interface to the user - a working version of the application.
- Implementation - application testing and correcting errors, design training, the introduction of applications in the work, end user testing in the environment, its changes, development of user instructions, presentation application, implementation of training, improvement of the system ...

Information system "lives" - simulates real system operation.

While the project task input of this process, each of these activities for the project output is in a form and a certain level. These projects represent a control for the next activity. Construction project fully documented and implemented information system is kept in the archives. It is usual that the idea for the project for the entire business system or its subsystem while the main construction projects and can work at the level of sub-parts (process).

As the total output from this process is a user or developed software, but also fully documented application.

Given the present-day development and implementation of network communication, as well as the widely used client-server architecture IS, in the design phase, it is necessary to include elements of other processes, and is a mechanism for the development of information systems working group for the development of IS, which is a mixed team professionals (planners, system engineers, analysts, developers, and internal and external specialists for certain areas). Output from this process is concretized and project databases and computer networks, which control the following processes.

## **4.2. System engineering, administration of systems and databases**

Sub process consists of:

- construction, monitoring, maintenance and administration system,
- development and maintenance of databases, database administration,
- development, maintenance and monitoring network, the introduction of Intranet and Internet application,
- installation and maintenance of the software,
- security system, security, and antivirus protection,
- development and maintenance of hardware,
- recording and tracking the state of the user,
- development of procedures for the use of the system as well as backup-procedure,
- acting on the intervention, ...

Depending on the complexity of the specific companies and network architecture, the scope of this process can range from simple to very complex, and therefore the number of workers may be one of the administrators, to the entire team.

## **4.3. Development and analysis of data storage**

Sub processes consists of:

- handling of data and their preparation,
- data analysis,
- program processing (encoding, updating, calculating ,...)
- formation of views, queries, reports and drawings,
- of procedures for the use of applications,
- partial backup of a ...

and in order to maintain the database and generating high quality output.

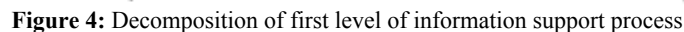
## **4.4. Operative jobs**

In this sub processes belong:

- current operating activities,
- technical maintenance of hardware,



- with the aim of the technical maintenance of systems and databases.



Application of computer techniques in the judiciary and legal affairs today has been great expansion. As we specify, in the beginning they were brave moves by individuals who were aware of all the new information technologies (such as we have provided the Municipal Court in Pozarevac 1994). Now the application of new technologies is on the level of national interest with the aim to cover the whole country.

Legal affairs and securities gain efficiency by applying new information technologies. I think that today we can not perceive the boundaries of its development.

However, the question arises: if it is already and if this process is of vital importance for the whole company (such as global, and for its parts), whether this process should be classified in the support or should be classified in the process of management. In other words, where is the border between the support and process management is in question?

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## **WASTE MATERIALS MANAGEMENT**

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**Summary:** *An important aspect of transposition of material products is the protection of the environment related to the operations involving the reuse of products and materials. Managing these operations is marked as Product Recovery Management (PRM). PRM refers to caring about the products and materials after their use. Management of waste materials is to control all activities related to the collection, disassembly and processing of used products, product parts and materials in order to ensure a sustainable (environmentally acceptable) reconstruction. The aim of this paper is to point out the problems that resulted as a consequence of natural environment violation, which have become significant at the end of the past and the beginning of this century. A special aspect of this paper is material ecological product and its adaptation to the natural environment, and the degree of negative effects on the environment. Problems of exploiting the natural resources, their limitations and uncontrolled spending are an important number of issues of maintainable development, and the technology used for obtaining environmental products, regardless of the volume, provide a wide basis for environmental innovation. The paper presents a general model of reverse logistics activity, which shows the logistics activity and management skills that are used to remove (deposit) waste material, ranging from single-use packaging to different material products circulating in the goods traffic.*

**Keywords:** *ecological product, exploitation of natural resources, reverse logistics model*

### **1. INTRODUCTION**

Research and measuring the interaction of technology and economy, while the relations of natural environment and natural development became actual after the publication reports the Roman club "Borders growth".<sup>1</sup> The report is based on two basic thesis:

- Given the increasing pressure on the economy of natural resources, they will soon disappear;
- Economic expansion has resulted in contamination of human environment, which will compromise the survival of living beings on the earth.

Reactions to this report were different, followed by the suggestions from stopping economic growth - "zero growth" options, to stating that it is possible to simultaneously meet the aspirations for economic development and environmental requirements. Prediction of the Roman club have not been achieved, and as the members of the club say, forecast was to point to the possible consequences, if you do not do the necessary, and it managed to do that. Their apocalyptic predictions were canceled due to the effects of scientific and technological processes. Started with the successful replacement of scarce resources, new technologies have enabled the use of low-grade ores, the efficiency of recycling was increased, the costs of extraction was reduced, resources were saved, and many technologies do not pollute the environment any more [6].

Due to requests to take more care of nonrenewable natural resources<sup>2</sup>, so that future generations would not be left without them, the preservation of the ecosystem in the developed countries is becoming a new economic category. These countries include important new elements in the development strategies that make the so-called ecological "maintainable development". It meet the needs of the present not questioning the possibility of future

<sup>1</sup> The Roman club has a hundred members from 57 countries. According to their estimate, many reserves of raw materials are expected to be exhausted in 20 to 30 years.

<sup>2</sup> Natural resources are divided into renewable and nonrenewable (exhaustible and inexhaustible), but can not be completely separated because of the example of metals that can be recycled and placed in the renewable sources. So, strictly speaking, nonrenewable sources are only the energy materials.

generations to meet their own needs. According to some economists, even such a development, during which the value of exploited natural resources reimburse by increasing social capital and knowledge, can be considered sustainable. They believe that technology is constantly offering new alternative use of conventional sources. It is certain that, before the supplies of oil be exhausted, the production of cars that use other types of fuel will start. Also, they show the limited possibilities of substitution, because there is no substitute for damaged ozone layer or extinct plant and animal species. Therefore, in the assessment of countries' welfare we must not ignore components of environmental degradation. It imposes the need to include environmental criteria in all decision-making process. All manufacturers must face the waste they create, and therefore already in the phase of designing the product should foresee the possibility of its valuation or elimination. Also, it is necessary to choose the best technological process, and if the by-products are harmful, it is inevitably needed to predict the actions of waste material cleaning. Waste should be treated so that it is not harmful for the environment, finding the application for them or make them suitable for disposal.

Three media of natural environment: air, water and land should be protected the from waste emissions . Law delimitates the waste into:

- Wastes suitable for re-use in the production in which they emerged, or can be spent in natural reproduction processes (metals, carbon dioxide, water, etc.);
- Wastes directly suitable for re-use and can be a commercial goods (from metallurgy furnace slag, molasses, sulfur dioxide with chloridising roasting);
- Wastes suitable for reuse after being processed into secondary raw materials (paper, glass, textiles, metals, plastics);
- Waste inappropriate for re-use, and disposed directly or indirectly, after processing, become harmless (residue from the chemical industry);
- Waste physiological or otherwise extremely dangerous for man and his environment, the so-called "special waste" (used nuclear fuel, certain chemicals, etc.).

## 2. ECONOMIC ASPECTS OF MATERIAL PRODUCTS

The idea of sustainable economic development in the last decade of 20 century, received a wide range of supporters. The immediate consequence of that is a wider circle of interested parties who expect business companies and organizations and their products be adjusted and changes in relation to the natural environment. The present state of natural environment is the result of nonsystematic thinking in the past. Planners, engineers, designers and other participants in the creation of products have traditionally been responsible for certain characteristics of the product, but not for waste when it occurs, or the resources that are in the hand often spent. A new approach to creating products is based on the emergence of pollution prevention and overspending the natural, material and energy resources with acceptable costs, efficiency, productivity and efficiency in the protection of natural environment [4].

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Why do we need to respect the environmental aspects of commercial practice [10]? NKL, Norway vertically integrated company for production of food products, believes that reverse logistics programs and environmental programs will ensure the company competitive advantage. The company has identified four factors that contribute to creating competitive advantage:

- Retail facilities of the company to promote their environmental position,
- The company will attract those group of consumers who want to buy healthy food products,
- The use of "green" stores (health food store) will result in reduced costs in many areas of business,
- "Green" stores will have a positive response in society.

NKL increased sale of healthy food products for 220% in 1997 and used 1.5 million reusable containers for fruits and vegetables (which represents 14,000 tons or 70% of all fruit and vegetables of Norway), to reduce costs and time execution order. In addition, NKL increased level of use of railway transport from 50 to 60% (which led to cost reduction, reduction of environmental pollution and more efficient use of energy) and implemented the program of environmental education for about 6,500 employees [12].

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Product is a central object of most human activities. Its life course flows in the natural environment and with the help of the natural environment. The need for products is such that their number permanently increases by types and in total. Therefore, it is understandable why the interference of products and economic environment is intensively analyzed today. So, every material product or material part of the combined product is in some interaction with the natural environment. Raw materials are extracted from it, it makes the product, packs it, stores it, transports and it is being used. It also discharges byproducts.

Finally, after being used, we dispose the products as a waste in it. Besides that, interactions with the natural environment in many products are going on in the course of it being used, because, while being used, energy or materials are being spent (products household appliances, vehicles, etc.).

Interaction between products and natural environment can be from poor to significant, from short to long, and can appear at a global, regional or local level. Their systematic analysis can be done through the life course of the product, which is very logical, because the environmental problems appear during the production, manipulation and after-sales. They can be reduced or eliminated by selecting the appropriate design of products. In other words, only the products that are matched with the requirements of the natural environment according to the adopted criteria should be lead to the phase of production [10].

The level of adaptation of products to the natural environment may be moved in a wide range: from full adaptation to complete incompatibility. Product that is fully adapted to the requirements of the natural environment, and the one which in cannot negatively affect the local, regional or global natural environment in any way, is the "ideal product" (clean material, or material part of the combined product). Realistically speaking, today's products are still far from this request, and for now we can only talk about "ecologically targeted products". These would be the products that are less threatening to the natural environment than the average real product. In our practice, such products are referred to as environmental products, although there are other terms as "natural", "green", "healthy", etc.

Therefore, realistically speaking, under environmental products today we consider products, material or combined, which have less significant negative effect on human health and environment, in comparison with other products that serve the same purpose.

### **3. INTERACTION OF NATURAL ENVIRONMENT AND PRODUCT**

Interaction between the natural environment and the products are numerous, complex and intense. Product is created, used, spent, and disposed to the natural environment. As a direct consequence of interaction between the natural environment and the product can get to emission of various agents to the natural environment and to take various substances from the natural environment. Therefore, there are various environmental problems that are, roughly speaking, manifested as [16]:

- Emissions to the natural environment and - or
- Over-spending of natural resources.

In the product's course of life a variety of materials, energy, noise, radiation, scents, can be disposed as a secondary product into the natural environment. Agents that are found in the natural environment in this way are called emissions.

Their direct consequence is the occurrence of various chemical and physical agents (substances, noise, shock, vibration, radiation, etc.) in the natural environment. As a result of emissions in the natural environment we have polluters. Most environmental problems as a result of a variety of programs today are:

- Greenhouse effect, which appears as a consequence of the presence of gas that blocks infrared radiation, because it violates the thermal equilibrium. Serious consequence of these emissions is the change in local, regional and global climate;
- Destruction of ozone layer: the ozone layer is the top layer of the atmosphere, high above the surface of the earth. Ozone, although a very toxic gas, absorbs ultraviolet radiation, which is very dangerous to the flora and fauna. For people, the main danger is the increased risk of the emergence of skin cancer. The damage ozone layer mainly originate from chlorinated and fluorinated hydrocarbons (e.g. Freon).
- Summer smog which consists of: nitrogen oxides and hydrocarbons in the air which in combination with the sun light cause the creation of ozone in the lower layers of the atmosphere. It is harmful for people, but also for the entire flora and fauna. It has already been established that it causes serious harmful effects on crops;
- Winter smog occurs due to increased concentrations of small particles of dust and sulfur dioxide. It causes disturbances in the function of the breathing with people.
- Acidification, sulfur and nitrogen oxides with water (atmospheric sediment), pass into the acids that cause the increase of soil acidity, which primarily affects the plant species that grow in such soils;
- The appearance of toxic substances: in addition to the so far listed emissions as an inessential, but not naive product in the air, water and soil, there are other substances toxic for people (heavy metals), and other ecosystems (pesticides and other chemicals);
- Accumulation of solid waste: this is a problem that is present in many countries. Solid waste appears in all phases of products' life flow. The problem is solved in various ways (recycling, recuperation), but there is no possibility of complete solutions to this problem today.

### **4. ECOLOGICAL IMPLICATIONS OF EXHAUSTION OF NATURAL RESOURCES**

Exhaustion of natural resources is another kind of environmental problems. They occur as a result of the extraction of raw materials or substances from the natural environment. Natural resources, renewable or nonrenewable, are limited and their over-spending leads to their disappearing, sooner or later. Reserves of mineral raw materials are so small that they can practically be exhausted in one generation. The problem of attrition of natural resources today are mainly related to:

- Energy using: the using alone may create environmental problems. This is a consequence of the fact that the reserves of fossil fuels and uranium are limited, and the use of renewable types of energy (such as wind energy, the sea, the sun) is still possible only with expensive technical solutions. Therefore, the very use of energy (regardless of the consequences of combustion) is often considered ecologically unfavorable;
- Using of nonrenewable material: reserves of some metal ores, as well as fossil fuels, are final and limited, and many of them are significantly exhausted in the last decades. Theoretically speaking, the metals can never completely disappear from the earth. They are always, can always be recycled, under the condition that they are not turned into the ionic form (if not in the form of compounds). However, in practice, extensive exploitation of ores can have serious economic consequences. Using of low-grade ore requires more intense energy using, creates a greater amount of waste and causes more emissions. On the other hand, constant recycling of metal leads to reducing the level of quality and therefore increasing the amount of energy used for refining;
- The use of renewable material resources, by the definition of renewable resources can not be spent, but their renewal speed is limited, so the negative consequences for the economic environment. A typical example of such resources is wood, which is renewable, but the renewability requires a certain time, and it is independent of the other possible implications, and it is also a resource with limited scope;

## 5. TECHNOLOGY USED FOR GETTING ECOLOGICAL PRODUCTS

Possibilities for getting environmental products are different and it is now broad basis for product innovation. Basic technology of obtaining environmental products, regardless of the volume and types of modifications are recycling, substitution, dematerialization and recuperation.

- Recycling: by recycling, the product used in the production returns as a starting substance for equal, similar or different products. This solution is now used a lot in treatment of cellulose, glass, and metal material. The main positive effects are the reduced spending of power and material resources.
- By recycling of energy the hydrocarbons, i.e. oil and natural gas, which serve as sources of energy, they are firstly being used for the production of certain products and only after the rejection of used products they are being burned, and we gain heat energy from them. This is primarily related to plastic materials, which usually have a great energy value, and combustion products can be such that they are less burden to the ecological system. Great power relief of metallurgy can be achieved using secondary raw materials, i.e. recycling of used metal products, as is the case in obtaining products of aluminum.
- Substitution: technology of substitution is primarily related to the replacement of rare and / or hazardous substances in the cooling devices, tetraethyl lead in gas, arsenic in pesticides etc. However, the motives for substitution may be different: a better product features, easier maintenance, easier to use, lower price, etc. So today for example, we use aluminum instead of wood, copper, tinplate, glass. We should point out substitution heavy metal with lighter metals, with the development of the means of transportation (aluminum instead of steel) and packing materials (aluminum cans instead of the white sheet, PET bottles instead of glass).
- Dematerialization: the main goal of the technology of dematerialization is more efficient use of the given material for the function. An example of dematerialization is the use of electronic valves, then the transistors and today, the use of integrated circuits. It is present in other areas: the transfer of information, chemicals, materials for packaging, winter vehicles pneumatics, etc.
- Recuperation: the use of waste flows from the current irreplaceable resources as alternative resources. Cost-effectiveness of the use of these substances is in a great extent connected with the cost of primary raw materials, their composition and other characteristics. Classic example of this technology is recuperation of elementary sulfur from natural gas and oil production or sulfuric acid from the shaft of non-ferrous metals (copper, zinc, lead). Ashes obtained after combustion of coal is considered to be a very important raw material for making cement. Example of this technology is also the production of bio-fuel from the waste water rich in organic matter (waste water from dairies, slaughterhouses, sugar refineries, cattle farms and communal waste water).

## 6. REVERSE LOGISTICS MODEL

Reverse logistics refers to all operations related to the reuse of products and materials. Managing these operations is marked as Product Recovery Management (PRM). PRM is to care about the products and materials after their use. Some of these activities are somewhat equal to those that appear in the restoring of defective products due to errors in the production process. Reverse logistics refers to all the logistical activities related to the collection, disassembly and processing of used products, product parts and / or materials in order to ensure a sustainable (environmentally acceptable) renewal.

Reverse logistics deals with the following issues:

- What are the alternatives for the recovery of products, product parts and materials?
- Who should perform range of operations related to recovery?
- How this operation should be handled?
- Is it possible that the activities typical of reverse logistics integrate into the classical production and distribution systems?
- What are the costs, and what are the benefits of reverse logistics, speaking from the economic and the ecological angle?

Chart 1: The reasons for the use of reverse logistics model	
The primary reasons for installing the reverse logistics model	Frequent cases where the reverse logic models are used
Return of goods for gaining a discount or money refund	VCR that does not meet the expectations of consumers has been returned due to money refund
Return of products that are rented in the short term or the long term lease	The courtyard equipment which is rented for one day being returned
The return of the product to the manufacturer for repair, re-production or the return of the most important components of the product	The return of used car alternator to the manufacturer to produce or sell it again
Return of products in the warranty period	Returned TV due to defects in the warranty period
Reusable packaging	Return of mineral water bottles to be purified and re-used
Return of goods from consignment sales	Stereo device that is entrusted to the sale of sales staff and is not sold after a certain time being returned to owner
Replacement of old products for new extra payment	Dealer acquires used car when a customer buys a new one. Used car is ready for re-sale
Parts are sent to companies for product improvement	User sends his computer to the manufacturer to install his CD-ROM drivers
Return of transport-manipulative components related to the product	Unnecessary packaging or pallets are returned when they are not necessary
Withdrawal from the sales of products due to the lack of standard equipment	Return of the car to seller because of faulty seatbelt
Parts sent to manufacturer to review or re-calibrate	Medical equipment returned because of checking of measuring device or recalibration
Products do not meet the guarantee provided by the manufacturer	Returned TV because it does not function in accordance with the declaration

Reverse logistics model can be used for different purposes as shown in Chart 1. Key parts of the reverse logistics model are:

- Recycling,
- Return of new products by consumers,
- Return of products used by consumers and
- Return of reusable products.

### 6.1. RECYCLING

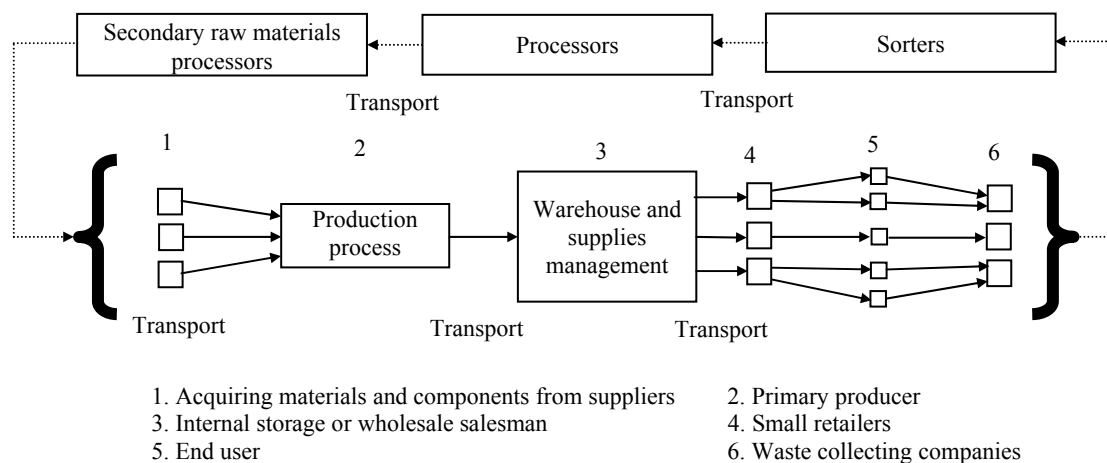
What happens to the aluminum cans after clearing its content? Tin can that can be recycled, should be deferred to recycling cart. Since the can is positioned, a reverse logistics model takes it over. The primary goal of reverse logistics model is to run the aluminum can back through the distribution network. Such a logistics model needs of consumers to take an empty can and to return it to the side that is responsible for the recycling process.

Recycling system involves several members of the chain of supply. Supply chain for recycling uses a four degree process:

- Collection of waste material from the waste basket and their delivery to the company responsible for recycling;
- Processing of products that can be recycled for the creation of secondary raw materials,
- The use of secondary raw materials for the production of new products;
- Return of new products to the market.

Many municipalities and regions developed recycling programs to reduced the need for housing waste in landfills and to apply reliable techniques for environmental protection. Usually the recycled products are based on aluminum, glass, plastic and paper. Often the biggest challenge is not creating a reverse logistics model, but its implementation that can monitor the growth of the volume generated by programs processing.

The most common organizational structure of the reverse logistics model includes the following participants: collectors, sorters, manufacturers of secondary raw materials and secondary and other raw materials processors [8]. Collector collects relevant products provided for the recycling program and submits them to recycling center. Sorter assort materials in homogeneous groups after which they are sent to manufacturers of secondary raw materials. Manufacturers of these materials negotiate the purchase of certain materials that can be recycled (paper, glass, plastic or aluminum) and transform them into the secondary raw materials. Processors of secondary raw materials, combine fresh materials and secondary raw materials, and as a result you get a product that contains recycled materials. (Figure 1).



**Figure 1:** Basic reverse logistics model.

Many products can be recycled. Also, many products can be re-used in the alternative purposes. For example, some types of oil and lubricants can be recycled or re-used for lubricating machines. These cases impose the reverse logistics designers model the problem of stimulating consumer to return the used product. Some companies offer financial stimulations: from cash payments to tax relief. In order to keep recycled products more competitive, they should not cost more than new products.

## 6.2. RETURN OF NEW PRODUCTS BY CONSUMERS

Reverse logistics model allows customers to return unwanted products. Consumers usually return defective products. Participants in the supply chain are trying to protect the integrity of the product in the system, but broken and damaged systems can still be delivered to customers. Reverse logistics model must keep faulty or damaged products that require a longer reverse channel than the channel for the return of usable products. Consumers return defected or damaged products to the retail facility and in exchange they get another product or a discount. If the defective product delivered from the factory, retail facility often returns the product to the manufacturer and receives a financial discount. If the damage is caused during the movement through the supply chain, carrier, distribution center or another member of supply chain takes the liability (financial responsibility) for damages that occurred.

## 6.3. RETURN OF USED PRODUCTS BY THE CONSUMERS

Consumers are often stimulated to return the used products to the retailer and to obtain financial discount. In the motor industry, customers are given a cash discount if they return the vital parts of used the products. Car



alternators, starters and water pumps can be produced again from used parts. Car retailers design and organize the work of reverse logistics model.

When the retailer receives a used product, he packs it and returns it to the car dealer. Distributor approves the value of returning a product and sends the used car parts to the re-production. When repaired, these parts are used as a cheaper alternative to new car parts. This logistics model starts with stimulations to return used products to retailers. The most common stimulation is a discount when replacing used parts for the same, but repaired part. To get discount, customers must return the used part in the moment of purchase. If the buyer does not bring the vital parts of used products that will raise the cost of repaired product.

#### **6.4. RETURN OF REUSABLE PRODUCTS BY THE CONSUMERS**

Many returned products must undergo some kind of re-production and modifications. However, some products can be re-used with minimum effort. For example by sterilization or cleansing glass bottles can be used several times. Also, some stores in the U.S. rate of 5 to 10 cents for each soda bottle. When the buyer brings an empty bottle, then he gets a certain amount of cash for it. Store takes ownership of the glass bottles and uses reverse logistics system to return empty bottles to the bottle factory. Bottles factory cleans and sterilizes used bottles, fills them again with soda, closes each bottle and returns it to the market.

#### **6.5. EXTERNAL REVERSE LOGISTICS MODEL**

Environmental issues encourage many companies to entrust external companies with the execution of some or all functions of reverse logistics. Using services of external companies is done for the purpose of meeting the different logistical concepts, including materials handling, transport and storage. As the demand for reverse logistics increases, an increasing number of logistics service providers expands the offer of their services. Many companies offer special services to help customers to increase their awareness of the ecological importance of logistics. External operators that do not provide the entire service package to the local population (disposal and collecting of garbage, as well as collecting and sorting material that can be recycled) will reduce its competitive advantage.

Since most consumer demand both traditional and reverse logistics functions, some external logistics service providers realize that they can not offer every possible service to their customers. They build business relationships or strategic alliances with other providers of logistic services by offering more attractive or more comprehensive packages of services to potential customers. General form of strategic alliances requires the establishment and engagement in an attractive business relationship in which both sides have benefits, dividing the risks and resources. The purpose of these alliances is to raise the level of service by establishing development and maintenance of long-term business relations. Building business relations and associating resources with other providers of logistic services not only allows the construction of a better resource base, but allows the reduction of risk through diversification. Reducing the risk may be a primary concern of external logistic services provider that offer the use of reverse logistics (e.g. transport of hazardous waste material to the center for recycling).

### **7. CONCLUSION**

- The essence of the concept of the model of efficient functioning of trade is in the integrated approach to constituent elements whose transposition is an important part of management of waste material products. Modern development imposes all the more larger and more severe environmental problems that need to find appropriate technological and economic solutions. All manufacturers must face the waste products that are created and therefore already in the phase of designing product should foresee the possibility of its valuation and elimination. Also, it is necessary to choose the best technological process and if the harmful by-products are inevitable, we need to predict the actions of waste media purification. Thereby, we must make a detailed analysis of the interaction of each product and natural environment, namely, we must define the structure of ecological products and strive to creating innovative activities in the full realization of the environmental demands;
- We should pay special attention to the interactions of material products and the environment and the events of this action, which is particularly reflected through overspending natural resources and emissions, and as a direct consequence we have the appearing of various environmental pollutants. In connection with this we should support all activities and take part in them at the local, regional and global level;
- We should work to understand the strategy of overspending of natural resources through the use of other alternative energy sources and protect the limited energy resources. We should also develop technology innovation with a strict application of environmental standards in obtaining material products;

- Implement reverse logistics model in our business systems, which will enable the recycling operations, the return of products used by consumers, the return of products for reusable. General reverse logistics model requires the establishing attractive business relationship in which both sides have used the division of risks and resources. This model is a form of interdependent relations in order to increase of services and diversification (eg transport of hazardous waste products to the center for recycling).
- This research will serve economists, managers, entrepreneurs, and all other participants in the operational activities of trade to be better acquainted with the business functions in the management of trade and to analyze the possibility of realization of business and waste material flow products.

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## THE ROLE OF REENGINEERING IN THE MANAGEMENT OF NEW TECHNOLOGIES AND INNOVATIONS – ‘CITY MANAGER’ CASE STUDY

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**Summary:** *The study describes the significance of implementation of the business processes' reengineering in a modern business, its role in a new technology and innovations management, with emphasis on the case study 'process of sewing shoes' upper parts' and implementation of this management technique in manufacturing processes in small and medium - sized companies. The purpose of the study is to highlight the significance of reengineering implementation and its significance for fast development of a new technical paradigm, speed-up of technological development of the company, state and the society itself, improvement of the working conditions, reducing costs, profit increase, all of which lead to alleviating keeping the place in the market. By this, the technique is once again put at the pedestal of the world interest for the new management techniques to improve business conditions.*

**Keywords:** *Reengineering, technological management, innovations, process*

### 1. INTRODUCTION

Business process reengineering is a management technique developed by the end of the 20<sup>th</sup> century, namely at the beginning of the 90's, and it deals with a study of redesigning of business process essentially, which means cancellation of the old processes and instead creating the completely new ones. In order to consider them a successful reengineering, such redesigned processes should provide exceptional savings or profit increase (over 50%).

On the other hand, it is necessary to find a way to use technological and innovation potentials for improvement of the company's functionality and development, as well as reaching, maintaining and developing of the competitive advantages of the economy subjects. Technological changes are one of the key forces influencing company's competitive advantages and are hard to respond to in due and duly way.

Nowadays, management has to be in a position to control both stable and changeable situations. Successful technology managers have to quickly recognize and respond to external changes. In a long run, technical-technological development is a key factor for clarifying basic characteristics of the social and economy development. Scientific-technological revolution is significantly penetrative and is dispersed into various areas by creating numerous new industrial and non-industrial branches and their segments, products and services, and by implementation of their achievements in already existing sectors and economy branches for the sake of modification and revitalization.

It created basis for a radical change and introduced the world to a new growth mode and civilization context that most of the authors call *the creative, innovative society* or *the knowledge society*. A new technological-economic paradigm (TEP) is based on the information intensity of processes, assets, material and products. Instead of mass and homogenous production, there is a small quantity, heterogeneous and flexible one that enables diversified response to market requirements. Also, the mere concept of the production is changed. We go from economy of the great production capacities and giant companies' management towards reducing of the production in big companies, starting from gigantic steel and car factories that reveal their weaknesses intensely with the appearance of new TEP elements, towards production increase in small and medium-sized factories that utilize conveniences of having in the vicinity the market, clients and easy communication with the suppliers.

From the economy of the size or volume, based on homogeneity, mass production of the same or similar products which leads to minimizing the production unit price, manufacturing process is directed towards the economy of variety, cost-effective volume based on the flexibility and diversity, with a tendency to reach high quality, standardization and maximum adaptation of basic characteristics of the product to the end user's needs and the small quantity production. The most difficult innovation in transforming organizational structure in the new TEP, as well as in economy life, in general, is overcoming and abandoning of the old principles of running the business related to maximum stability, productivity and profitability in a short-term run. Instead of that, maximum flexibility and a quick response to the market and consumers' needs are considered to be the key features. The new competitive situation requires:

- Revision of the potentials and renovation of the manufacturing process from the aspect of the new technologies implementation;
- Introduction of the new management methods and techniques;
- Redefining the position and importance of the human capital;
- Restructuring of the business activity, organizational structure and development strategy of the company as a whole.

Based on the a/m, one may say that a new process reengineering as a new management technique is essential in order to approach the innovation implementation and fundamental redesigning of the business itself more successfully, so that it could be in accordance with the new technological-economical paradigm [1].

The purpose of this study is to explain 'a process of sewing shoes' upper parts' case study. Furthermore, it is important to mention that, during the problem examination, the new process planning and the realization itself, no existing methods were used, but the management has come to the individual, completely new process solution, in accordance with the problem, that should be used as a process innovation applicable not only to the process of furbishing (germ. Herricht) [2], but also to the many other manufacturing processes.

Reengineering is a fundamental rethinking and radical redesign of business processes in order to achieve dramatic improvements in critical, significant performance measures, such are costs, quality, service and speed.

This definition has 4 key words:

- fundamental,
- radical,
- dramatic, and
- processes [3].

Main part in the philosophy of reengineering belongs to the processes and this term regards to the process design. Reengineering revolution had two main subjects: process organization and process organization in a more superior way.

The term reengineering is tightly connected to the need of the companies to reinvent themselves, namely a new business model to achieve re-inventiveness of the companies [4].

## 2. 'FURBISHING' CASE STUDY

This case study of the implementation of the reengineering onto business processes is a part of the business experience of the company 'City Manager'. Furbishing (germ. Herricht) is a technical term for the process of sewing the upper part of the shoes, comprising shoes' uppers and paddings, hereinafter referred to as 'Furbishing'. In the a/m process, depending on the various factories, over 50 machines can be used, as well as much more workers, for some of the process operations can be performed only manually.

It is assumed that the globalization process, especially in the shoes market, had its share introducing competition from abroad, and the conclusion would be that the processes must be changed completely in order to make them more profitable and to improve competence of the companies in the market. We must also bear in mind the fact that the market tends to speed up.

Most plants in the world organize the 'furbishing' processes in such a way as they introduce traveling band between the two rows of the machines. Its purpose is to save time in takeover of the semi-finished products from operation to operation. In counterpart, with manufacturing organized without the band and with the machines spaced in parallel way, workers get up at the end of each operation in order to take away the semi-finished product and to take a new group of semi-finished products for further work.

Therefore, they leave the machine, take the semi-finished products away to the specified place where the products are temporarily stored, and take the new semi-finished products from there or from some other international storage place, and bring them to their working place. It requires bigger effort and a certain amount of time for walking. Finally, derivative time can reduce the work effect up to 10%. Due to this, most of the plants introduced the traveling band for the machines that reduced the losses due to workers leaving their working places (figure 1).

World business conditions change. As the rules of the new technological-economical paradigm suggest, there are no more rules of the mass-production. This principle became inefficient. Nowadays, manufacturer cannot count on mass production, but on the manufacturing for the familiar customer. It means that the needs of the costumers, their specific requirements, are fulfilled, and that increases the costs, reduces the series, and increases the variety of the offer.

In the previous days, process organized in this way gave the perfect results. Huge series indicated that every worker did his best. Eventually, the production cost was significantly lower.

Today's production almost excludes big series that are renewed each season. Not even the bestselling models in one season have the same success in the next one. Service life of the model is rarely passed to the next season due to the great influence of various fashion styles. Therefore, it is necessary to put as many new models as is possible to the market, to support it with marketing mix, which leads to serious confusion in demand and supply. One cannot continue the manufacturing under the assumption that certain model will be required. Thus, the manufacturing for familiar customer started, meaning that manufacturing goes on in accordance with the order. As there are less big costumers, and more of those small, picky ones, with specific orders, based on great offer of models, we come to the manufacturing plans that contain lots of changes and small series.

As the process with assembled band is not flexible and requires big series, it was necessary to conduct the reengineering of 'furbishing process'. That is when the question was posed: whether to assemble the traveling band in the plant or to try a better solution.

What exactly is the major problem with the manufacturing process established in this way? Apparently perfect manufacturing process, with useless time minimized due to the traveling band, is adjusted to never-ending big series. Indeed, if it took days to work on one product, this type of production would be the best because it implies almost 100% utilization of the capacities. However, it takes around 10 products to be done daily in this manufacturing process, and each product has its own process scheme.

In consequence, this process organization would become inefficient, due to big delays and bottle necks. What is the main problem? There are often repetitions in the process that comprises up to 50 operations. It happens that the operations like gluing the lower parts, furbishing, etc, repeat up to 10 times a day during the process, meaning the machines must be in the process the same number of times. Thus, it happens that, due to the traveling band, certain process machines occur 10 and more times on the band so that the process be continuous. It means that, for processing one model with 50 operations, at least 50 workers must be hired for 50 machines, and one number of machines repeats over 10 times. Is it justified to use so much working space, machines and workers for small series?

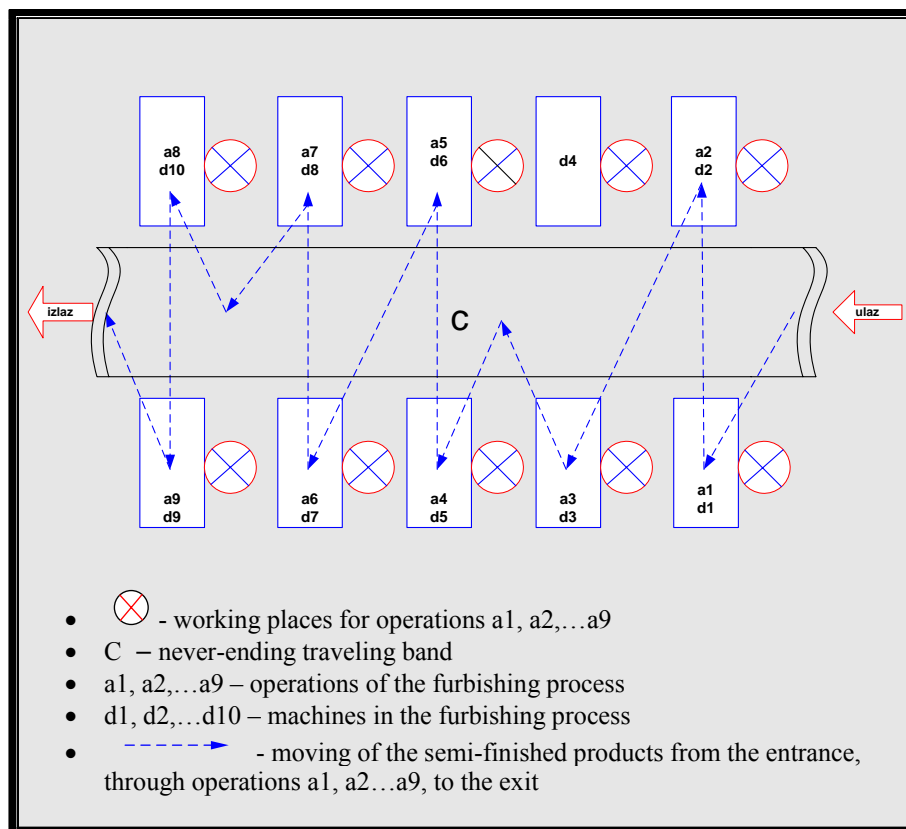


Figure 1: Original manufacturing process of furbishing

Determining this problem led to the conclusion that the reengineering manufacturing process of refurbishing is more than necessary. Therefore, an experiment was conducted by establishing a new process, as shown in the figure 2.

In a new set up of the process, manufacturing machines and places with the same operations do not repeat more than is necessary. Semi-finished product or auxiliary goods going into the process are transferred from one place to the other in accordance with the process set up; it returns to individual machines as many times as is necessary, without introducing new machines and new human resources. It is also necessary to mention that in this way the rule for the workers not to get up while transferring semi-finished products from one process place to the other is retained. It is enough for them to turn around the vertical axis and hand the semi-finished product to the worker who is in charge of the next process operation. Leastways, workers pass the semi-finished products to the other workers over the central table, and they take them to the specific manufacturing machines rarely used, but nonetheless necessary, and which are not in operation for the small series all the time; thus we open the possibility for workers to operate more machines in a new business process, depending on the process requirements.

This kind of process organization is possible with the business processes that use tools besides the machines and menial work. Illustration 2 shows working desk suitable for 6 workers who perform the same or similar process operations. They can also be trained for all or almost all process operations requiring menial work. The new process implies all-purpose workers, trained to operate more process machines or perform more process operations with tools. By this, the manufacturing system by Adam Smith is rejected in many ways – his system implies one working place and one worker for each manufacturing operation.

In order to clearly depict the differences between the two processes, it is important to show it in the comparative review of the differences between the most significant features before and after performing the reengineering of the manufacturing process of refurbishing.

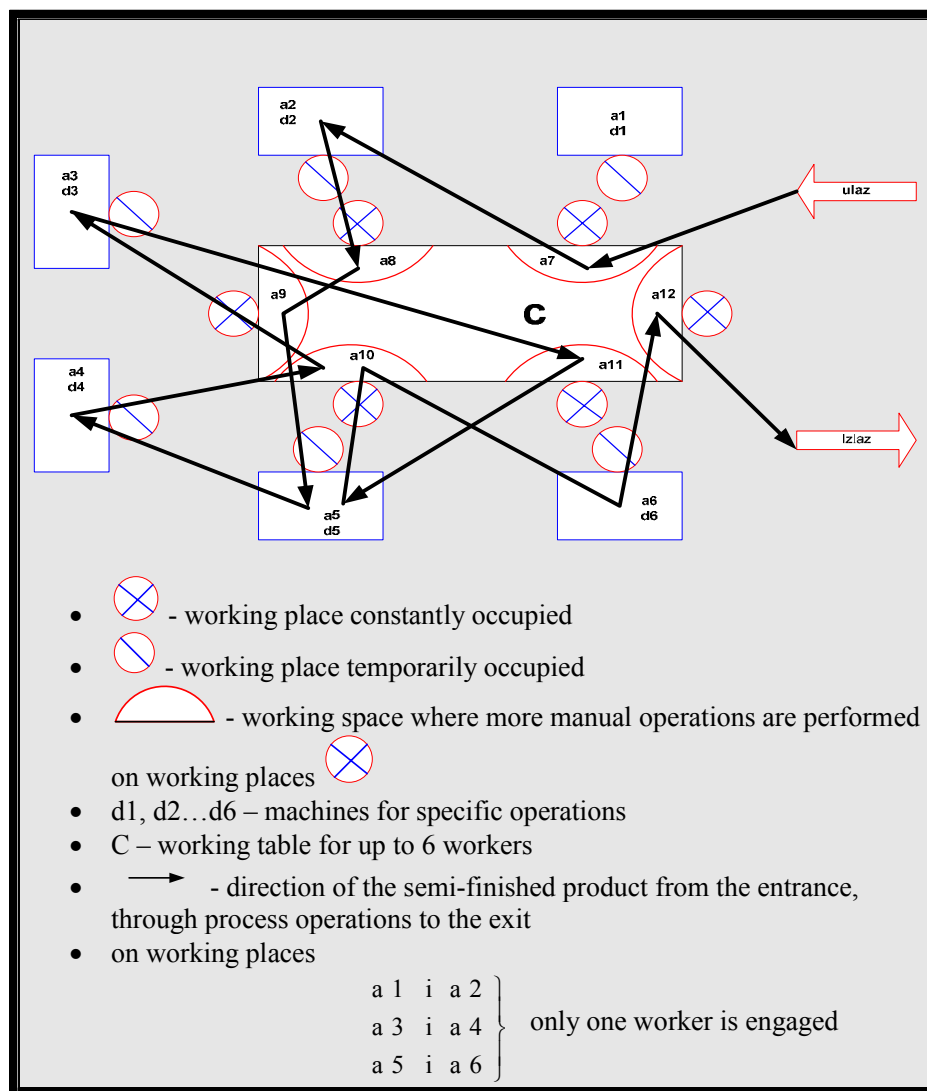


Figure 2: Review of the refurbishing process after the reengineering

From the facts mentioned above, it can be concluded that this kind of business process reengineering reduced the duration of the process itself, seen in the increased productivity of the workers. Furthermore, it is obvious that the costs are reduced as well, and there is a big saving in machine engaged for the new process.

**Table 1.** Comparative review of the characteristics before and after reengineering of the manufacturing process of refurbishing

	<b>FEATURES BEFORE REENGINEERING</b>	<b>FEATURES AFTER REENGINEERING</b>
<b>Number of workers engaged in the process</b>	Big, up to 50	Relatively small, up to 12
<b>Number of machines engaged in the process</b>	Big, up to 40	Relatively small, up to 6
<b>Production properties</b>	Mass production presented by big series	Production of the medium and small series
<b>Business facilities' surface</b>	Medium sized halls for up to 50 places 12 x 20	Small spaces, surface 5 x 10
<b>Average number of daily produced pair per worker</b>	10-15	12-18
<b>Changeability of the workers in manufacturing operations</b>	Very rare, only with simpler operations	There are all-purpose workers qualified for many process operations
<b>Work on more machines</b>	Not usual	Obligatory
<b>Maintenance, greasing of the machines</b>	Work performed by support team consisting of the employed craftsmen	Work performed by machine workers, outsourcing workers hired only for special purposes
<b>Adaptability of the manufacturing program to often changes</b>	Small, time-consuming and expensive	Big, quick and cheap
<b>Type of production and labor division</b>	Industrial, acc.to Adam Smith, one machine, one worker, one operation	New industrial, one worker, more machines, more operations

It is significant to determine the values of the common parameter improvement, after the reengineering. Based on the facts (table 2), the conclusions are as follows:

**Table 2.** Review of the improved parameters after the reengineering of the refurbishing process

<b>Reducing of the process duration</b>	<b>25%</b>
<b>Reducing of production costs</b>	<b>30%</b>
<b>Reducing the number of <i>machines</i> or tools used in the process</b>	<b>65%</b>
<b>Process profitability increase</b>	<b>25%</b>

### 3. CONCLUSIONS

Based on this case study, it can be concluded that the business process reengineering in modern technology control and in the new technological-economical paradigm is one of the very useful management techniques helping the company to adjust to the new business challenges. It can change the process in the way as to make it the right answer to the abundance of technological changes that are characteristic for the modern world business. Reengineering is a good weapon for successful managers who take their companies successfully through technological changes and adjust them to the new situations. It is clear that the process of sewing the uppers is adjusted to the new business requirements, costumers' wishes and fulfilled all the requirements of the new technological-economical paradigm. This leads to the conclusion that also in the future the business process reengineering will be a great management technique used by successful companies and their managers in the strategic and technological planning and business conduct.

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## **MANAGER COMPETENCE ANALYSIS – SIGNS OF SUCCESS IN ECONOMY**

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***Summary:** Analysis of competence and influence of managers on the development of competence in the performance of the economy in the post-war Yugoslavia were done not on scientific basis.. Work on selecting staff for the management of economic entities were mainly directed to the party eligibility, and the "professionalism above politics" was observed as decadent "prowest Politics backgoing to all that the" achievements of socialist revolution " achieved from people who accepted the self as a model the overall division of responsibilities for mostly the wrong decision with the Director of Lenta national hero.*

*The aim of this paper is to point out on the issue of competence of the manager of Serbia and their influence on business performance*

*Keywords: competence, managers, success*

The process of introducing the scientific framework, management in the territory of former Yugoslavia was at its highest peak in the '70 of the twentieth century, and his intense popular only in the '90. Due to its late entry, it is still very current issue, and accepted rules and principles of the developed countries, subject to adjustment of the conditions of our unperfected market.

This issue has great significance because, although Serbia is entered in the process of democratization of the market, we still carry burden and habits from the previous decades of nonscientific management. Management competences of managers directly affect the profitability and efficiency, as economic and administrative sectors. The arrival of foreign companies on the Serbian market, changing the ownership structure of domestic companies and the formation of some of us "new economic entities There were various theories about the competences of managers, but that is rarely included in the analysis of the historical heritage of the Serbian director and less mentality of Serbian workers.

Knowing these two factors, we come to the conclusion that the analysis of the competence of managers can not blindly follow the rules in the world generally and principles, but we need to build your own model, taking into account of the psychological component of mentality of people and historical heritage which is a very important factor (in all economic civilizations this factor had an important role - Japan, USA, Western Europe ...).

In order to a deeper look at the competence of managers, it is not enough to observe them being, the whole and indivisible. It is necessary to include the whole management environment, as well as internal factors of each individual manager.

Management environment is very important factor in evaluating the performance of managerial staff, but it is also relevant that the constant in a given time and is not subject to rapid change and adaptation. When you say, do not think only of the technical environment, which is needed really long time to make changes, but also the human factor, which should be affected in order to create a desired change. To do all that was needed was action synergy of all factors, but in the first place and most of the managers who must be the initiators and participants in all stages of all processes.

To be on the correct way rated managerial competence, we need to get on the analytical structure and consider factors that make a manager. In the first place, the performance in the implementation of management and leadership means that the holders of management functions must have certain personal competence. Personal competencies are dependent on two factors, which are crucial elements in creating the assessment manager. The first factor is the mental competence, the crucial influence on the development of other factors, educational

competence, while the reverse process is more sensible to impact. Mental factor is fairly independent, while the educational factor very dependent variables. Mental competence to express their independence from the fact that the mentally similar circuit basis for acquiring knowledge, and not vice versa.

When we speak about the mental competence, should be emphasized that it is characterized by certain psychological traits. The main characteristics of persons engaged in managerial jobs, according to the logical comparing claims a number of distinguished scientists from the field, we can point out the following twelve:

1. Ability of problem solving is a key personality traits and it is, in fact, the popular term for elegance. This is a feature that depends on the inheriting, birthly claimed factors, which are developed through life and shaping.
2. Readiness for business risks impossible prediction stems from the results of operations and revenue. In practice, the managers can meet with different levels of their own readiness for business risks and range from none to extreme.
3. Competitive business orientation is reflected in the fact that the manager of people in the vicinity is considered for potential competitors to build your business and social appearances. That's why it is motivated to the elections for the best position to compete with others for success. Thus prepared manager is able to go on with failures and to deliver them from experience that even greater readiness and power take over in goal achievement.
4. Confidence in the shares is a specific dimension of personality Manager, which is complementary to competitive readiness. This factor is associated with personal confidence in the validity of issued conclusions and decisions, both in work and in personal life.
5. Adaptability of business changes allows managers to quickly understand the changes that were incurred due to changed business conditions and demands of the market changed. This factor is very important because today's economy is exposed to constant and rapid change, and the manager needs to adjust how your business can not be lost step with the competition. Moreover, leading ready managers try and often succeed, and that certain innovations cause more or less changes in the business, which reflects the market and business results.
6. The ability to communicate the power manager to achieve contacts with entities within the company and from the environment and that the contacts get important information for management and solving business problems. Level of the degree of success in communication, the manager of its influence on the achievement of business results.
7. Reality in the assessment of the phenomenon is a feature on which managers respond to the situation in your business and respect the environment. The rating may be subjective or objective. For successful business, interval estimation in the new situation must be closer to objective, although some theorists argue the thesis that the presentiment as a characteristic of subjective evaluation also an important factor in responding to the situation.
8. Orientation to the future is an important personal characteristic of the modern manager. It shows that very few managers are interested in the past, that it was present only in the framework which develops new business opportunities that will make your money and effort to the business prosperity and increase capital. This characteristic is manifested great willingness to sacrifice and risk achieving the desired future.
9. Identification of business opportunities is the most featured manager which is different from other people and other professions. Manager is always focused on searching profit of profitable business opportunities, no matter where they come. He listens, searches and studies notes that the other can not. Not arranged on a new product, he asked for the weight of ideas of other people. This feature some theorists believe to be the core of the management call.
10. Emphasized working commitment is reflected in the fact that the manager fully facing your business, sacrificing in the many personal satisfaction. On dreams, breathes and consumed your business, both in working hours, and outside it. Often managerial workweek is 7 days and 70 to 80 working hours. From this we can conclude that managers truly characterized by dedication to work and persistence.
11. Tendency to middle business manager is striving to include business and other employees and to maintain good contact with those who contribute to the development of business. Manager is aware that I can not keep your business and that without help, ideas and knowledge of others can not stand. His role is to stimulate, generate and realize the business through employees.
12. Resistance to stress is manifested by the time manager is ready to possible problems and obstacles in the business and to accept them without panic and excitement, but to all your available resources direct to their solution. The lack of these properties, in the permanent business turbulence, leads to downgrading health and to the business behind, even to the collapse.

When it comes to educational competencies of the manager, have pointed out that it is characterized by a particular business knowledge that helps managers to achieve their management and leadership tasks. This knowledge can be relatively group in the following 12 categories:

1. Knowledge of economic legislation is required managers to ensure your business can implement in the framework of certain economic regulations. On the basis of knowledge of economic regulation, the manager decides how to organize the company and how it will lead to your business. Ignorance of this area it can lead to a

situation to suffer certain repercussive in the form of prohibition, restrictions, penalties and even criminal liability.

2. Knowledge of the structure and functioning of economic system where the governor belongs to, is for him a very important role, not only from the aspect of the current business, but also from the standpoint of the business. Over the knowledge he recognizes possible business partners, customers and suppliers, and acquires important information about the formation, maintenance or pre orientation own business.

3. Modern manager must necessarily have a general knowledge in the area of the market, especially in the sphere of their own force market sales and purchases. In today's conditions of extreme market volatility, the legality of his ignorance leads to a bad position, and consequently poor business results.

4. Knowledge of market competition is the factor that manager must be well to know, and whose action must be carefully and continuously monitor. The implementation of this factor in their business manager comparison through stabilization and increases its own advantages.

5. Manager must have at least basic knowledge in the field of marketing techniques that brings them through the sales of their products; keep the existing and acquired new customers. Complementation with other skills, knowledge of marketing techniques leads to improvements in business and more profit.

6. Content knowledge in business economics is primarily related to the field of income and expenditure. This knowledge has an important function in any business. Ignorance structure of income and expenditure manager keeps in a dark business from which you can see what the effects of his work.

7. Knowledge in the field of applied technology is in fact knowledge of the technological process of their unity of action through the employees and equipment. This knowledge is necessary to control and guide the development of the applied process.

8. Knowledge services service managers to solve problems that, because of division of labor are not in a position I have to deal with. These services provide the necessary logistics and the business may be technical and intellectual character.

9. Knowledge of business support manager to hire adequate staff for the implementation of tasks and assignments. In practice, using different models of engagement of employees, which are particularly important in the relations between management and other functions.

10. Modern manager must have knowledge in the field of human resources and skills of employees in order to embed the company's business. Treatment policy to employees directly influences the effects and business development. A well-balanced relation between manager-employees is a key condition for the success of the company.

11. Business information includes the area of introduction and use of information systems and technologies that facilitate the achievement of current business and contribute to the decision adequate business decisions. Manager must have knowledge in this area and must send employees on its use in order to adequately and in time made decisions in favor of your business.

12. Knowledge in the field of business administration are associated with information systems because make his ground. Manager needs to know which documents and information that are necessary to quality a decision about the company and must know how to procedures related to these documents, whether they are internal or external. Inadequate and disorderly behavior according to documentation leads to chaos and disorganization in the business.

On the basis of previously exposed to factors, adequate testing, it is possible that the assessment of competence of particular persons to perform management functions. However, before you go to concretely measure the competence of managers, it is necessary to consider the question and the level of managerial and technical knowledge. The technical knowledge is knowledge in the field in which the manager performs its tasks.

Relationship management and technical knowledge is conditioned by the hierarchical level that the manager in the organization. Regarding this it should be noted that education for managers is not a decisive factor for all levels of management, but that it is directly proportional to the level and responsibilities of managers, which naturally recessive and a higher level in making business decisions, the management education needful, and vice versa. At the lower levels of managerial responsibility, moreover, do not need formal management education, but the required knowledge about the management of acquired experience. Explanation of managerial and technical knowledge can go with the lowest level management jobs, where the technical knowledge most. In this group are managers who are directly related to the production process: processors, salt, the heads of shifts, etc.. Around management knowledge they need to have is very low, ranging in numbers up to 10%. Level of technical knowledge is moving over 90%. At this level managers from their knowledge management based on experience and informal education, and refers mainly to the management of technological processes, and only slightly on the management of human resources. Level of responsibility of managers at this level is reduced to the execution of production tasks and reporting on them.

Middle level management has a higher level of responsibility and therefore must have a higher level of management knowledge. However, the level of technical knowledge must remain high. At this level managers must have approximately the same level of knowledge in both areas. Functions carried out by managers in the

middle level of the head of registration, the Head of the working units, deputy director for the sector, etc.. Basic knowledge to them in technical areas, and managerial knowledge acquired through formal or informal employment relations. Managers at this level make production plans for a short period of time, and plan the necessary resources to carry out these plans.

At the highest level of the managers who make strategic plans that are related to the development of the company, so their level of knowledge management must be at the highest level. However, it is not enough to have only managerial knowledge, but must have knowledge of technological processes that take place in the company. The level ranges up to 10%, while the level of knowledge management ranges over 90%. Managers at this level of knowledge acquired formal education in high schools for the education of business managers, and technical knowledge to know mainly through the work. We have to emphasize that today there are business schools that educate managers to manage in certain areas where the economy and acquire a certain technical knowledge: management in health care, industry, traffic.

Now, when we determine the required level of management knowledge to perform certain management tasks, we can access the performance evaluation of competencies specific person who is engaged in managerial work. For this purpose, for easier viewing of conjunctive used spreadsheet has pondered components of psychological and educational competence of individuals. We have to emphasize that this spreadsheet is for the average business conditions, which approximately corresponds to conditions in the medium developed countries, which Serbia has catches connector.

In connection with this chart presentation should be emphasized that the sum of different components to the extent that the manager.

Managers can be roughly divided in:

- Independent - the minimum number of points from the mental component is 40, while from the 35 educational,
- Joined - psychological components 35 min, and 30 educational,
- Professional - 40 psychological, educational 35

In the course of performing manager functions, managers can improve the score points in their competence [9]. Educational competence may maximize, while the mental component can increase about 20%.

With considering the current state of managerial competence in Serbia, it is something more to say gaining competence, and to the psychological and educational aspects, and the general current situation in these areas.

According to contemporary theory of managerial psychology [10], one gets the birth of managerial characteristics and their development in social srđini. General state of mental competence of our active and potential managers in the basis is not known, because they have this in their education are not studied, nor are certain tests measure their psychological characteristics. Therefore, most of them and do not know the real state of their psychological characteristics and how that may affect them. This condition and contribute to the education functions of professional orientation and selection. This problem is mainly belongs to the clinical psychology where generally determine the personal characteristics necessary for successfully dealing with management, with which managers should be aware of in order to protect their psychological characteristics of ruination. The task of clinical psychology in the education of managers in the course of their development should be reduced to a few phase activities:

- Identify personal characteristics by demands management of the business, especially those who are insufficiently developed,
- Start measuring the properties of adequate testing, Implementation of activities in raising proper using of methods and techniques,
- End measuring, compare the situation and point out ways to maintain improved condition.

In Serbia, the largest number of active and potential managers subjectively assesses their personal characteristics, the appreciations that are adequate enough. Therefore, the required knowledge in managerial psychology, individuals should be to achieve through educational system, which in the first place should worry the state, through institutions that are engaged in applied managerial psychology.

As regards the educational competence of managers, it is acquired through the process of acquiring the necessary knowledge, education and self. It should be noted that in developed countries, the basic content management is studying in the final primary and secondary schools, and professional management is the regular studies and postgraduate studies. However, formal management education in the rate of follows more complex non-formal education, whose task is to strengthen business competence.

State of education for managers in Serbia is behind the developed world [11]. Basic facilities management is studying in a very small number of secondary schools [12], while the majority of students with the content of luck the first time only when the start their undergraduate studies. Colleges and high schools in the last decade carefully and very partially introduce teaching courses in the area of management where the non-critical downloaded the programs and scientific literature, with only theoretical interpretation. In informal education situation is quite the same.

**Table 1:** Competence of persons required for successfully dealing with management [8]

Components of competence	Elements of competence	Required points (1-5)		
		Independent Manager	Associated undertaking	Professional Manager
Mental competence	Ability to solve problems	3-5	3-5	3-5
	Readiness of the business risk	4-5	3-5	3-5
	Identification of business opportunities	4-5	3-5	4-5
	Confidence in the business actions	3-5	3-5	3-5
	Adaptation to business changes	3-5	3-5	3-5
	Ability of communication	3-5	3-5	3-5
	Reality in the assessment of the phenomenon	3-5	2-5	3-5
	Orientation towards the future	3-5	3-5	3-5
	Competitive business spirit	4-5	3-5	4-5
	Emphasized commitment to working	3-5	3-5	3-5
	Tendency to business cooperation	3-5	3-5	4-5
	Resistance to stress	4-5	3-5	4-5
	Σ	40-60	35-60	40-60
Educational competence	Knowledge of economic legislation	3-5	2-5	3-5
	Knowledge of the economic system	3-5	2-5	3-5
	Knowledge of market	3-5	3-5	3-5
	Knowledge of market competition	3-5	3-5	3-5
	Knowledge of marketing techniques	3-5	2-5	3-5
	Knowledge of business economy	3-5	3-5	3-5
	Knowledge of applied technology	3-5	2-5	3-5
	Knowledge from services	3-5	2-5	3-5
	Knowledge of business	3-5	3-5	3-5
	Knowledge of human resources	3-5	3-5	3-5
	Knowledge of business informatics	3-5	3-5	3-5
	Knowledge in business administration	2-5	2-5	2-5
	Σ	35-60	30-60	35-60

Looking in the general situation in these areas, we can not and do not notice that the state has only slightly concerned with the improvement, and that is a reflection of the competence of managers in large behind and below the required level. Conditions in Serbia are harder than in the developed countries and therefore require a higher level of competence of managers, which in the absence of educational components depends to a greater extent on the mental, along with the same gaining manager experience.

Managerial competence has a very strong impact on the business success of each economic entity, and the debate on the development and improvement of managerial psychology and affirmation of management education as a priority task of the state of Serbia.

No, go back to models measuring managerial competencies, in order to indicate the importance of and ways to influence the improvement of the same.

Until now, it was used a model of measuring the level of competence manager match secondary economy. However, with changes to these conditions, the need and level of competence, so that we can say that there are serious differences between the developed and underdeveloped countries. Between the level of economic conditions and managerial competence of the government reversed ratio. The economic conditions are unfavorable and risky, higher the level of competence required, and vice versa. In stable economic conditions, where the majority of regulations are simplified and constant, with a lower level of competence. It is necessary to note that the educational factor that by largest part makes the difference in the necessary level of competence. This is because in the developed economies system services service that managers can rely on.

Differentiation necessary competence to carry out management tasks, it is necessary to conduct and to the activities which the manager. In terms of the complexity of business, there are important differences between production and services. Necessary level of competence in service activities is higher for about 10% in relation to the production. The reason for this obvious difference is that the services sector relies on the production and competence that are necessary for the sector must be increased in order to escape to meet all the demanding consumers and rapid change in both sectors.

If considered from the aspect of management style, and that we see important differences that arise from the level of competence of the manager. Of course, the style of management is by the kind of organizational

structure and strategy, as well as numerous and carrier hierarchy and control functions. We can see three basic style of management: formal, mentoring and cooperative.

The formal style is characterized by a pronounced separation manager with respect to the involved human resources, with communication between them takes place through written information through the account and reports. This style of management is used by managers with lower managerial competence and generally leads to stagnation.

Mentoring style is characterized by excessive power of manager over employees. This style usually carried out managers who exaggerating their function with a level of managerial competence are not enough. This style of practice not only to affect positive, but is extremely de motivation for other employees.

Cooperative style is reduced to the balanced manager relating to employees. This style manifests managers with a high level of managerial competence and only on leads to growth and development.

Finally, a partial analysis and research done for the purposes of certain state authorities can be noted that Serbia has no far-quality management. Serbian Management is not educated for the management of business systems. He hastily trained beside the bureaucratic management of people. While the whole world of management as a profession in Serbia, he considered the function. Serbia is a rare country in the world where the management can engage in any occupation who, from the master KV to doctors of science (where the other much less). Moral-political suitability is still a very important factor in the selection of directors in public companies, which would be the way to provide a political privileges option.

All these come to the conclusion that the management in Serbia un professionalized, or set to a rather amateur scientific basis. The necessity of high-ranking business schools for the education of managers does not even need explanation. In Serbia, there are number of private and state schools that can be said to have links with education for managers. By ratings UNDP and OECD, education for managers is just in rising. Interest is but the results are still in a backlog. Data is the rating that the government is determined in the creation of curricula and the focus switched to management in education instead of education for managers.

Therefore, not entering further into the debate on the strategy of education for managers, because it is a very broad and very demanding area, return to the start of this paper and repeat the strategy that made the experience of developed countries may be accepted in Serbia, by using the historical heritage and mentality of people, especially when it comes to education for managers and assessing the level of managerial competence.

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## **RIVER INFORMATION SERVICE – PRECONDITION TO TRAFFIC EFFICIENCY MANAGEMENT ON THE RIVERS OF EUROPE**

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***Summary:** The paper shows the importance of the river information service (RIS) as a backup in management process in river transport in Europe. There are presented the objectives of the transport development in European union which are oriented towards environment friendly modes of passenger and freight transport. Great attention was paid to transport development in inland waterways, that has advantages in compares to the road, rail and air traffic. The aim of the paper is to meet the managers in transport with the necessity of new technologies in transport that have effect on quality of decision.*

***Key words:** river information service, transport management, river transport*

### **1. INTRODUCTION**

The integration of European countries in the European Union, globalization market, increase the importance of traffic services and the interests of individual countries have the need to define the basic objectives of a unified transportation policy at the level of the EU that would ensure high efficiency in the development of traffic primarily from the aspect of technology, technology infrastructure and interoperability. One of the aims of the development of transport in Europe is the modernization of technology used in the process of traffic on inland waterways, which will provide more effective support logistics activities in the rivers of Europe.

### **2. BASIC TENDENCIES IN DEVELOPMENT OF EUROPEAN UNION TRAFFIC POLICY**

Global objectives of social development in countries, especially Western countries, including the free movement of people and goods, environmental protection, preservation of limited resources and increase of the traffic safety. Within these global goals are building a development strategy of the traffic on the national and international level, which have clearly focused and that are socially acceptable.

By its essence and the role of transport is one of the key elements of integration economy, space and population, and the success of the single market in the modern European integration processes. It contributes to the achievement of its two basic goals: free movement of people and free movement of goods [11]. In such a determination since 1991 the start process of building a unified transport policy of the EU, with the aim to ensure the development of Pan-European transport network, which will allow a permanent mobility of persons and goods under the best possible conditions and with: the social aspects, environmental aspects and aspects of security.

Due to the recent EU expansion, which has joined the countries of Central and Eastern Europe, there was a drastic increase in demand for cargo transport. This tendency is especially influenced the growth of land transport, causing the congestion and the great burden primarily on the European roads.

In order to ease consideration of growth of transport in the EU in Table 1 are represented by the annual rate of growth of GDP, passenger and cargo transport for the period 1995 - 2005. On the table are clearly can see that the growth of cargo transport, which is the average annual growth rate was 2.8%, was conditioned with economic growth, expressed through the average annual growth rate of 2.3%.

**Table 1.** Year rates of GBP growth, passenger and cargo transport in EU-25 [12]

	1995 - 2005	2004 - 2005
<b>BDP</b>	<b>2,3%</b>	<b>1,7%</b>
<b>Passenger transport pkm</b>	<b>1,8%</b>	<b>1,8%</b>
<b>Cargo transport tkm</b>	<b>2,8%</b>	<b>2,2%</b>

Such a trend growth of transport in the EU led to a series of negative consequences, which are related to the increase in delays, congestion, the appearance of noise, endangering the environment and safety in transportation. So despite the fact that transport contributes to economic development, it also contributes to the creation and social costs related to the detriment of the snow environment, which amounts to 1.1% of GDP [13].

### 3. HISTORICAL DEVELOPMENT OF EUROPEAN UNION TRAFFIC POLICY

Historically speaking, the development of transport policy of the EU share in the two periods:

- The first period from 1991 to 2000., Including the EU White Paper - White Paper on Common Transport Policy in which the elements are defined-attributes "new" transportation system of the EU on the basis of "three" principles ( "Three I" - interconnectivity, intermodality , interoperability) [14], with the aim of overcoming Undesired "modal split" with the dominance of road traffic and opening the possibility for the development of transportation system in the spirit of sustainable development, and
- The second period 2001-2010 defined in the White Book "European transport policy for 2010: time for decision."

EU transport policy for the period to 2000. defined the planned arrangement of infrastructure systems Pan-European corridor intermodalnih as integral elements of transportation times, introduced the principle of free access to the network under the same conditions for all participants, as well as the principle of payment of all costs for all participants, equipment and means of unification, standardization of quality of service with accelerated the introduction of telematic subsystem support.

EU Council and European Parliament have been July 1996 determine the "Community guidelines on the development of Pan-European transport network." Building such a network in the entire territory of Europe was for a special goal to ensure sustainable mobility, however, projects that would ensure the establishment of the transportation network, which will be economically and socially connect European continent ran much more slowly than expected. One of the reasons, which has slowed down development of Pan-European networks related to the financial aspect, since the investment in the period 1996 - 1997 amounted to 38 billion euros, while the full completion of the network, which is expected in 2010., the estimated need for financial assets of 400 billion [15].

With the aim to overcome the problems, and find more efficient ways for the implementation of projects, the European Commission in October 2001. made the first revision of "Guidelines on the Community Development Pan-European transport network" in the document called "White Book - European transport policy for 2010 the time for decision, in which prominent challenges that confronted European transport system and identified the basic objectives of traffic. White Book for 2010 analyzed the current situation in the field of transport, is characterized by uneven development of the road in relation to the other branches of traffic, which inevitably lead to escalation and negative aspects expressed through crowded traffic, pollution of the environment and increase the number of victims.

Unlike the previous period (1991 - 2000) When the development of traffic access unscientific, since it is the only respected criterion demand, the adoption of the new White books made turning point in the EU transport policy, which is focused towards the goal to build an integrated transport system, in which different types of complementary traffic.

Determination of the common long-term objectives of EU transport policy is based on trying to be planned at the level of the system, taking into account the intermodality. These goals can be generic terms in the following way [16]: Development of Trans-European transport network,

- determining the right price in the traffic,
- Environmental Protection,
- Security in the traffic,
- Social responsibility,
- Strengthening the internal market,
- Strengthening external dimensions of the market.



#### **4. IMPORTANCE OF TRAFFIC DEVELOPMENT ON RIVERS OF EUROPE**

Listed appearances have contributed to the definition of European transport policy approaches from different aspects, which will mean that the increase in demand for transportation not said building new infrastructure, but also optimizes the transportation system in order to meet demand on the one hand and match with the principle of sustainable development on the other side. So has developed a need for building a modern transportation system that will respect the sustainable development in the economic, social and environmental terms.

Bearing in mind the European Commission has recognized the great potential of navigation on the inland water ways, as accessible, cost-effective, safe and environmentally oriented alternative land traffic. This approach of European Ministers of Transport came to express and Rotterdam conference, held in 2001 when the basic objectives of prominent [17]:

- the development of the traffic on the river roads and the growth of its share in the transport of goods;
- improved safety, efficiency and sustainable development of the traffic on the rivers;
- creating a transparent and integrated Pan - European market in the inland water ways, based on the principles of reciprocity, freedom of navigation, competition and equal treatment of all participants in the traffic.

In order to use the great potential river traffic, which is one of the main objectives of European transport policy, it is necessary to make the modernization of navigation on the river roads and implementation of modern information and communication technologies that will connect partners from the public and the private sector and thus enable the exchange of information along the entire transport chain.

#### **5. IMPORTANCE OF RIVER INFORMATION SERVICE AS A SUPPORT IN THE PROCESS OF TRAFFIC MANAGEMENT**

Applying modern transportation technology, the adoption of uniform standards and procedures, logistical support is defined (transportation means, equipment, terminals, storage, and organization of work, security measures, the choice high educated staff and others). As a basis for the implementation of work in ports, one of the most important logistic transportation systems in the process of river transport, it is necessary equipment as required in addition to classical loading means, also possession of specialized (multimodal) terminal.

The development of logistics centers is the basis for the establishment of links between all forms of transport, because the concentration in one place can different types of goods, coordination and cooperation of the participants in the transport.

Special place and importance in the functioning of logistics in the water transport have information systems, which should be based on information related to [18]:

- physical characteristics of sailing times and his environment (hydrological, morphological, gerological, quality, mode of ice, etc..)
- objects in the river while providing navigation conditions and facilities that may be an obstacle navigation;
- information about river ports, piers, temporary loading places, their infrastructure (features, capacity, facilities, equipment, services, etc..), And
- the basic characteristics of fleet (types of vessels, facilities, technical characteristics, forms of exploitation, etc..).

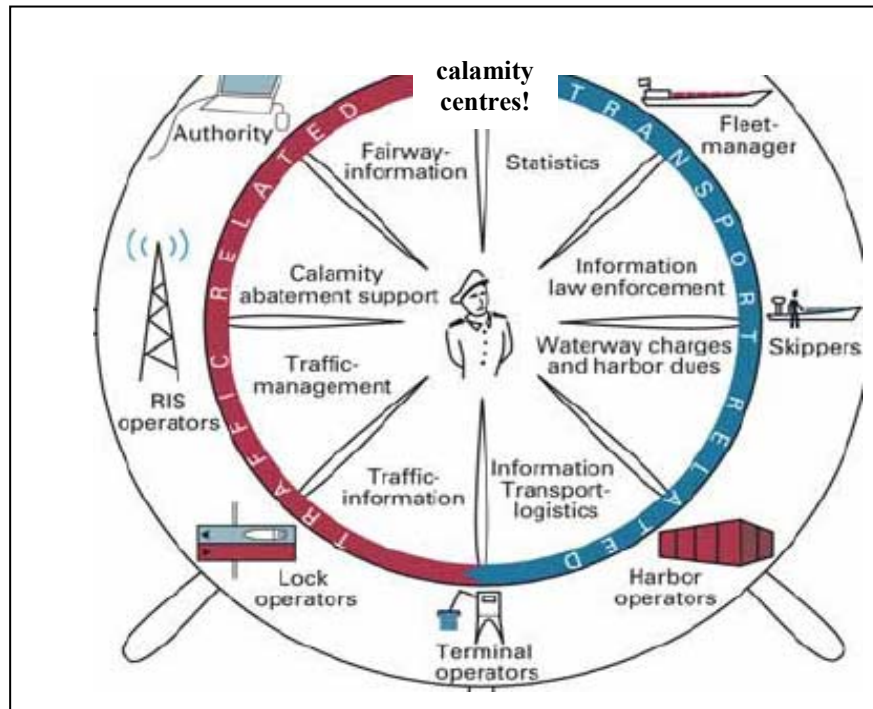
Seeing the importance of information technology, whose implementation contributes to a greater attractiveness and competitiveness of river traffic, the EU in 1998 which began the development of the concept of river information service - RIS. The importance of this concept is primarily that provides harmonized information services that support the traffic and transport management on inland waterways, allowing the same time, good connections with other modes of transport.

In fact, modern logistics management requires timely and accurate information on all participants and resources in the transport chain, which still reflects the efficiency and effectiveness of organizational and operational processes.

In accordance with the above defined the basic objectives that need to be achieved by applying a RIS. These are [19]:

- increase the traffic safety on the inland water ways, the ports and the sailing route, through the exchange of information on local and regional level, which contributes to better tactic and strategic control;
- greater efficiency of navigation, based on the optimal management of resources along the transport chain, which is achieved by the exchange of information between ships, dams and bridges, terminals and ports;
- better use of internal water ways, through information on the sailing route;
- protection of the environment, the timely response in case of accidents.

The implementation of RIS and participants in the river traffic that gives access to a large amount of information and data related to the sailing conditions on the road, the current legal framework of individual countries, statistics, services provided by the port, the order of crossing vessels over translator and under bridges, characteristics of the vessel and their cargo, etc..



**Figure 1.** Ways of RIS functioning [23]

On Figure 1 explains how river information service, and illustrated the process of exchange of information between the participants in the traffic on inland waterways, such as fleet managers, dams, ports and terminals, government agencies and people in the boats.

River Information Services consists of multiple services, which support a variety of transportation operations, such as making the order of navigation and design implementation of the activities in the ports and dams, as well as different levels of traffic management in the way of allowing the adoption of quality decisions.

Water information systems are classified to:

River information systems that give support to the traffic [20]:– Information service on the sailing route - Fairway Information– Service (FIS), which provides geographical, hydrological and administrative data that are fleet managers and people who manage the boat needed to be able to adequately plan, organize and control navigation. Considering that in this way provide the necessary information about the infrastructure sailing times, and not on the movement of vessels, information is moving in one direction - from the coast to the boat. Applying the river information service enabled the presentation of information on the so-called. Electronic maps, as well as a standardized way of reporting, in which the captain and crew the ship can inform about the conditions on the road in 11 languages [21].

Traffic information service - Traffic Information Service– (TIS), which provides information to support tactical and strategic level of traffic management. Information relating to the position, speed and movement of the ship allows tactic level management, i.e. captain to quickly bring decisions and document the decision in connection with the navigation.

Traffic Management (TM) - Traffic Management Service, which– provides strategic level management versatile View traffic situation, which includes a relatively large area sailing times. In this way, provide information that is necessary for planning and control of navigation, such as a plan of navigation of ships, transport of dangerous substances, docking of ships in the harbor and the like.

Calamity abatement support (CAS) - The service that provides support to reduce accidents.–

River information services that support the transport of:

Information for transport logistics (itl) - Information service provides transport logistics information support [22]:–

- planning navigation - RIS provides information on conditions on the road, on the basis of which fleet managers and people in the boats can choose the optimal time and determine the expected time of arrival of the ship;
- management of transport - transportation managers use the information service in order to ease the monitoring and control of transport of goods, which gives them the opportunity to in the event of any problems quickly odreaguju and thus ensure the smooth transport of goods to destinations;

- managing operations in the ports and terminals - RIS provides information about the expected time of arrival of ships, which enabled an adequate planning of resources needed for development operations in the terminal. In this way, enabled the optimal use of capacity in the ports and terminals, and therefore reduces the waiting time and boats, as the RIS through a feedback coming and to management and fleet of ships;
- fleet management and cargo - the management of fleet available information about the position of the ship, board cargo and during his transport, which enabled the effective planning and organizing of new transport cargo.

Information for law enforcement (ILE) - Information systems of laws that apply– Statistics (ST) - Statistics– Waterway charges and harbor dues (CHD) - Information service– that provides information on pricing, use the port and waterways.

River information service is based on modern information technology and telecommunication infrastructure, and exchange of information that is on the way this place comply with the basic quality standards. However, to one such service provided by the level of competitiveness of river traffic, it is necessary to work on the modernization and modernization, and it is necessary to constantly keep pace with the time of discovery and technological innovation in the constantly monitor the area.

Key RIS-technological innovations, which were introduced in the water sector internal roads during the last ten years, are:

- Electronic navigation charts (Inlan Navigational Charts - IENC);
- European standards for navigation in the rivers (European standard-Inland ECDIS) that are based on the ECDIS standards for maritime transport;
- Internet applications for information management of ships in 11 languages;
- Electronic systems for reporting on the characteristics of vessels (characteristics of the ship and cargo)
- Technology for tracking ships such as the Automatic Identification System (AIS), for automatic reporting of position and movement of the ship, as well as other relevant data related to security;
- Radar systems with electronic cards, which are used for navigation and traffic control;
- Applications for planning time navigation;
- Applications for optimal fuel consumption.

Development of RIS to the European waterways transport Serbian institutions "Plovput" and "Danube Project Center intensively monitor and have the knowledge and capacity to service form and on inland waterways Serbia, on the basis of a European Commission project.

## 6. CONCLUSION

Market economic system, which requires economical, rentable and efficient development of the overall economy, is directly related to modernization of traffic. Application of new technology in transportation, allows the introduction of prognosis, simulation and other models in the planning and management of navigation, as well as the monitoring of commodity flows, especially in the rational and the functioning of ports and port.

One of the most important technological innovations that support the process of making management decisions in the river traffic is the River information RIS service, which is an important sector for the European internal water ways. In this way, with the help of a water-RIS roads can be connected with the latest development of logistics capabilities, which provides reliable and predictable supply chain.

Our country is one of the few European countries that are not adequately developed and applied modern technology and transport systems, which makes it important for inclusion in a unique European transport system.

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## DEVELOPMENT OF MEDITERRANEAN CRUISE PORTS

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**Summary:** *This paper provides an overview of the development of Mediterranean cruise ports. Also, the strategic analysis regarding the latest development of mega cruise ships, deployment patterns, and its implications in terms of shipping structure, impact on port authorities, infrastructure requirements and cruise terminal operational efficiency is given in this paper.*

**Keywords:** *Mediterranean cruise ports, Terminal characteristics, Port productivity*

### 1. INTRODUCTION

This paper provides an overview of the development of Mediterranean cruise ports. In the port area, there is a trend towards larger cruise ships, meaning that more passengers need to be moved between the ships and shore destination. These transfers should be fast but still comfortable and safe for both passengers and crew. The strategic analysis regarding the latest development of Mediterranean cruise ports and its implications in terms of cruise industry structure is given in this paper. During the development of cruise ports, the most important characteristics that influence its growth have been the cruise shipping networks. These networks are particularly important for the fleet of cruise ships.

The crucial cruise port management problem is optimizing processes in relation to ship and passenger's service and balance between ship to shore terminal link who request quick service and economical use of allocated resources. Consequently, this paper gives an overview of cruise ship and Mediterranean ports development.

According to these requirements, cruise ports are constrained to implement strategies and policies which enables introduction of adequate service. That means larger berths, dredging waterways and harbors to a deeper draft for the larger cruise ships, and building larger passenger terminals for the stay of passengers with faster and more reliable systems to handled passengers, providing or arranging road and rail access to the port facilities.

Section 2 describes and analysis Mediterranean cruise ports. Section 3 focuses on the potential of Mediterranean cruise port while Section 4 presents major characteristics and productivity of leading cruise ports. Finally, we draw some conclusions in Section 5.

### 2. MEDITERRANEAN CRUISE PORT

The Mediterranean basin is extended to over 2,000 miles from Suez and the Black Sea to Gibraltar. It is climatically favourable region and offers diversity and superabundance of historical and modern references. This region, which accommodates 13% all cruises taken worldwide, is the second world cruising pole following the Caribbean. The number of destination choices has also increased offering passenger's overnight stops and highly differentiated product and the region is not considered anymore as a seasonal destination that is worth to be visited only a period of the year.

The Mediterranean cruise market is divided in the Western and the Eastern parts – Italian Peninsula as border. The Mediterranean Sea includes that sea and its many internal seas (Balearic, Tyrrhenian, Adriatic, Ionian, Sidra, Aegean, Marmara and Black Sea). The East Mediterranean part consist of 4 local markets (Adriatic Sea and Ionian Sea; Levante; the Aegean Sea and the Black Sea).

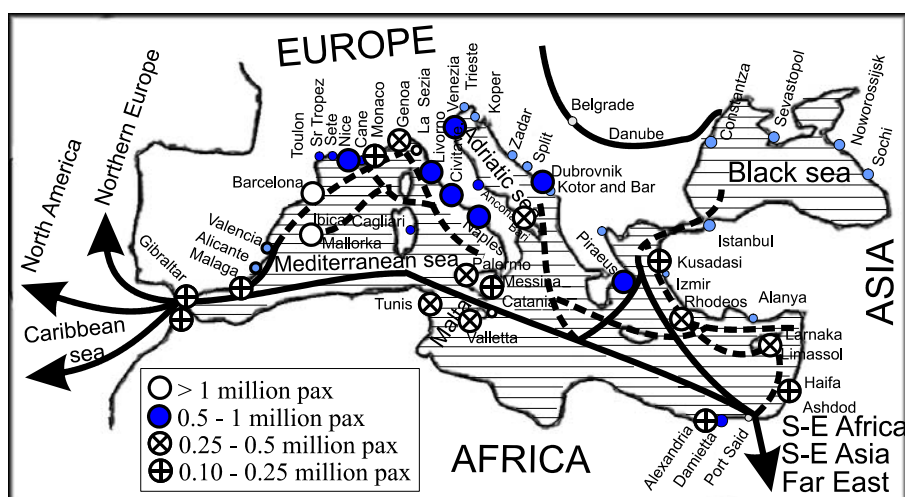
The data on cruise services in the Mediterranean come from *The Association of Mediterranean Cruise Ports (MEDCRUISE)*. It is, however, the only source of its type that provides the information required for this study.

In addition, over its previous years of existence it has built up a good record of credibility and usefulness. Data were drawn for seven years: 2000 to 2006.

The cruise port network of the Mediterranean Sea is shown in Figures 1 [3]. Figure 1 contains summary details of each port. This figure presents the correlation of port capacity suitable for the reception of cruise ships and the passenger traffic of each port, as well as the geographical position of each port in relation to hinterland and foreland (<http://www.medcruise.com/page.asp?p=1692&l=1>; [5], [6], [7], [8] and [10]).

Consequently, Pallis and Lekakou [9] analysed the structures of the cruise industry market in the Mediterranean region, and the impact of EU policy initiatives on Mediterranean cruise operators. Mediterranean as most dynamic market is experiencing a remarkable restructuring, involved increased demand and a consolidation trend that challenges the contestability of the market. This results in demands for port infrastructure adjustments. However, service providers do not perceive the absence of a comprehensive EU policy, either for the cruise industry or tourism, as a negative development. The 'maritime' element of cruising has led to an interest for global rules.

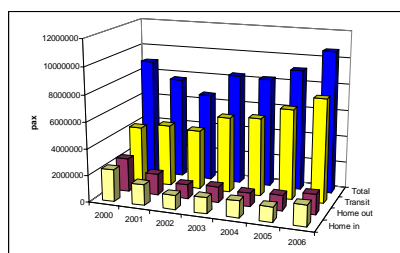
On the other hand, the disembarking passengers may spend thousands of euros on art and cultural activities during an afternoon, which can be a great boost to the local economies. Before assessing the magnitude of the economic impact of the cruise industry on the Mediterranean coast, it is important to analyze the impacts of tourism and the ports in the area. The approach to calculating tourism impact is to consider the revenues of tourism-related sectors and allocate a portion of revenues to actual tourism.



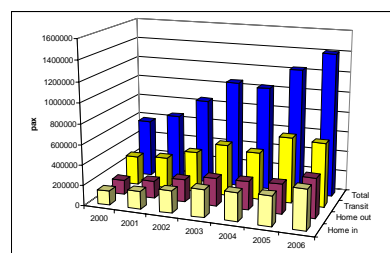
**Figure 1:** Summary Statistics of the Mediterranean Cruise Ports regarding passenger traffic in 2007

### 3. PAX THROUGHPUT IN MEDITERRANEAN CRUISE PORTS

Figure 2 shows trend function of passenger throughput in all Selected Mediterranean cruise ports (MEDCRUISE 2007, Balearic Islands ports, Barcelona, Genoa, Piraeus, French Riviera Ports, Limassol and Larnaka, Monaco, Venice and Naples, respectively). All of them have significant share *home in* and *home out* passengers in relation to transit passengers like as Venice, Barcelona, Balearic Islands ports, Genoa, Piraeus and Cyprus ports. The increasing number of passengers causes higher demands on the seaport cruise berths and terminals, cruise shipping logistics and management, as well as on technical equipment in port. So, Fig. 2 shows trend functions of Selected Mediterranean cruise port traffic in last 7 years. Other ports characterized with predominant transit passenger throughput. Passengers' traffic in Barcelona port as leading cruise Mediterranean port is presented in the Fig 3. The transit passenger traffic of leading Mediterranean cruise ports is presented on Figs. 4 and 5 [3].

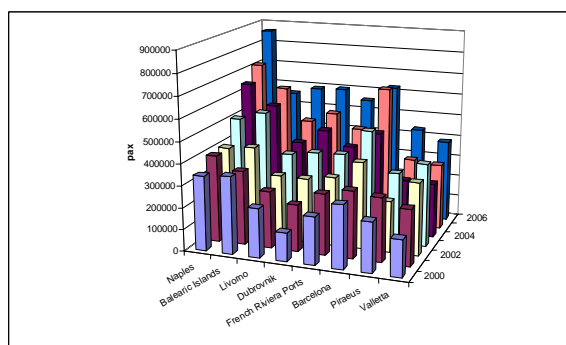


**Figure 2:** Trend function of passenger throughput in all Selected Mediterranean cruise ports (MEDCRUISE 2007)

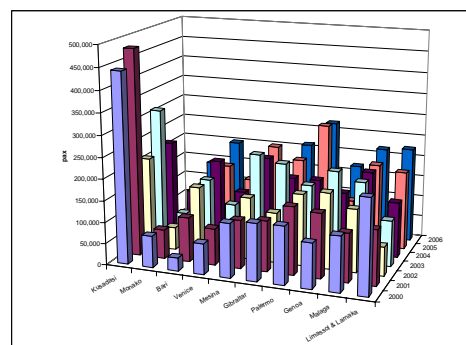


**Figure 3:** Trend function of passenger throughput in Barcelona port as leading cruise Mediterranean port





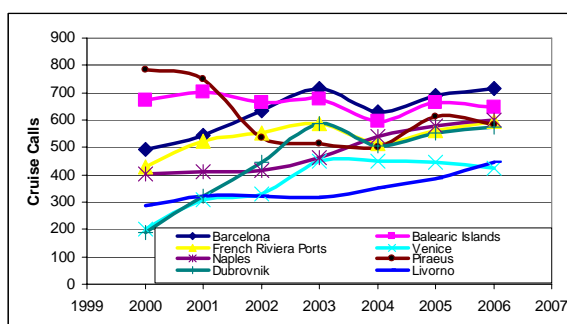
**Figure 4:** Trend function of transit passenger throughput in leading Mediterranean cruise ports (Naples, Livorno, Dubrovnik, French Riviera Ports, Barcelona, Balearic Islands ports, Venice and Piraeus)



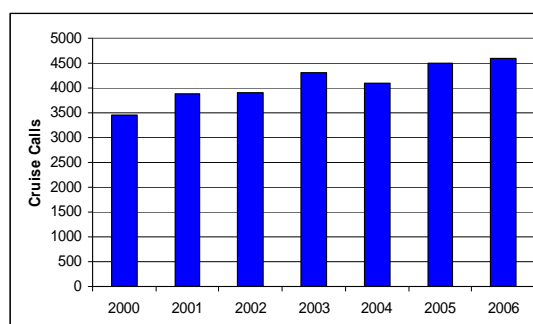
**Figure 5:** Trend function of transit passenger throughput in Selected Mediterranean cruise ports (Kusadasi, Monaco, Bari, Venice, Messina, Gibraltar, Palermo, Genoa, Malaga, and (Limassol & Larnaka))

#### 4. MEDITERRANEAN CRUISE PORTS PRODUCTIVITY

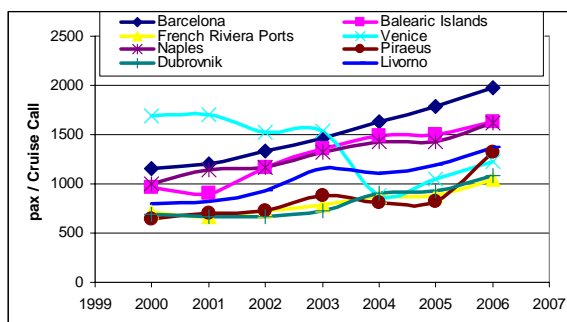
Since 2000 to 2006, cruise calls assignments to selected 8 Mediterranean cruise ports were 7663 ships in 2000, 7821 in 2001, 8231 in 2002, 9217 in 2003, 9127 in 2004, 9581 in 2005 and 11268 in 2006 for all ports together or separately as showed in Figures 6 and 7. Those to Barcelona were 714 cruise calls or 1971 passengers per call in 2006; those to Balearic Islands port were 648 cruise calls or 1636 passengers per call; those to French Riviera ports 597 cruise calls or 1046 passengers per call; those to Venice were 425 cruise calls or 1229 passengers per call; those to Naples were 602 cruise calls or 1614 passengers per call; those to Piraeus were 583 cruise calls or 1323 passengers per call; those to Dubrovnik were 576 cruise call or 1083 passengers per call and those to Livorno were 445 cruise calls or 1336 passengers per call, respectively (see Figures 6 and 9). In addition, Figures 7 - 9 show average cruise call in top 8 calling ports and average passengers per cruise call in relation to total traffic and cruse calls for selected 8 calling ports.



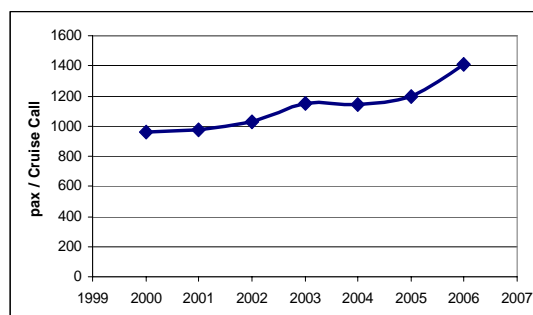
**Figure 6.** Cruise Calls per year in selected 8 calling ports



**Figure 7.** Average cruise call per year in selected 8 calling ports



**Figure 8.** Average passenger throughput per cruise call in selected 8 calling ports

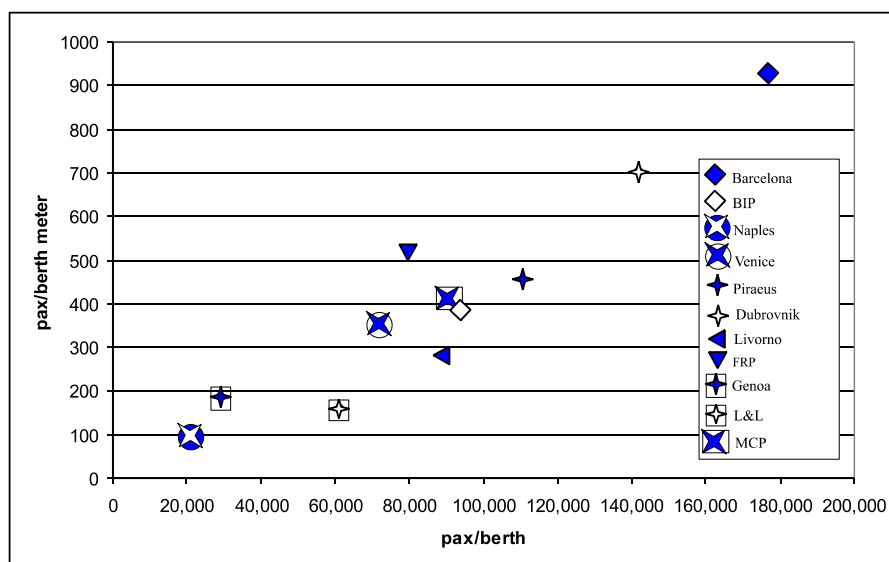


**Figure 9:** Average passenger throughput per cruise call in relation to total traffic and cruse calls for selected 8 calling ports

Figures 6-9 provide quantified sets of cruise calls, total cruise calls, average passenger throughput per cruise call and average passenger throughput per cruise call in relation to total traffic and cruise calls for selected 8 Mediterranean calling ports related to port traffic volume. Consequently, geographical limitations are a large impediment to another port considering entry into the home port market in the Mediterranean region. Home ports require convenient access to large air ports with sufficient airlift capacity and service to major centres in Europe. Home porting also is more conducive to ports in cities where there is appropriate tourism infrastructure for pre and post passenger stays.

Generally speaking, the competitive environment for cruise ports has changed drastically in recent years. Particularly, in the area of cruise shipping, a port will gain a significant share of the business only when it can demonstrate a combination of rates, facilities, and inland connection that create a clear competitive advantage for an identified group of customers. Tables 1 and 2 give a visual impact of what has happened to productivity measures of leading 10 Mediterranean cruise ports in 2006 and 2007. This result is a base reference here for illustration and comparison. It shows three basic parameters: passengers per berth, passengers per meter of quay length and passengers per terminal.

The Mediterranean cruise ports operation efficiency is examined from the viewpoint of the pax per berth meter and pax per berth, which are measured by ports productivity [1 and 2]. The performances of these ports are shown in Figure 10. The results shown there are of important differences between selected ports. In addition, the average performance of the port operation efficiency is also presented in Figure 10 with parameters for MCP (Average value of Major Mediterranean cruise ports).



**Figure 10:** The pax per berth and pax per berth meter of Mediterranean cruise ports in 2007  
(Throughput in pax per berth and Throughput in pax per m of berth length)

**Table 1.** Selected Mediterranean cruise ports characteristics and productivity measures in 2006

Rank in 2006	Top 10 cruise ports	Throughput in pax	No. of Berths	Length of Quays in m	No. of Passenger Terminals	pax / berth	pax / Berth meter	pax / Terminal
1	Barcelona	1,407,179	10	1,894	4	140,717	743	351,794
2	Balearic Islands Ports	1,060,060	13	3,162	6	81,543	335	176,676
3	Naples	971,874	55	11,500	-	17,670	84	-
4	Venice	885,664	14	2,809	3	63,261	315	295,221
5	Piraeus	771,241	7	1,685	2	110,177	458	385,620
6	French Riviera Ports	625,015	7	1,070	-	89,287	584	-
7	Dubrovnik	624,200	6	1,205	-	104,033	518	-
8	Livorno	607,848	8	2,500	-	75,891	243	-
9	Limassol and Larnaka	448,815	7	2,636	-	64,116	170	-
10	Genoa	473,333	18	2,770	2	26,296	171	236,666



**Table 2.** Selected Mediterranean cruise ports characteristics and productivity measures in 2007

Rank in 2007	Top 10 cruise ports	Throughput in pax	No. of Berths	Length of Quays in m	No. of Passenger Terminals	pax / berth	pax / Berth meter	pax / Terminal
1	Barcelona	1,765,838	10	1,894	4	176,583	932	441,459
2	Balearic Islands Ports	1,219,886	13	3,162	6	93,837	385	203,314
3	Naples	1,151,345	55	11,500	-	20,933	100	-
4	Venice	1,003,529	14	2,809	3	71,680	357	334,509
5	Piraeus	771,241	7	1,685	2	110,177	458	385,620
6	Dubrovnik	851,961	6	1,205	-	141,993	707	-
7	Livorno	713,114	8	2,500	-	89,139	285	-
8	French Riviera Ports	559,411	7	1,070	-	79,915	523	-
9	Genoa	520,197	18	2,770	2	28,899	187	260,098
10	Limassol and Larnaka	427,408	7	2,636	-	61,058	162	-

## 5. CONCLUSIONS

A way has been found to calibrate the combined effect of cruise shipping (ship development), cruise port (port development) and ship service quality level with handling home in, home out and transit passengers on the main cruise port link (berth or terminal - ship including different layout of berth or terminal for pre and post passenger stays) for main generation of cruise ship, passenger berth and terminal evolution, by making certain assumptions which are described with different measures of port productivity in Figure 10, and Tables 1 and 2. The relationship between cruise ship size with different carrying capacity and terminal system layout implies that the economies of ship size require adequate infrastructure and passenger terminal in port.

The Mediterranean Sea networks are very developed. There are more services and cruise ports served with more connections. As well, there is stability over time in the major ports measured by the number of port partners. This study suggest the reason for the development and stability is the more developed economies of the Mediterranean basin with countries having greater complementarities of cruise passengers traffic than in some other world cruise regions.

Many factors may account for the greater development of cruise shipping networks in the Mediterranean. For one thing, the traffic volume handled in West Mediterranean ports is substantially more than in the East Mediterranean ports. The increased activity may lead to more services and maritime port connections; alternatively, the more services and connections may generate more handled passengers. There may also be more intra-basin connectivity in the Mediterranean.

In summary, productivity is high and increasing in major western Mediterranean cruise ports. This is a manifestation of the highly competitive nature of the business, with standards of operation forced upwards by the requirements of the shipping line customers.

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## Appendix I

The face of the cruise port industry continues to change. Consequently, Figure 11 show photos of Selected Mediterranean cruise ports, terminals and berths.



Balearic Islands, cruise terminal



Barcelona, cruise terminals



Genoa, cruise terminal



Limassol, cruise berths



Livorno, cruise port



Piraeus, cruise port



The Port of Civitavecchia is located on the Mediterranean Sea, just west of Rome Italy. It is a port-of-call form many Mediterranean cruises with achieved throughput 1,586,101 pax in 2007



Port of Bari with achieved throughput 351,897 pax in 2007



Valletta, cruise port with achieved throughput 487,713 pax in 2007

**Figure 11.** Photos of Mediterranean cruise ports, terminals and berths

Source: <http://www.medcruise.com/page.asp?p=1692&l=1>

## **THE ROLE OF LEADERS IN THE PROCESSES OF REFORMING THE ECONOMIC SISTEM IN SERBIA**

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***Summary:** Leaders have a great role in conducting the process integration of Serbia into EU, more exactly, concerning the development of qualitative economic and political relations with the countries-members of the EU. In order to highlight the mentioned great importance of leaders, we have analyzed their role and contribution to the development of the economic system of Serbia, wherein they have been presented at the main carriers of the process of transition towards market economy. Besides that, we have pointed out the importance of participation of leaders in fulfilling the basic conditions for our country to become a member of the EU, related to the solution of complicated problems, as well as for the economic system and for the intensity of carrying out the institutional reforms.*

***Key word:** leaders, integration, development, market potential*

### **1. INTRODUCTION**

From the standpoint of formulating the strategy of foreign-economic relations, the EU market potential cannot be treated simply as a trade or even only economic block, but as a highly integrated and homogenized space founded on simple values, political, developmental and geo-strategic postulates, whereby we should emphasize:

- The achieved high level of functional integration accomplished by long-term stimulation and support of the flows of goods, services, people, knowledge, capital and information;
- High level of connection in the field of communications, infrastructure, culture and public services;
- Established high level of institutional cooperation, by developing a network of supranational institutions, in the strategically sensitive field of foreign policy, security, environmental protection, monetary and economic policy;
- Compatibility of technical, technological, sanitary, health, safety and administrative standards as well as homogenization of the business regime of companies and banks;
- High level of intraregional market correlation.

Facing challenges of the 21<sup>st</sup> century, for which it has been said, that it is "the century of changes" initiated by the tendencies of globalization, deregulation and liberalization, the political and economic leadership of Serbia will have a serious task to initiate economic potential in order to achieve competitiveness.

For the recovery, development and return of the Serbian economy to the international market, the development of relations with the EU countries is of strategic importance and it is determined by the following reasons:

- The EU represents a significant market potential,
- The EU market is characterized by high purchasing power and the population able to pay demands.

In order to provide economic connection of our country with the European market defined in this way, it is necessary to carry out radical changes, more exactly, the reforms of economy in order to adjust it to the market principles and the international systems of quality.

Besides that, the process of integration of Serbia into the EU will depend on the success of transition of economy, bearing in mind that the fulfillment of economic criteria is a significant prerequisite for gaining membership. Implementation of such big and radical changes in the economic policy and economic organizations in our country can be realized efficiently, only if it is managed by the people who possess leadership abilities and skills, and who have energy to convey their vision into reality.

## 2. STARTING THE PROCESS OF TRANSITION IN SERBIA

The role of political leaders was especially highlighted in the processes of reforming the economic system of our country, considering the fact that only they have a legal authority to create economic policy, as well as the fact that they lead the foreign policy, influences considerably the development of economic relations and cooperation with foreign countries.

Bearing in mind that one of conditions for gaining membership in the EU is the reform of economic system, Serbia started the process of transition of its economic system towards market economy in 2000. Even during the first year, the EU issued positive comments about that process. Thus, the European Bank for Reconstruction and Development proclaimed Yugoslavia to be the most successful country in transition, out of 27 countries of the Southeast Europe in 2001, whereby in the range of grades from one to four, it got the grade three for privatization, for liberalization of prices and foreign-trade exchange, grade two for infrastructure development, and grade one for restructuring the economic and banking system. The fact that the FRY entered the world of transition as the last country on the continent, which opted for that transitional stage into the capitalism, speaks also in favor of the importance of obtained positive grades.

The role of a leader in the transition of economy implies initiating and carrying out changes that will enable the establishment of the market system, new ownership structure, competition and other changes, in order to improve the performances of economy and its connection with the international market.

However, within a scope of the leadership in economic organizations, and the leadership which dominates on the political stage, it is possible to identify various types of leaders, characterized by various attributes and styles of behavior. Taking into consideration that the process of transition is associated with carrying out a great number of radical and complex changes, there is an understanding represented in the literature that the main carriers of transition the so-called leaders of changes, i.e. the leaders reformers. Their key tasks are:

- To motivate the followers by increasing the level of cognition of importance and value of set of goals,
- To explain to the followers the possibilities of adjusting their personal interests with the general public interests,
- To create the atmosphere of trust and to convince the followers of the necessity of relying on one's own strength.

Beside the reformist, more exactly transforming leadership, one cannot neglect the implication of charismatic leadership on the reform of economy, especially bearing in mind that this type of leadership has often been related to the political leadership. The following table demonstrates that the charismatic leaders have an important role in the process of transition and the basic differences between charismatic and non-charismatic leaders have been shown.

Based on the analysis of the characteristics of charismatic leaders it can be clearly observed from the table that their main role in the process of transition is to initiate changes, which they manage by a strong vision and personal expertise, and thereby transform the system of values and understanding of the followers in order to include them in their implementation. The main motive, that moves those leaders to initiate transitional changes, is their dissatisfaction with the status quo, which refers to the low economic efficiency, unreasonable use of the production factors, unfavorable economic structure, unfavorable relation between small, medium-sized and big companies, high unemployment.

Duration and complexity of the process of transition in the world have differed between certain countries, depending on the level of development of their economic systems, more exactly the seriousness and the scope of reforms that had to be carried out.

In the past seven years, the leaders in Serbia have carried out numerous reforms in order to establish macroeconomic stability and viable and stable economic development, to restructure big systems, to privatize companies and join the EU that includes various legislative adjustments in all domains of economy and society.

In the process of managing transitional changes the Serbian leadership had the first task of facing a difficult heritage, which referred to

- The economic structure formed a quarter of a century ago, and dominated by energy, raw materials, and food, with the additional consequence of foreign indebtedness;
- Non-market behavior of economic participants as a consequence of self-managing and state socialist model of economy that lasted for decades;
- And finally, difficult economic and social crises in terms of a dramatic fall of the social product and the standard of living during 90-ties, due to the break up of the former SFRY, the international sanctions, wars and numerous failures of economic and total policy.

**Table 1:** The main behavioral differences between charismatic and non-charismatic leaders

	<i>Charismatic leader</i>	<i>Non-charismatic leader</i>
Relation towards status quo	Essentially against status quo & strives to change it	Essentially agree with status quo and strives to maintain it
Goal	Idealized vision, considerably different in relation to status quo	Goal is not essentially different than status quo
Disposition of followers	Mutual prospects and idealized vision make him popular and honest hero worthy of identification and imitation	Mutual prospects make him popular
Expertise	Expert in using non-conventional means to overcome the existing situation	Expert in using available means to achieve goals in the existing situation
Feeling for environment (attitude towards environment)	High need to know the environment (to change status quo)	Small need to know the environment (wants to maintain status quo)
Articulation	Strong articulation of vision and motivation	Weak articulation of goals and motivation
The basis of power	Personal power, based on expertise, (expert power), respect and admiration	Power of position and personal power (based on prizes, expertise and similar.)
Relation towards followers	Elitist, entrepreneurial, exemplary, transforms people so to accept radical changes	Egalitarian, based on consensus or directive imposes his own attitudes to people

Source: Jay A. Conger and Rabindra Kanungo, *"Toward a Behavioral Theory of Charismatic Leadership in Organizational Settings"*, Academy of Management, San Francisco, 1987, pp. 637- 647

Thereby, in order to change over to the market economy, it was necessary to achieve certain macroeconomic objectives, which referred to: the inflation, prices, export, import, balance of payments, earnings, unemployment, etc. Namely, it was necessary for the leaders to define adequate policy directions that would enable the realization of macroeconomic stability, such as:

- Anti-inflation policy
- A new fiscal policy and reform,
- Equilibration of the balance of payments,
- Income policy,
- Social program, as the set of measures for solving problems caused by the strict anti-inflation policy.

Thus, the main objectives of our economic policy include sustaining macroeconomic stability and at the same time attaining a high rate of economic growth (the average GDP growth rate for the period 2001 to 2006 was 5.3%). The market activity after 2000 has encompassed some positive processes of economic transition and reform of the tax system, labor market and social sector. There has been a stability of the exchange rate of national currency – dinar with a continual growth of foreign currency reserves, considerable deregulation of prices and international trade and better relations with international financial institutions. A considerable improvement has been made in the field of structural reforms, especially in company privatization and consolidation and privatization of banking sector that includes 350 new laws that support structural reforms.

### 3. ACHIEVED RESULTS AND THEIR IMPORTANCE

The improvement in structural and institutional reforms in 2006 in 20 European transitional countries has been summarized by European Bank for Reconstruction and Development (EBRD). It was done with the help of transitional indicators that confirm that Serbia finished the first phase of transition successfully. The following table shows the value of EBRD indicators for Serbia for the period 2000 – 2006.

Comparing the average annual transitional indices of 20 European transitional economies shows that in 2006 Serbia was on the 17<sup>th</sup> place with the index of 2.7, while only Belarus, Bosnia and Herzegovina and Montenegro had worse results. Hungary, with the highest index (4), was closest to the level of developed market economies of Europe.

**Table 2:** The values of annual EBRD indicators for Serbia for the period 2000 – 2006.

EBRD indicator	2000	2001	2002	2003	2004	2005	2006
Liberalization of prices	2.3	4.0	4.0	4.0	4.0	4.0	4.0
Exchange system and trade liberalization	1.0	2.7	3.0	3.0	3.0	3.3	3.3
Privatization of small companies	3.0	3.0	3.0	3.0	3.3	3.3	3.7
Privatization of big companies	1.0	1.0	2.0	2.3	2.3	2.7	2.7
Restructuring of company	1.0	1.0	2.0	2.0	2.0	2.3	2.3
Competition policy	1.0	1.0	1.0	1.0	1.0	1.0	1.7
Reform of bank sector	1.0	1.0	2.3	2.3	2.3	2.7	2.7
Reform of non- bank financial institutions	1.0	1.0	1.7	2.0	2.0	2.0	2.0
Infrastructure reforms	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<i>Mean value of annual EBRD indicators</i>	1.6	1.9	2.3	2.4	2.5	2.6	2.7

Source: EBRD Transition Report 2006

In 2006, Serbia was successful in two fields: in small company privatization and in the policy of competitiveness. However, there is still the biggest lag in the field of the policy of competitiveness where the indices are at the lowest level (1.7). The average improvement was made in the process of privatization of big companies (2.7), banking sector reforms (2.7) and company restructuring (2.3), while a modest result (2) was made for the economy security, non-banking financial institutions and in the field of infrastructural reforms.

After the price liberalization, with reduction of the most important price disparities which was done in phases, the inflation was reduced from 111.9% in 2000 to 17.7% in 2005, i.e. 6.6% in 2006. The key factors that the leaders are going to consider while planning the inflation reduction in the following period will be coordinated activity of macroeconomic policies, monetary and fiscal policies and structural reforms.

The mentioned facts clearly show the success of Serbian transitional economy so far, i.e. explain the current state of affairs of the economic system whose future development will depend on the leaders' aptitude to recognize mechanisms for effective continuation of the process towards market principles.

Another important task that the leaders have will include the construction of modern material and informational infrastructure, i.e. modernization of companies in order to enhance value added per an employee. This is especially important since the process of approaching GNP *per capita* in Serbia to the revenues in the EU, except in some exceptional circumstances and in short terms, is possible only through a constant growth of productivity and competitiveness.

The changes at the political scene of Serbia in 2000 considerably changed the structure and way of functioning of its economic system. That is why the subject of the analysis in this chapter will be economic indices for the last seven years since the very change of political objectives contributed to reconsideration of the old type of economic activities, which is also a turning point to market principles, i.e. the process of huge transitional changes began.

One of the main economic growth indicators of a country is related to its GDP that presents the final result of its manufacturing activity. Graph 1 shows GDP growth in Serbia in percentages in the period 2001 – 2006. It can be seen that real economic growth in 2006 was 5.7%, which is lower comparing to 2005 when it was 6.2% and especially comparing to 2004 as the record year when it was 8.4%. The consequence of such a state is poor growth of production and growth in service sector (especially in retail and wholesale). It happened because of the reduction of the public expenditure due to the slowing down of credit activity of banks, i.e. restrictive measures of the National Bank of Serbia.

Transitional changes affected the whole structure of the economic system of our country with considerable implications on all its sectors. These changes redefined the participation of individual sectors in forming gross value added. According to the data from 2005, manufacturing industry and trade generated the biggest part of the total turnover (66.9%), gross value added (50.9%), profit (47.7%) and employees in Serbia. This can be clearly seen in the following table that shows their proportion comparing to other sectors.

These results are the consequence of manufacturing industry privatization, as well as the service sector in which we have to emphasize trade, traffic and tourism. However, our country is still facing the challenges of new economic structure changes. The most prominent are: structural problems in the field of industry, dominated by traditional ways of production, low level of technical and technological equipment and low level of company competitiveness.

**Table 3:** Economy structure of Serbia in 2005 (in %)

Sectors	Turnover	GVA	Profit	No of employees
Economy	100.0	100.0	100.0	100.0
Agriculture	2.9	3.7	2.9	4.8
Industry	36.5	41.9	43.8	43.2
Manufacturing industry	25.9	30.0	25.1	36.4
Civil engineering	5.1	7.0	6.5	7.2
Trade	41.0	20.9	22.6	23.1
Traffic	7.2	13.9	17.4	8.8
Other services	7.3	12.6	6.8	13.0

Source: Report on Serbian development in 2006, Republic Development Bureau, Belgrade, 2007, p.18

The favorable aspect of the economic growth in recent period has been the important growth of investments thanking to state companies' privatization. In 2006, Serbia had record sales from privatization including €1.5 billion from the sale of a mobile communications provider to Norwegian Telenor and mobile telecommunications license sale to Austrian Telecom for €320 million. Investments were also ensured by selling of Panonska bank to Italian SaoPaolo IMI for €122 million and Vojvodjanska bank to Greek NBG for €385 million. These transactions in 2006 were record ones and the total income was €3.2 billion, which was the best result since the beginning of transition.

However, the process of privatization has not been realized to the end. That is necessary to be done in order to enable market economy.

The success of privatization in Serbia is best illustrated by EBRD indicators that can help us make a comparative analysis of individual countries so that we can position our country. The following graph shows how EBRD transitional indicators moved after the big companies' privatization in Serbia, Albania, FYR of Macedonia and Slovenia. It can be seen that Serbia had a growth from 1.00 in 2001 to 2.67 in 2007. However, that is much lower comparing to other surrounding countries. The most important success in big companies' privatization is made by Hungary that has had a constant EBRD indicator of 4.00 since 2001.

High rate of unemployment that was 33% (ILO: 21%) continues to be one of the biggest challenges for Serbian economy. However, in 2006, there were no changes in the labor market. The unemployment rate increased from the average 32% in 2005 to 33.2% in 2006 while the employment decreased for about 1.5% due to the current restructuring in market sector. The real net earnings growth was considerable accelerated during the last months of 2006 as the result of governmental policy of earnings in pre-voting period. They were characterized by the average growth of 11.6% (2005: 6.4%). At the same time, manpower productivity rose for 13.5% (2005: 9%) which is, most probably, rather the result of reducing the number of employees due to restructuring than enhanced productivity.

One of the possible ways for the unemployment problem solving and improving economic competitiveness of Serbia present FDI (foreign direct investments), that have an important place for new job openings, export enhancement and improvement of corporative management. In last two years, the investment climate in Serbia has considerably improved which resulted in FDI enhancement that amounted to USD 4.4 billion in 2006. The largest part of FDI was in postal activity and telecommunications (28.3%), manufacturing industry (18.2%) and financial intermediary services (36.8%).

Foreign direct investments in Serbia in the period 2000 – 2006 amounted to net USD 7.96 billion. The following graph presents the participation of individual countries in FDI in Serbia (in percentages) that brought the biggest amount of money.

#### 4. CONCLUSION

According to the analysis of the main indicators of Serbian economic growth we can conclude that, beside some improvements in the period 2001-2006, there is still no macroeconomic stability, that the process of economy restructuring is harder than planned, that domestic accumulation is minimal and pressures on personal and public expenditure are far above manufacturing possibilities of the economy.

Thus, the strategy of economy development should base upon:

- Change of GDP usage in favor of investments in fixed funds,
- Maintaining a dynamic and sustainable economic growth,
- Reduction of the public expenditure share in GDP
- Monitoring current balance of payments so that it will not affect the foreign debt,



- Sustaining price stability – all in conditions of liberalized international trade and enhanced price liberalization (monopoly elimination).

In the next five years, Serbian economy should make sure that the value of annual export will be enhanced from present \$3.8 billion to over \$10 billion. Such an improvement is possible only if the competitiveness of Serbian economy become significantly better and with the full benefits in relation with the process of approaching the EU and WTO, as well as with much more effective usage of Free Trade Agreement and co-operation with neighboring countries.

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## **MODERN CONCEPT OF MANAGEMENT IN PUBLIC SECTOR**

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***Summary:** Public sector, as an open system of numerous and various business systems, is related to the environment (internal and external) in the process of obtaining input for the process of transformation and routing highway services to targeted market segments. Analysis of the environment allows objectively assessing the business strategy consistent system within the public sector with their positions and finding ways to respond to changes in the environment. Time minimize the unfavorable impact of the environment and uncertainty, which is a key issue for the state and public enterprises, and as the uncertainty related to the state cause-and-consequential, and consequential for the company. For example, when it comes to our environment, it is not controversial to 30 years spend more than you produce. The average age of installed technical and technological basis of over 30 years, are present famine, raw materials, energy, financial resources, etc.. We fall behind the developed world for more technological cycle. In addition, today and in the close future and I feel a new kind of turbulence - the uncertainty in the future and the uncertainty of the future, as a consequence of insufficient growth and development, the threat of not having global strategy, general and partial objectives, threats of new technologies, competitors, lack of protection property, political and other pressures. Different business systems react differently to the same changes in the environment because they have different abilities. Ways and directions of public reaction depend on the character of the environment, and management should be to identify key strategic issues. Unfortunately, in our range of public opinion management generally corresponds to the stereotype range of thinking the state, to the static relationships more by prescription, without initiative, reflection, creation and the like.*

**Keywords:** public sector management, governance, management services, public-private partnership (PPP)

### **1. MANAGEMENT IN PUBLIC SECTOR**

To consider the problems of management in the public sector and modern concepts of management of the economy with regard to certain peculiarities related to public companies, is to remind the public enterprises, as well as all other companies, permanent growth and development objectives. However, public companies are characterized by one, specific goal - the achievement of public interest, which does not mean that public companies in need to gain profit, but to them it is not the primary goal.

Management of public enterprises carried out in conditions that are complex and complicated in the company and the external environment. Management in public enterprises is responsible for their work and executive and legislative authorities. In developed countries like USA, Canada, Japan and most countries in Western Europe, significant attention is given to studying the public sector. In developing countries, including our country, it is necessary, after the model of the developed models and by using the specific permanent build model of public sector framework is a development of the economy and the country as a whole. For third world countries (Bolivia, Egypt, Pakistan, etc..) Can be said that very little use strategic management in the public sector. This is the most likely cause permanent lagging and inability to overcome the existing situation.

This material includes:

- public sector;
  - public sector, as a goal oriented system;
  - objectives of public sector and their division from the aspect of management and a new management strategy;
  - management by results;
  - management by exception;
  - project management and
- general management projects (according to life cycle management companies, management of multinational

companies - a new strategic alliance).

## **2. DEVELOPMENT AND MODERN CONCEPT OF MANAGEMENT**

Management is a continuous process that starts and directs the business activity of the enterprise or business entity for the purpose of achieving the purpose of business determined the socio-economic system.

If in this way to characterize process management, necessarily give him deeper dimension in the starting attempt interpretations concept of management. Also, the definition can be seen the necessity of consideration of economic character and the fact that management is a prerequisite for survival, growth and development.

In addition to the definition noted in the theory are present and many other opinions.

As already noted, the management is in effect the object which improves the functioning and development of the object that is selected from a variety of possible operations on the basis of available information (A. Lerner). According to this author management can be defined as the regulation of property management, or as a process that allows you to such facilities or the entire system to maintain the environment and conditions in addition to other changes, the possible environmental impact, etc.. By another author (V. Jovanović) management has the opposite goal of the environment, which, however, affect continuously and in various ways to the system, so that the form of increased possibility of entropy, in his disorganization to total destruction. This is contrary to the aim is reflected, above all, in opposition to the destructive influences of the environment, maintain or increase the organization, and ensuring the functioning and development of the system, or its reproductive power.

Based on the archive, we can conclude that under the management involve all those activities that are necessary must be undertaken to achieve the appropriate goals of the organization. On the basis of the fact that the control applies to very different systems, and only management can be regarded as a control in the broader sense and management in the narrow sense.

Management in the wider sense, we can differentiate as:

- territorial system, and management of territorial units (eg, management of the Republic, municipality, etc..)
- management of working-functional communities or functional system (eg, management companies and other organizations);
- according to some authors there and associative, transitional, or mixed paternalistic system.

Under management in the narrow sense of the appropriate terms of management processes work. Frequently this type of management related to the science of cybernetics and is considered as an element of cybernetics. Follow-up work, please note that cybernetics comes from the Ancient word kibernetis, which indicates the pilot boat, a Soviet Encyclopedia defines the term cybernetics as the science of general laws of receiving, storage, transmission and processing of information management in complex systems where the management systems not only involve technical, but any biological, administrative and social systems.

Furthermore, cybernetics is, as a rule, divided into three integral elements: the general theory of systems, information theory and theory of management. Thus, under control in the narrow sense of the word terms of management with the help of computers and other mathematical machinery, plant, machinery and so on.

## **3. NEW MANAGEMENT STRATEGY DEVELOPMENT ORGANIZATION PUBLIC SECTOR**

New development of the management of development of public sector organizations are in the direction of decentralization because it is understood that this organization must be primarily accountable to develop services to the mood in the internal and external environment changing.

Understood that there is a need for more flexible organizations that are centralized procedure became rigid. In a time when there was a example. centralized financial control, rather than to provide the skillful use of resources, the management limited procedures because they are resources used in connection with the problems that are faced.

In developed countries there is a tendency on what is considered to be the rigidity of the government bureaucracy. There was a change in laws that undoubtedly decentralize public sector, and fundamentally change the role of the center (the Committee, the Director).

Decentralization in government, management, there are many different forms that partly reflect the different problems in the centralized structure, which should decentralize:

- Lack of access that occurs as a consequence of geographical centralization and style of work that promotes the centralized office, which leads to the development of local parts.
- Interest to reduce the limit of effective management which is due to organizational centralization leads to be created for the development of management systems that can highlight or the need for greater efficiency, or better demand for public services.

- Concern about lack of control people have over the services resulted in the forming of certain bodies, the Commission for the control of local importance, or to develop the role of advisers and the like.

The aim of decentralization is, therefore, to make services accessible to users and to speed up the process of service and increase the quality of service. Assumed to increase autonomy and decision-making capacity of the staff that is in direct contact with the public. When it comes to public sector organizations should be emphasized that the work in this area more than simply producing services, he is in fact part of basic services.

It is obvious that the development of management theory is based mostly on human resources and running at the time to impair the harmony of individuals and companies. It is hard to imagine without rail transportation engineer, conductor, trains or plane without a pilot, flight controllers, stewardess, airport staff, etc.. Therefore, these organizations provide services of higher intensity and more than half of the cost goes to the employees. Workforce is composed of professional staff, administrative staff, professional-manual and non manual staff, as well as a large number of half qualified and not qualified staff. Labor force is large, often overspill, fragmented and distributed to different positions. Although the greater part concentrated in the cities, large public sector organizations have staff that works on remote, different jobs for which they are isolated, and communication with management is difficult or does not exist.

The middle 80 of the last century, most public sector organizations began to implement the policy of dismissal from work, early retirement and a contract for a limited time. Number of staff who has been affected by such policies is quite large. For example, the DB AG decreased the number of employees to over 200,000. According to the EC in these countries, for example, education is the reduced number of employees for 2% of total teaching staff of 1,978. and 1981. , and 2.5% of the staff remain employed by the contract for a limited time. These and many other changes indicate the trend changed conceptual framework and the overall environment of public sector management in the flexible organization, which is composed of independent centers for costs. These processes take place slowly, mostly due to the limitations of traditional hierarchical bureaucratic structure.

However, they are inevitably processes. On the one hand, there is pressure to build more efficient organization in which staff is aware of the needs of service users, public interest and is to act on his own initiative in order to meet those needs. On the other hand, there is pressure to achieve greater rationalization, increase supervision and control, reduction of payment and conditions for the provision of services and the like. These conflicts can be partially overcome separating key personnel that need positive motivation of other employees who are peripheral and whose connection with the organization less secure.

It can be concluded that management of the development of public sector assumes three important areas:

- research the nature of the new changes;
- research solutions to the problem (how to respond to public pressure, social pressures, if you go with the strategy of growth in the strategy of survival and vice versa);
- research structures - reorientation, how to get to high quality information, how to use them, to enable decision makers to think differently, react, decide, etc..

Management development in public sector services, dynamic conditions, which is ahead of any words, can be viewed from two aspects:

- management structure and
- management processes.

Management structure or static control, refers to the optimal disposal and mutual adjustment of the constitutive elements of enterprise in the public sector in order to achieve different functions and define their goals. Management processes or the dynamics of governance, refers to the time dimension of schedule goals, tasks, results and decisions, with the By opting to be optimal and appropriate conduct fundamental aim of the company and the overall activities of the public sector.

Starting from the above, public sector development strategy is the need to manage borders shared business systems of the environment and the same can not be found discontinuity changes in the environment. Adverse changes in the environment and a lack of reaction to them creates the potential mismatching between the companies and ask for the environment.

#### **4. BETWEEN PUBLIC AND PRIVATE SECTOR**

Always has been difficult to define a border that exists between the public and the private sector. To answer this complex question used example education, which may be different relationships between the government (state), private companies and consumers of public services.

- 1) The school (building) is the property of the state, which employs teachers who transmit knowledge to their students.
- 2) Private company is the owner of the school, but is issued by the state. The state employs teachers and in this way provides the service of education.
- 3) The state is the owner of the school, but it is a private issue. Private company employs teachers who provide

education services, and that she charged the state.

4) Private company is the owner of the school, hiring teachers, providing educational services and charges them the state.

5) Private company is the owner of the school, hiring teachers, providing educational services and charges them directly to your customers.

For example, I clearly see the distribution of education services in the public sector. It is also obvious that V example shows the provision of education services in the private sector (although the state may still have an important role in setting standards in the field of education, a private company can be a non-profit company). In example IV is a private company service provider of education, while the state appears in the role of the buyer.

However, examples of II and III are slightly more difficult to explain. Namely, in case II, the state (government) employ resources (material and human) in connection with the control over them, ie. the right to decide on their use and development, to create the conditions for providing education services. Although the state is not the owner of the school (building), it has the right to use in a certain period of time in which the basic means rented. For this reason, we can conclude that education services in this case provide the public sector.

In the example of case III is reversed. Private company has control over the basic instrument (school buildings) and human resources, and provides education services to the private sector.

## 5. ROLE OF PUBLIC SECTOR IN PROVISION OF PUBLIC SERVICES

When public services provided by large and complex organizations from the public sector, which consists of a large number of institutions (such as schools and hospitals), the question on how they can stimulate and motivate to work more efficiently and effectively.

To management in such a system (or the competent Ministry) responded to this question, it is not enough to analyze the factors of motivation of employees in individual institutions, but it is also necessary to understand the specific structure of the organization.

Reforms that were carried out 80 years in the UK, in the field of health and education, are focused on two key aspects:

1) Institutions (hospitals and schools) has provided more freedom in decision-making regarding the allocation of resources and control costs. In this regard, particular emphasis is placed on the financial management of the micro-level organizations. On the other hand, at the state level, some ministries have more space for deciding on priorities and objectives in the field of health and education in the sense of influence, or condition the institution to operate in accordance with the defined goals.

2) Strengthening of competition between institutions, due to which consumers have at their disposal more and offer better public services. For example, children no longer have to attend local schools that are in the area of their municipality, but parents have the right to choose the school that you think that their children will provide the expected level of education.

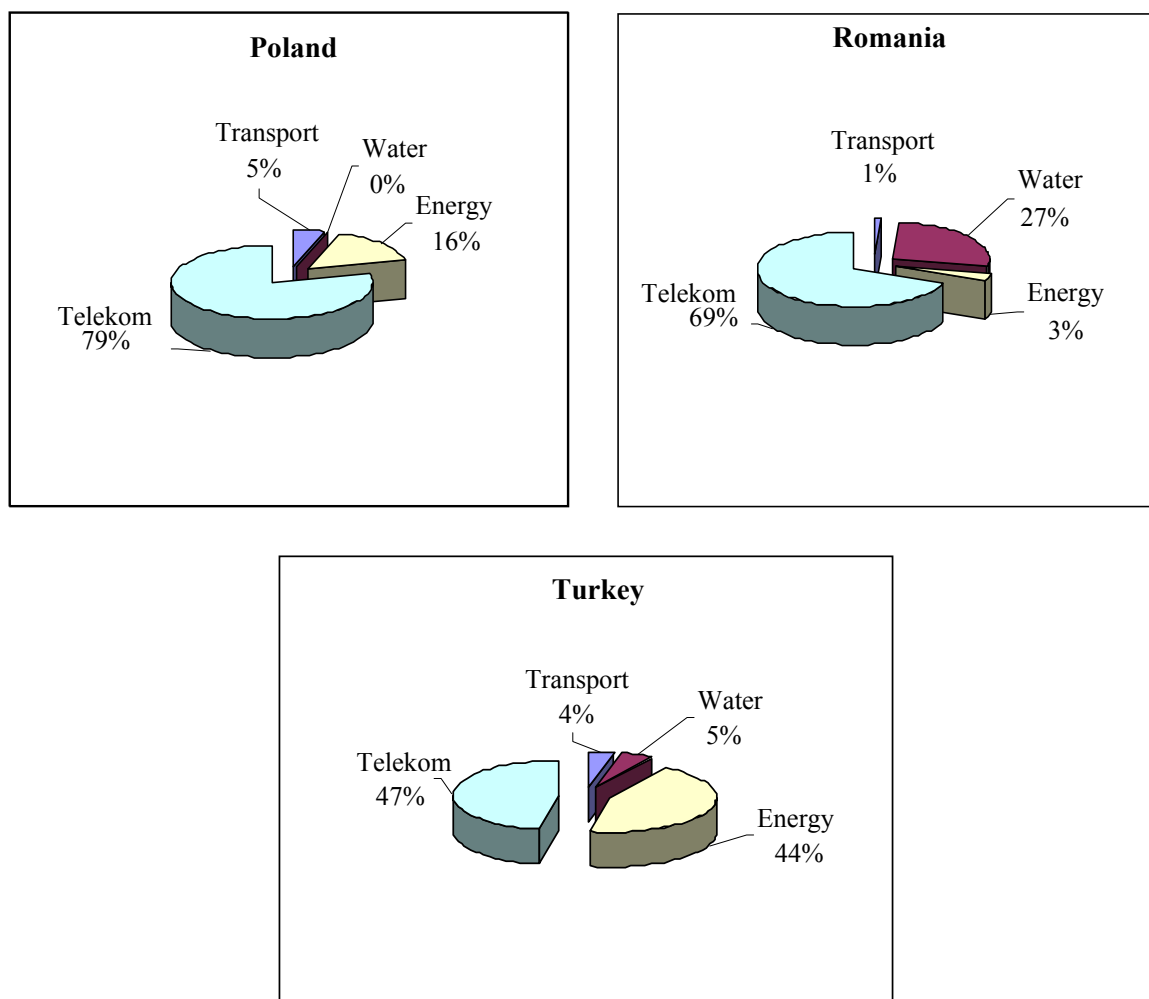
In this way, the reforms have increased the responsibility of the manufacturer of public service in the UK and seen two aspects. That's right. On the one hand, increased responsibility to the state (the competent ministry), who wants to achieve the objectives in the field of education and health, and on the other hand according to the customers (pupils, students and patients), who wish to obtain public services of high quality.

## 6. ROLE OF PRIVATE SECTOR IN PROVISION OF PUBLIC SERVICES

To organizations that offer public services become more efficient, productive and therefore financially "healthy", as well as to increase the quality of services, government, large number of countries to decide that in the process of providing public services involved and the private sector. The term privatization of public services is used to describe the transfer of ownership from public to private sector, where public services are charged directly to consumers.

In the UK, in the period between 1979. and 1997. year, has shifted more than £ 60 billion of funds from the public in the private sector. The program included the privatization of public services such as water, electricity, gas, transport and telecommunications, which are formed due to specific regulatory agencies that followed the above mentioned process. However, unless the process of privatization, the government is also often make decisions for the concept of the so-called. partnerships between the public and the private sector. Such cooperation is particularly important for countries that are on the waiting list for entry into the European Union, whose national infrastructure (especially telecommunications and resources such as energy and water management) requires a large investment.

In the diagram is shown the amount of private investment by certain sectors of public services, such as telecommunications, energy, transport and water, in Poland, Romania and Turkey, for the period 1990-2002. year.



**Figure 1:** Investments of private sector in Poland, Romania and Turkey, 1990-2002.

In Poland, telecommunications sector attracted the largest percentage of investment that is 79% of the total private investment. Followed with 16% energy and transportation 5%, while investments in water supply do not exist.

A similar situation is present in Turkey, with investments in telecommunications are 47%, 44% in energy, transport and water and 5% and 4% of total investments.

Unlike the previous example, investments in the water sector in Romania amounts to even 27% of the total amount of private sector investment in public services, while investment in telecommunications are 69%, 3% of energy and transport only 1%.

## 7. PUBLIC-PRIVATE PARTNERSHIP (PPP)

Model public-private partnership, which proved to be a "premise of success in financing projects of public importance" is going in the countries in the region and beyond. Developed from the nineties of the last century, and has a growing importance in the European Union. This model in the wider sense means the cooperation of public and private sector, where each party involved with its resources, including the process of planning and decision-making. In the narrow sense means the strategic cooperation of public and private sector jobs in the construction of infrastructure and provision of public services. Public sector in fact through this model combines the resources of their own resources with the private sector. In the public sector appears as the bidder (defines the type, scope and conditions of work), as a private partner to be chosen for specific work and quality and conscientiously enforce the obligations undertaken under the public interest.

The world is currently, the model of public-private partnership, funded around 130 projects in road infrastructure (at least the individual value of that million dollars). The closest example comes from Montenegro, where they

will build a state highway Bar-Boljare with one of the private companies that have applied for participation in this project. In Bulgaria, are, in addition to state companies, and in the construction of the highway Sofia-Burgas, according to the model of public-private partnership, part of Portugal three private companies. Poland already has five partners from the private sector for use and construction of road network. Contracting arrangements in the form of public-private partnerships today, but slowly transformed into a multinational area of investment decision-making, and implementation of modern models of financing, with greater participation of private capital in projects of public interest, can significantly improve the economy of each country and the life of its citizens.

In this kind of partnership only in its infancy, and is insufficiently developed. On the development of partnerships between private-public sector will influence the legal regulation, which is expected this year. Advisor to the Vice President of the Serbian government for Economy and Finance Goran Radosavljevic in November 2008 in the seminar that studied this topic, said that in Serbia a few laws (Law on Concessions, Law on Local Self-Government and other acts) include the possibility that activities that are of general interest and the private partner. However, the area that is not regulated enough, the obligations and the manner in which this partnership creates. Stressing that such a "great legal uncertainty for investors," Radosavljevic said a draft law on public-private partnership sector exist, and to a legal act should regulate the whole area, while everything that does not fall under private-partnership public sector was regulated by the Law on Public Procurement.

## **8. STAFF FOR CONTACT WITH CUSTOMERS AND CONSUMER SATISFACTION**

Persons who deliver services are of key importance for consumers which provide services and for employers, because it represents service organization and affect its reputation. Service staff includes the members of which are in contact with the consumer - staff contact those members of service organizations that are not in contact with customers. See that the result of services provided most influence by the nature of relations between staff organization and its customers.

Given that executives spend most time managing other people, Peter Draker emphasizes that no other decisions are not in the extent long-term consequences, which is very difficult to prevent, such as to make personnel decisions. However, generally speaking, executives still make bad personnel decisions, which significantly reflect on the performance capacity of the organization. It is believed that the percentage of good personnel decisions does not exceed 33%, respectively, in the best case one-third of such decisions turn out to be good, one third of the minimum effective, and one third is complete failure.

While for some organizations working with human resources, only a secondary thing, for other organizations is of so great importance to the business activities to a particular area. How this form of management is so important for an organization, it is possible to conclude examining two aspects of the employee's personnel:

- ratio of total costs that are presented through the cost of staff and
- importance of employees in direct contact with customers.

The importance of management of human resources is reflected in the level of competitiveness of the organization. On one side there is a highly competitive environment in which profit-motivated organization of work, such as, for example, fast food restaurants, which must ensure that such staff will meet the needs of consumers in the speed, courtesy and accuracy better than the competition. On the other hand, there are organizations that work in the so-called protected markets, such as public services, which may themselves to afford less turning to the needs of the user which is reflected in the management and human resources.

Staff of public sector services with one hand, includes employees in the public sector, and on the other hand the present tendency of increasing the number of employees who provide public services, which are under the control of the private sector. In this regard, the question of how much the state can go far in the use of market mechanisms, as well as the implementation of privatization in order to provide citizens effective and efficient provision of public services. However, there is no universal and acceptable the answer to this question.

Determine the movement of employment in the sector of public services is not a simple task, because in many countries, not statistical evidence of water that would cover the many activities that are within the competence of the public sector and private perpetrators. A special problem is the development of statistical review at the municipal level, where it is often not recorded engagement of workers of private services, which are related to some activities that are of limited time duration or very rarely in the course of the year appears to need them.

According to UN sources (World Public Sector, Report, 2001) employed in public administration consists of 7.8% of the population of developed countries, 10.1% of countries in economic transition and 3.4% in developing countries (of which 1.9% related to Africa, 5.4% in Latin America and the Caribbean and 3.5% in Asia and Oceania).

According to OECD sources (in Figures, 2002) in the period since 1992 to 2002 The recorded fall in employment in the public sector and defense in Austria, Germany, the Czech Republic, Poland, R. Slovakia and Mexico. Particularly low percentage of employees in public administration is in Japan - 3.3%, R. Korea - 3.2%,

New Zealand - 3.2% and Switzerland - 3.8%. On the other hand, Belgium and France have a relatively high percentage of employees in public administration and defense, which is about 10%. Employment in education, health and social institutions is a general high, and highest in Sweden - 38.4%, Japan - 34% and Norway - 30.9% of the total number of employees.

Passing the right personnel decisions is extremely proper means of managing the organization. Such decisions reveal how competent management, what are his values and whether their job seriously. However the managers tried to keep their decisions in secret, personnel decisions can not be hid. They are extremely visible.

Consumers are the foundation of every service, and they are subject clerk in the service needed. Satisfaction of customers of public services is a basic element in the process of acquisition and improvement of their loyalty. In addition, established feedback from customers is a key element in measuring and managing customer satisfaction. This feedback is a very important source of information that responds in the event to make lower level of satisfaction. As a result of lower levels of satisfaction of consumers of public services there are large costs for service provider, which is reflected in lost profit on the basis of lost customers and the large investment in marketing.

From the point of view of consumers of public services, satisfaction is the essence of satisfying the expectations of consumers or overcome, and the highest level of enthusiasm is the same user. Referred to satisfaction is a continuous process, which neither begins nor ends with the purchase of products or services, but includes all phases of the selection of products and services to purchase services and continues through the subsequent care to re-purchase.

The task of management is the management of operations, in a way that will allow employees in the corporate entities that provide services to provide customers a high level of satisfaction. Besides, interaction with customers must be in the same plane with the quality of the key product or service that provides economic entity. In the economic entities that provide top-quality satisfaction of customers, each of the employees has a significant role in this process. Customer satisfaction has a huge impact on the retention and attraction of new customers. The costs arising due to lost customers most often exceed the cost of the effort to improve their satisfaction. Long-term customers or customers who repeat purchase consumer group representing most of each phase. Their satisfaction is achieved with relatively small marketing efforts, of course, allows greater profitability. This group of consumers has a desire to spend more, and often become the best ambassadors of the service entity through word of mouth communication.

Due to high consumer dissatisfaction in the sector of public services, the largest number of this type tries to give them full satisfaction. Analysis of dissatisfied customers, establishing feedback systems designed for the management of complaints and providing service guarantees management of public services city levels of satisfaction.

To public administration was oriented to the user, must make all efforts within the limits of your budget to meet their needs and desires. When the introduction of concepts based on the users of services, public administration, which is engaged in providing services, must take into account two important factors: the performance of services and feel that the staff leaves the users. Performance criteria services may be: the availability, uniqueness, quality, reputation, contemporary, reliability, etc.. However, while the possible characteristics of the staff leaves a positive impression (ready to help, clear, careful, friendly, correct, educated, trained, professional, professional, etc..), The purpose of marketing in the public administration in creating and promoting a good image of the organization.

In the public administration of our country it is necessary to conduct the necessary reorganization, rejuvenate employees, organize training courses and seminars in the field of management and marketing, and in this way affect the changes in respect of employees to service users. Increase supply and competition in the labor market of the professional staff, will also significantly affect the serious approach of bureaucracy as service provider in the public sector.

Grounded in the belief that public sector organizations must be primarily accountable to develop services, to the mood in the internal and external environment changing, the new directions of development of the management of development of public sector organizations are to decentralization. Developed countries, in accordance with the decentralization, make the changes in the laws that undoubtedly decentralize public sector, and fundamentally change the role of the center (the Committee, the Director).

When the public sector, must be reconciled rational goals and public reactions those which services, starting from system analysis and prediction factors of the environment and on the basis of the established mission, formulating philosophy, establishing the regime of work, setting goals, developing the strategy, structure etc., which should have in mind the specificities of the public sector, its uniqueness.

For the functioning of modern society public services are essential, and moral reasons require their universal availability to all citizens. Guarantee sustainable service delivery of high quality management is a constant activity, which is in addition to training and motivating staff focused on the monitoring of consumer satisfaction. New trend, present more than 15 years, is a public-private partnership, which, if it is legally regulated and recognized enough, may have a crucial role in the development of the economy.

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## **MODEL OF PROCEDURE FOR MANAGEMENT REVIEW (ISO 9001:2000)**

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**Summary:** *This paper shows concrete model one of the most important QMS ISO 9001:2000 procedures that defines all the activities, privileges and responsibilities for conducting QMS audit by the highest leadership. The paper main object is to provide assistance and necessary explanations to draft this procedure in specific cases, through the technique of procedure modeling. We find it very important to maintain continuous monitoring and process measurement, relationships with customers and suppliers, to take care about their satisfaction, and the philosophy of modern markets. It is not enough that company reduces the control quality on the final check that is performed at the end of production lines. Quality must permeates through the whole organization and it needs to be related to the production process, from the very beginning until the end. Because of that, within the QMS there is a procedure which defines those processes, and whose model is presented in this paper.*

**Keywords:** *ISO, QMS, Procedure, Management.*

### **1. INTRODUCTION**

Let's begin with history and short description of ISO Organization. ISO is International Organization for Standardization, responsible for the ISO 9000, ISO 14000, ISO 27000, ISO 22000 and other international management standards, located in Geneva. Term ISO is derived from Greek's word "ISOS" = EQUAL [5]. There are some basic facts related to the ISO – International Organization for Standardization as follows [5]:

- International Organization;
- Located in Geneva (Switzerland);
- 130 members currently;
- 3652 technical commissions (sub commissions – SC, working groups – WG);
- International Standards are recommendations for national standards standardization;
- Direct applicability;
- Close cooperation with IEC (The International Electrotechnical Commission).

ISO Organization is NGO Organization (Non –Governmental Organization), initially started with his work in Electrotechnik area through IEC (The International Electrotechnical Commission) established in 1906. Activities began in 1946, when 25 states founded the New International Organization. Finally, ISO Organization has established in 1947 [5]. The 120 members are not representative of their own states but delegation of national standardization institution, each for every country. By the beginning (1947) until today, ISO creates and publishing standards from following technical areas:

- Mechanical engineering,
- Chemistry,
- Metals,

- Nonmetals,
- Civil engineering,
- Agriculture,
- Graphic and photography,
- Health and medicine,
- Stream of information,
- Environment,
- Goods packing and distribution.

ISO 9001 Quality System integration with others Quality Systems [5]:

- ISO 9001 (for Quality System);
- ISO 9001 + ISO 14001 (environment protection);
- ISO 9001 + ISO 14001 + work safety;
- ISO 9001 + ISO 14001 + HACCP Hazard Analysis and Critical Control Points (medical protection) – *for food industry*;
- ISO 9001 + ISO 14001 + HACCP + fire protection + work safety – *for Hotels*.

## 2. BASIC PRINCIPALS RELATED TO THE ISO 9001:2000 STANDARDS

There are eight basic principals related to the ISO 9001:2000 standards [1] and [2], from focusing the customer till mutually useful relation with supplier.

### ❖ First principle: Focusing the customer

Organization depends on their customers. Therefore, organization should follow current and identify new needs of their customers, fulfill their requirements and try to meet their expectations.

### ❖ Second principle: Management

Management constitutes purpose and organization direction. It has to create and maintain internal surrounding whereas people become entirely involved in accomplishing organization aims.

### ❖ Third principle: Involving participants

Participants on all levels are the main organization value and their complete involvement in process makes usage of their abilities for organization benefit.

### ❖ Forth principle: Approaching the process

Expecting results will be efficiently accomplished if resources and activities are managed in a way of handling processes. Process approach makes easier for the individual to recognize their participation in organization enables measuring of their involvement and encourages motivation.

### ❖ Fifth principle: System approach to the management

Identifying, understanding and managing mutually related processes as unique systems increases performance and efficiency of organization in accomplishing its goals.

### ❖ Sixth principle: Constant improvement

Constant improvement of all performances should be permanent organization goal. Focusing the customer and need to evaluate his satisfaction will surely encourage the process of permanent improvement of market requirements.

### ❖ Seventh principle: Fact based decision making

Efficient decisions are based on accurate data analyses. Basically, one could say that system quality does not function while there is no objective proof of its efficiency.

❖ Eighth principle: Mutually useful relation with supplier

Mutually useful relation with supplier increases possibility for each organization to create values. Establishing such relations with suppliers, that balance long and short-term interests, makes trust and partnership that makes easier planning, mutual appearance and existence for both sides as well as optimization of expenses and resources.

Considered to be that the more important Quality System Management standards are:

- ISO 9004:2000 – extended ISO 9001:2000 – more advanced;
- ISO 14001:2004 – environment protection;
- ISO 18000 (OHSAS) – extended work safety;
- ISO 22000 (HACCP) Hazard Analysis and Critical Control Points – food control.

The ISO 9001:2000 standards are not technical standards but quality system standards i.e. organization and management standards. It is necessary to understand that European and world market can not be conquered by using low prices anymore. Today, European and world market can be conquered with high quality of products and services only. Also, it is necessary to accept that “production is important” time is all over behind us and to act in accordance with that knowledge. In addition, it is necessary to accept that time when states defended domestic producers from international competition with his mechanisms is past, i.e. “market of producers” becomes “market of customers”.

The philosophy that we using does not functioning anymore:

$$\text{Selling price} = \text{Cost of production} + \text{Profit}$$

The market dictates selling price. It is necessary for every firm to achieve profit if firm wants to survive in the open market, by the following equation:

$$\text{Profit} = \text{Selling price} - \text{Costs}$$

The main question is: How we can reduce the costs?

The answers are:

- |  |  |
|--|--|
| a) Reduction of customer complaints,       | f) Permanent monitoring,                         |
| b) Reduction of supplier complaints,       | g) With analysis and process measuring,          |
| c) Better work organization,               | h) With selection of adequate working techniques |
| d) Quality improvement,                    | i) IT implementation                             |
| e) With Corrective and Preventive actions, | j) Other actions.                                |

### 3. CUSTOMER SATISFACTION

One of criteria for quality system standards implementation is that organization should control information about customer impression if organization accomplished his requests.

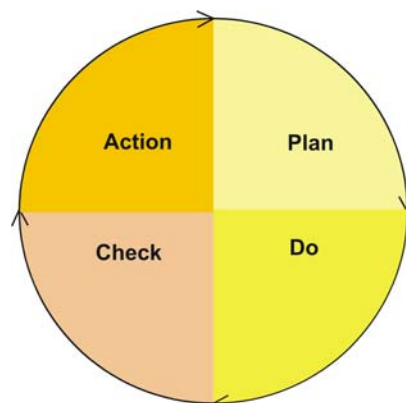
Now, we are going to present different types of Customer's psychology [5]:

- *Mute satisfied customer.* Impression and satisfaction by product or service will transfer 70% of that kind of customers.
- *Talkative dissatisfied customer.* Dissatisfied customer will recount his disappointment very often i.e. 7 to 10 times more then satisfied customer.
- *Dissatisfied customer – quiet fugitive.* Minority of dissatisfied customers will warn salesman about his disappointment, and a very few of them will give his advice (5%). Majority of them will just disappear from salesman's site without any notification.
- *Impulsive buying.* When customer goes to the store and begins with shopping, he is going to buy much more than he really needs. As store is bigger the percentage of impulsive buying increases (Up to 50% in US shopping malls).
- *Customer – Beforehand unfriendly liable customers.* If the customer has negative attitude beforehand, at the beginning it's necessary to start with the strongest arguments. If the positive attitude is predicted in advance, the most influence arguments should be kept for effective end.

- „Good hearted“ customer. On salesmen's first mistake, regular satisfied customer will respond forbearingly (95%).
- *Communicative customer.* Intelligent, self confident and cocksure person likes two-way communication with salesmen (asking, mutual conclusions). When they find communicative salesmen this characteristic becomes plus for salesmen in customer's eyes. Insecure persons asking less and rather listening, it is possible and necessary to lead them through the buying process.
- *Routine buying.* For routine and repetitive buying the customer does not want emotional or physical engagement. The customer wants to finish buying process as fast as it possible by automated process and have no memories about it (bread, newspapers, gas).
- *Low-cost – expensive promotion.* Promotion investing (letters, ads, commercials, catalogues, conversations) for runaway customer reverting is up to 20 times more expensive then finding the new one. On the other hand, for keeping satisfied customer investments are negligible.

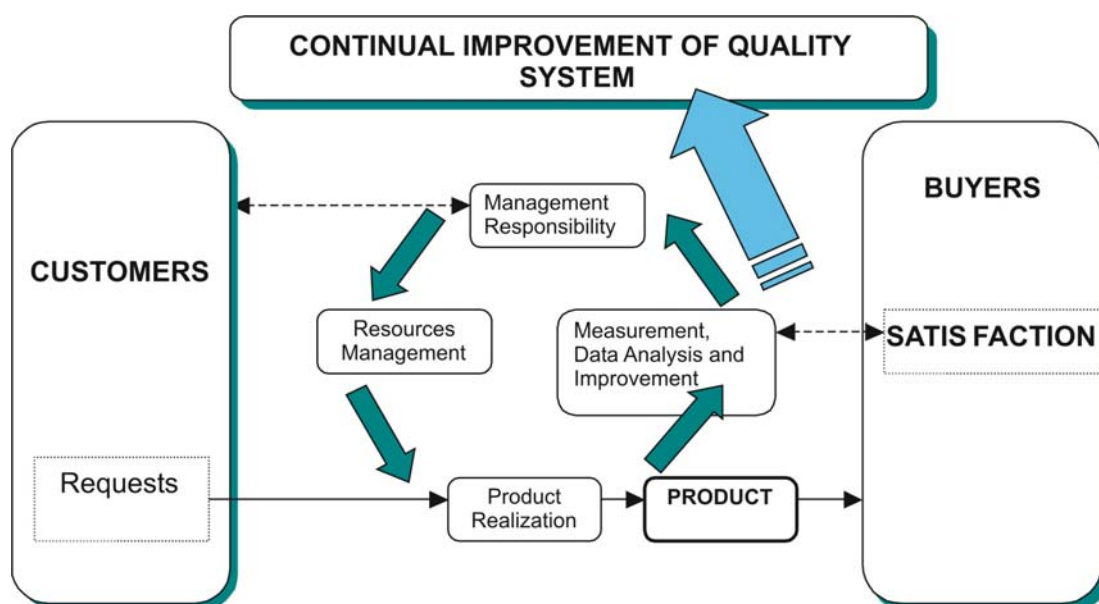
Organization should apply appropriate methods for monitoring, and there where monitoring is already applied it is necessary to have measuring the processes of quality system management. Used methods should indicate capability of each process to achieve planned results. When planned results are not achieved it is necessary to start corrective actions, if it is suitable, to provide product compatibility.

We can see (Figure 1) a model developed by Deeming (1986) called Total Quality Management (TQM).



**Figure 1:** Deeming Circle

Organization should accomplish act of control process and measuring product's parameters, in order to verify product request fulfilment.



**Figure 2:** Process-based model of Quality Management System.

Figure 2 (Source: Created by author on the base of [5], pp. 50) shows process-based model of Quality Management System. It is necessary to implement these activities in adequate stages of product implementation process, in accordance with planned activities. Records should clearly refer on person who approves product delivery. Products and services have not to be delivered until finished planned activities, besides if it is approved by relevant authority and customer, when it becomes applicable.

## **4. PROCEDURE FOR MANAGEMENT REVIEW (ISO 9001:2000)**

### **4.1. THE PROCEDURE PURPOSE**

The procedure purpose is defining all activities, responsibilities and authorities for implementing quality management system by top management, and defining inputs and outputs of control [1] and [2].

### **4.2. PROCEDURE IMPLEMENTATION FIELD**

Procedure is implementing by all manufacturers involved in preparing and control implementation of quality management system [3].

### **4.3. PROCEDURE COHESION WITH OTHER DOCUMENTS**

- EN ISO 9000:2000 - quality management systems: basis and dictionary;
- EN ISO 9001:2000 - requests;
- Manual for creation, distribution and revision of QMS procedures and manuals [1] and [2];
- Manual for format, content and identification of QMS procedures and manuals [1] and [2].

### **4.4. DEFINITIONS, MARKS, SYMBOLS, ACRONYMS USED IN PROCEDURE**

#### **4.4.1. Definitions**

- Control – activity undertaken in purpose of defining object suitability, adequacy and effectiveness, and for executing affirmed objects (EN ISO 9000:2000) [2];
- Top management (Board of directors) – person or group which manage and control organisation at the highest level (EN ISO 9000:2000) [2];
- Quality politics – total purposes and organisation directing in relation with quality, openly expressed by top management (EN ISO 9000:2000) [2];
- Quality object – something it's required, or something that represents main object, in relation with quality (EN ISO 9000:2000) [2];
- Audit – systematic, independent and documented process for impartially estimation in order to define the level of audit fulfilment criteria (EN ISO 9000:2000) [2];
- Customer – organisation or individual take over products (EN ISO 9000:2000) [2];
- Process – set of connected and interactive activities that transform inputs to outputs (EN ISO 9000:2000) [2];
- Impartially verification – data that ground existence and authenticity of something (EN ISO 9000:2000) [2];
- Protocol – document that quotes reached results or evident about completed activities (EN ISO 9000:2000) [2].

#### **4.4.2. Marks and symbols**

Not applicable in this specific case [4].

#### **4.4.3. Acronyms**

QMS – Quality Management System;  
QMR – Quality Management Representative.

## **4.5. APPLIED ACTIVITIES**

### **4.5.1. Pre-processing**

QMS control is executed annually, by the end of first quarter of current business year. Rarely, if mismatched indications are identified, indications about insufficient effectiveness or about inadequacies in relation with demands and customer expectations, then top management undertakes extraordinary control process. Within a framework of meeting executive officer defines next:

- Agenda,
- Names/system of functions that will be involved in auditing,
- Analysis and reports that have to be prepared by invited employees,
- Place and time of meeting,
- Authorities and responsibilities for preparing analysis and reports.

Meeting avocation for control process is sending by letter, in advance defined schedule before meeting (author suggestion: one month before meeting), in order that all invited have time to prepare. Avocation for meeting represents QMS record and it is under control, according to Procedure for control of records [6]. If it is about extraordinary control process, avocation for meeting is sending by letter, in advance defined schedule before meeting (author suggestion: at least 15 days before meeting).

### **4.5.2. Inputs audit**

Top management input demands for audit inevitable includes:

- Results of internal audit,
- Customer feedback (reclamation, approvals, admissions, expositions for unaccepted offers, others audit results, etc),
- Results of audit, measuring and products and processes oversight,
- Corrective and preventive action status,
- Results of past top management fulfilment conclusions,
- Expected or planned changes by organisation or by customer, which can affect QMS,
- Recommendations for improvement.

Next to inevitable internal requests, director will decide and about additional internal requests, for which he considers it's necessary to examine, and he will specify them in meeting avocation, and that requests are:

- Politics review and/or quality organization objects,
- Customer satisfaction measuring results, when it's suitable,
- Financial activity effects in relation with quality,
- Market study/analysis valuation,
- Supplier evaluation results.

During a valuation decisions and rates are carried on the prepared analysis and reports basis. During the meeting, decisions and rates are recorded in documentary protocol, that represents record of QMS and it is under control, according to Procedure for control of records [6]. Brought decisions have to be measurable activity result and they have not to disorganize current QMS configuration. Decisions and activities derived from it represent audit outputs.

### **4.5.3. Outputs audit**

Audit outputs inevitable include decisions and actions in relation with:

- Effectiveness improvement of QMS and QMS processes,
- Product improvement in relation with customer requests and expectations,
- Required resources, in aim to:
  - Increase a value for stakeholders,
  - Improve product and process performances,
  - Adapt organisation structure and resources,
  - Allow venture management,
  - Business activity according to valid statutory requests,
  - Plan future resources.

Quoted outputs are noted in Protocol, in which director specify responsible individuals for executing this decisions and actions, as well as terms, and reporting about it [2].

#### 4.6. RESPONSIBILITIES AND PRIVILEGES

This procedure sets responsibilities and privileges for implementation of certain activities in the process of reconsideration by top management.

**Table 1:** The responsibilities and privileges of certain activities [3]

No.	Activities	Responsibilities and privileges for implementation
1.	Analysis preparations for internal audit results	Organization unit managers in which internal audit were conducted.
2.	Report preparations about third party audit	QMR
3.	Analysis preparations for customer feedback	Marketing and commercial unit Manager
4.	Analysis preparations for introducing new product on the market	Output organization unit Managers
5.	Analysis preparations about product and process performance	Output organization unit Managers
6.	Analysis preparations for business conformity with current legislation	Legal and General Administrative Service Manager, Financial and Accounting Service Manager
7.	Report preparations about correction and prevention actions status	QMR
8.	Analysis preparations for past research results of decisions implementation	General Manager (CEO)

Source: Turudić, L. & Kovačević, S, pp. 4-5

#### 4.7. APPENDIX

Not applicable in this specific case [4].

#### 4.8. LIST OF EMPLOYEES WHO HAVE ACCESS TO THE „PROCEDURE FOR MANAGEMENT REVIEW” DOCUMENT

All employees in the company have access right to the „Procedure for management review” document. Their access rights are defined by „Procedure for control of documents” [7].

### 5. CONCLUSION

ISO 9000 is not a mark for product/service quality or a guarantee of its quality. Also, ISO 14000 is not a mark for “green” or a mark for “environment acceptable product”. When an organization have a quality management system certification it means that an independent reviewer confirmed that all the processes influence on product/service quality (ISO 9000) or environmental impact of organization (ISO 14000) coordinated with standard requirements. So, ISO 9000 is a mark for an organization processes quality that creates product or service.

It’s not enough for an organization to reduce quality control on final product verification. Quality must permeate an entire organization and complete manufacturing operation, from the beginning till the end.

In this respect, total quality management includes:

- Set of ideas and manufacturing operations that provides a better quality, productivity and valuable of all working activities
- Increasing customer satisfaction and organization financial performance, and additional stimulating of employees to work better by raising their moral and pride.

Therefore within the QMS there is procedure that defines and provides responsibilities and privileges for executing certain activities in management reconsideration process – the model that we represent in this paper. All employees, involved by management in preparing and realization reconsideration of quality management system, must apply this procedure.

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**СОВЕРШЕНСТВОВАНИЕ СИСТЕМЫ МЕНЕДЖМЕНТ-  
ОБРАЗОВАНИЯ - СПЕЦИАЛИСТОВ В ОБЛАСТИ  
КОРПОРАТИВНОГО УПРАВЛЕНИЯ, ПРОМЫШЛЕННЫМИ  
ПРЕДПРИЯТИЯМИ**

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**Резюме:** *Определен перечень требований к качеству подготовки руководителей промышленных предприятий. Рассмотрены основные направления совершенствования менеджмент – образования руководителей и специалистов. Визначений перелік вимог до якості підготовки керівників промислових підприємств. Розглянуті основні напрями вдосконалення менеджмент – освіти керівників і фахівців.*

**Summary:** *The list of requirements is certain to quality of preparation of leaders of industrial enterprises. Basic directions of perfection are considered a management is educations of leaders and specialists.*

**Ключевые слова:** менеджмент, качество, Современные промышленные предприятие

Современные промышленные предприятия Украины, работая сегодня в непростых условиях нарастающего экономического кризиса, несут на себе тяжёлое бремя груза от несогласованных решений, инфляции, разрыва межхозяйственных связей, нестабильного законодательства, высокого налогообложения, ухода квалифицированных специалистов, затоваривания складских помещений готовой продукцией и д.т. В данный период для промышленных предприятий машиностроительно-металлургического комплекса Донбасса большое значение имеет вопрос организации и обеспечения эффективности корпоративного управления, которое на основе управления корпоративным капиталом и корпоративными правами акционеров должно обеспечить сбалансированное управление предприятиями. Методам, подходам и практическому осуществлению эффективного управления промышленными предприятиями региона посвящён ряд научных трудов известных учёных-экономистов и управленцев-практиков Донбасса – Амоши А. И., Чумаченко Н. Г., Губерной Г. К., Макогона Ю. В., Панкова В. А., Еськова А. Л. и др. И практически, в большинстве из них, просматривается проблема, связанная с подготовкой нового поколения менеджеров всех уровней управления, которые могли бы управлять современными промышленными предприятиями и их подразделениями.

Современные менеджеры могут действовать в различных организационных структурах, создавая творческие коллективы, занимаясь поиском и распространением новых методов управления. Они управляют производственными коллективами, координируют ведение бизнеса, поэтому должны обладать научно-техническим и экономико-психологическим потенциалом, инженерно-экономическими знаниями, качествами традиционного менеджера и ученого-исследователя, быть квалифицированными экономистами, способными оценить эффективность работы предприятия или вверенного им подразделения.

Всё выше сказанное свидетельствует о необходимости подготовки достаточного числа образованных специалистов в области менеджмента, владеющих достаточно широким набором знаний и умений, способных работать в условиях риска, растущей конкуренции, постоянных изменений в бизнес-среде и трансформаций в экономике. Эти требования должны выступать движущей силой высокоэффективной подготовки конкурентоспособных менеджеров, спроса на них и являются определяющими при

формировании содержания учебных программ подготовки бакалавров, специалистов, магистров и послевузовского обучения.

Накопленный опыт подготовки специалистов по управлению – менеджеров в Донбасской государственной машиностроительной академии позволил сформулировать основные концептуальные отличительные особенности менеджмент - образования в техническом ВУЗе.

1. Специализация подготовки – производственный менеджмент, т.к. основными базами практики и будущего места работы для большинства студентов являются ведущие промышленные предприятия Северного Донбасса.

2. Другая особенность подготовки специалистов и переподготовки работников промышленных предприятий заключается в том, что большинство из этих предприятий являются крупными. Их отличает мультипликация нововведений технического, организационного или экономического характера и получение мультипликационного эффекта; крупномасштабная инновационная политика; возможность концентрации и последующего инвестирования большого объема ресурсов [1]. Поэтому необходимо готовить специалистов по интегральному управлению процессами развития всех сфер функционирования предприятия: контрактной деятельности, экспортно-импортных операций, обеспечения конкурентных преимуществ, расширения инновационной и инвестиционной деятельности, мотивации труда и карьерного роста персонала, информационного обеспечения функционирования предприятия, финансового менеджмента.

3. Разрабатываемые новые курсы соответствуют таким актуальным и перспективным направлениям как: антикризисное управление, управление инновациями, логистика, стратегический менеджмент, управление проектами, инвестиционный менеджмент, организация труда менеджера, управление деловой карьерой и др. Все ведущие учебные дисциплины включают рассмотрение конкретных ситуаций, прежде всего разработанных на отечественных примерах. Большое значение придается обучению профессиональным навыкам менеджеров, направленных на развитие лидерства, коммуникационных способностей, тайм-менеджмента, навыкам и технологиям презентаций.

4. В соответствии с требованиями практики и развитием отечественной и мировой науки в области менеджмента в ДГМА постоянно проводится значительная работа по совершенствованию структуры профессиональной подготовки, переподготовки и повышения квалификации специалистов. Переподготовка и повышение квалификации управленческих кадров рассматривается как одна из ключевых задач высшей школы по обеспечению промышленности Украины современными профессионалами-управленцами.

5. Главной задачей системы подготовки и переподготовки , инженерных и управленческих кадров, в рамках образовательной системы предприятия, является формирование такого интеллектуального капитала, который бы давал технические, технологические, организационные и социокультурные преимущества над конкурентами. Одним из важнейших стратегических ресурсов предприятия в нынешних условиях становятся знания и умения инженерно-технических работников и менеджеров всех уровней управления. Конкурентоспособность руководителя (лидера) должна базироваться на прочной системе усвоенных знаний в области науки управления, экономики, техники, информационных технологий, психологии человеческих отношений [2].

В настоящее время система дополнительного профессионального образования в академии получила качественно новое развитие. На базе ДГМА и Закрытого акционерного общества Ново-Краматорский машиностроительный завод сформирована школа корпоративного промышленного менеджмента, которая направлена на решение таких задач, как:

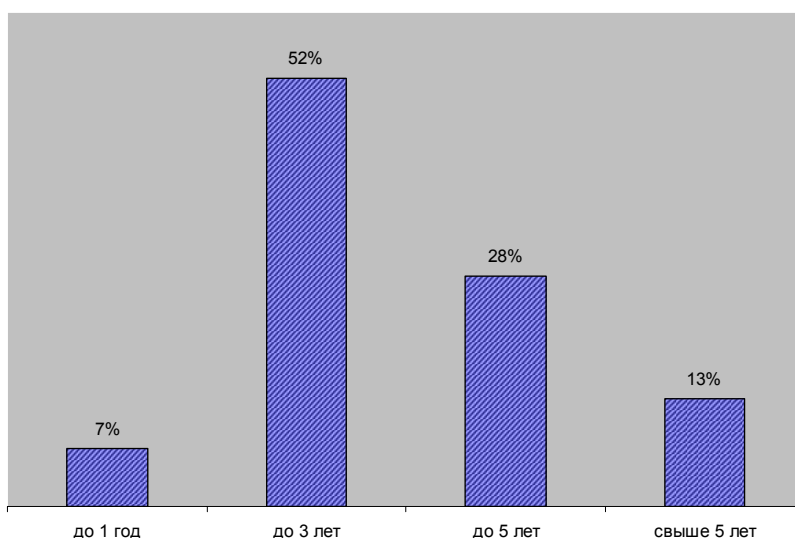
- - формирование философии современного управления предприятием;
- - разработка и усовершенствование экономических методов управления;
- - осуществление качественного анализа, оценки и прогнозирования эффективности производственной и коммерческой деятельности современного предприятия и его подразделений;
- - повышение эффективности комплексного исследования рыночной конъюнктуры и оценки внутренних производственных ресурсных возможностей при планировании и разработке концепции стратегического развития предприятия;
- - разработка и использование методов оценки внедрений, связанных с развитием техники и технологий с целью обеспечения конкурентоспособности предприятия;
- - планирование, организация производственно-хозяйственной и финансовой деятельности и проведение управленческого контроля с целью обеспечения экономического роста предприятия;
- - более детальное рассмотрение вопросов психологии управления, усовершенствования межличностных и межгрупповых коммуникаций;
- - повышение значимости менеджера на предприятии, усовершенствование управления личной карьерой работника;
- - использование передовых методик научных исследований в области управления и преподавания в высшей школе.

6. Общая работа, которую проводят на протяжении последних лет ДГМА и ЗАО НКМЗ в направлении подготовки и переподготовки управленческих кадров для машиностроительного производства, охватывает не только перепроектировку традиционных процессов управления и повышение эффективности кадрового потенциала, но и формирование интеллектуального капитала предприятия, прежде всего на основе индивидуального развития работников (биореинжиниринга).

7. Сегодня производство товаров высокого качества и с достаточно низкой ресурсоёмкостью является важнейшей заботой каждого предприятия и составляющей его конкурентоспособности. В связи с этим необходимо внедрение новой модели управления предприятием, как сложной открытой продуцирующей бизнес-системой. Кроме того, подавляющее большинство предприятий региона – акционерные общества, начавшие применять корпоративное управление, которое требует руководителей – лидеров, наставников, консультантов. Следовательно, менеджмент – образование должно готовить именно таких специалистов в области управления.

8. Важным условием достаточного для предприятия, на первое время, уровня подготовки управленческих кадров должно быть усиление их практической подготовки путём моделирования в учебном процессе будущей профессиональной деятельности и внедрения программы подготовки специалистов «3–2–1», позволяющей наиболее полно реализовать потенциал студента на промышленном предприятии после окончания ВУЗа.

На кафедре менеджмента ДГМА были проведены исследования, позволившие определить некоторые тенденции, связывающие рынок труда и систему менеджмент-образования. Исследовались крупные промышленные предприятия городов Краматорск, Славянск, Дружковка, Константиновка, Харцызск. Респондентами были руководители предприятий, крупных подразделений и кадровых служб, которые определили минимальные требования к претендентам на должности специалистов управленческих подразделений предприятий и менеджеров низшего звена по уровню производственного опыта (см. рис. 1).



**Рисунок 1:** – Производственный опыт, необходимый для лиц, поступающих на управленческую работу.

Как видно из полученных результатов исследования 80% респондентов считают, что на промышленном предприятии кандидат даже на низшую управленческую должность должен иметь производственный опыт 3-5 лет.

Что касается образовательного уровня подготовки молодых специалистов – менеджеров, необходимых промышленным предприятиям региона, то данные опроса распределились следующим образом:

- - младшие специалисты – 3%;
- - бакалавры – 7%;
- - специалисты – 75%;
- - магистры – 15%.

Такой результат говорит о том, что в Украине даже после подписания Болонской декларации, до сих пор нет чёткой увязки образовательных уровней с классификатором профессий Министерства труда и социальной политики, а также со штатным расписанием промышленных предприятий. На многих из них ещё даже не предусмотрено, на каких рабочих местах должны работать бакалавры и младшие специалисты по менеджменту.

Определялись также те качества, которыми по мнению работодателей должны обладать менеджеры промышленных предприятий, и те, которых не хватает молодым специалистам – менеджерам (см. табл. 1).

Проанализировав полученные данные можно утверждать, что выпускникам ВУЗов для работы на промышленных предприятиях в качестве специалистов - менеджеров в основном не хватает таких важных, по мнению работодателей, умений и качеств, как умение работать в команде, лидерство, самостоятельность в принятии управленческих решений, смелость принимать на себя ответственность за рискованные решения, чёткая формулировка распоряжений, подготовка и восприятие деловой информации.

**Таблица 1:** – Перечень умений и навыков, которыми должны обладать специалисты – менеджеры и которых не хватает выпускникам ВУЗов.

Умения и навыки	Весомость	Мнение респондентов	
		Требуются	Не хватает
1. Умение самостоятельно принимать решения	0,16	65%	40%
2. Умение работать в команде	0,10	46%	38%
3. Профессиональная этика	0,07	39%	30%
4. Умение чётко формулировать распоряжения	0,07	40%	8%
5. Лидерские качества	0,20	68%	35%
6. Умение эффективно общаться	0,03	29%	40%
7. Владение компьютером	0,07	44%	32%
8. Навыки анализировать ситуацию	0,12	51%	50%
9. Умение воспринимать деловую информацию	0,12	60%	26%
10. Смелость риска	0,02	27%	35%
11. Умение подготавливать деловую документацию	0,04	30%	34%

Выполненные исследования свидетельствуют о том, что в системе менеджмент-образования специалистов по корпоративному управлению промышленными предприятиями имеются явные недочёты и пробелы. Необходимо охватить системой менеджмент-образования не только различные возрастные категории инженеров промышленных предприятий, но и студентов технических специальностей, обучающихся по заказам предприятий. Следует расширить возможности получения студентами технических специальностей второго диплома по менеджменту за время обучения в ВУЗе.

Все эти меры по повышению эффективности и внедрению программ менеджмент-образования в таком экономически важном и бюджетообразующем регионе, как Донбасс, позволят повысить эффективность управления и конкурентоспособность промышленных предприятий в рыночных условиях хозяйствования.

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## **IMPORTANCE OF E-BUSINESS FOR MODERN MANAGEMENT**

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***Summary:** Internet represents system that is consisting from all computer networks in world. It connects several dozens of people from more than 160 states. Neither one of spheres of modern human life cannot be imagined today without personal computers, and without Internet. From year to year competition on world market is growing and it getting more difficult for companies to, in that circumstances, survive. From long time ago it is crystal clear that it is not enough to be just average, but it is crucial to appear on market with products and services that are offering something new that can attract consumers. Regarding that, the biggest companies in the world are investing billions of dollars in research and development. Products and services are being innovated, as well as whole working processes.*

***Key words:** e-business, knowledge management, economic forces, knowledge transfer*

### **1. INTRODUCTION**

A company has to change constantly, and adapt itself to new circumstances in order to survive in turbulent surroundings. If a company wants to be the best and make considerable profits, it has to operate proactively, more exactly to foresee the events and meet them accordingly, to make changes and let others adapt to them. Of course, it is not easy to set conditions and rules of the game, and it is even harder always to be one step ahead of competition.

Precondition for successful dealing of a company in difficult conditions is to realize, in due time, the circumstances the company is in, the possibilities it possesses in order to achieve vantage over competition. Previous, 20th century was marked by information technology so that intellectual capital became the main weapon in the battle for survival and making profits. In the future, the only surviving companies will be the ones that have learned how to manage knowledge and realized that investing in staff training and development is the most important.

Intellectual capital, organizations that learn and human resources are describing new concepts- forms of economic values and as such they are already in modern economic dictionaries. The force of knowledge is the key reason connected with corporation success such as the use of high technology and increasing number of Internet companies.

E-business and knowledge management represent main components in advancement of an organization. 20th century was marked by information technology, and knowledge management became the main weapon in the battle for survival and making profits. In the future, the only surviving companies will be the ones that have learned how to manage knowledge and realised that investing in staff training and development is the most important.

### **2. E-BUSINESS**

E-business represents buying and selling information, products and services via computer network. Moreover, it is assistance for any kind of business transactions via digital network.

E-business leads to better quality, more pleasure for a customer, lower expenses and much faster exchange. In this way it is possible to exchange information between two or more entities that are using externally connected networks. Transaction includes exchange which takes place when some economic entity sells products or offers

services to some other entity. It also takes place when products or services are being transferred via technically separated interface which connects a client with a manufacturer (5).

Modern business on the Internet influences transactions between cooperationists, as well as market structure. Traditionally, bonds on a market are created according to exchange of products, services and money. E- business adds a new element- information.

Business on the net has developed in several different technologies:

1. production communication guided by demands
2. firms based on teams and grouping
3. business logistics
4. desktop video conferences
5. searching and preservation
6. electronic mail (communication)
7. electronic data exchange (procedure)
8. exchange of technical data (engineering)

Development of e-business concept is conditioned by the effect of economic powers, consumers and changes in technology.

Economic powers are a new concept in modern business which includes low prices of technical infrastructure which cuts costs, increases the accuracy of technical transactions with business partners, lowers the price of whole approach to information and gives companies opportunities to provide cheap services to customers. Economic powers motivate a trend of modern business concept, inside the company as well as in relation to surroundings. External integration includes making a unique area network of suppliers, government agencies, big corporations and other elements, in such way that it is possible to communicate easily via computer platform. In an organization where internal integration exist, incoming orders and information are automatically sent to production, but also to accounting department, sector for investments and top management. Internal integration also enables critical data to be digitally kept on data carriers which enables locating and electronic transfer at the same time. Key for both, integration is co-ordination of information flow.

The implementation of modern business in marketing provides better execution of marketing activities. First, establishing micro segments, and then creating new ways of providing services and assistance to customers, in order to provide more pleasure for customers. Products change very fast. In order to stay competitive, ones who deal in marketing have to develop methods to reach low prices for customers, connect with customers and gain their loyalty. Digital technology enables converting sound, picture and video clips. Also, all types of records can be combined, stored, easily and efficiently transferred in great amounts without quality loss. Multimedia revolution causes changes in domain of communication, entertainment, and publishing. Changes in technology, influence of multimedia and transition to distributional work in Internet environment, give strength to the concept of „digital integration“. Digital integration enables information and software shaping. It makes creating computer and net infrastructure possible, which enables co-ordination and integration of productive process with environment. Integration makes compressing and storing digital information possible, so that it can travel through cable or wireless system. Today, equipment ensures paths for voice, picture and video clips transfer. From business point of view, easier net approach and way of creating new delivery channels for new and old products, for current and new customers, is ensured.(6).

### 3. TYPES OF E-BUSINESS

There are three different sorts of modern business:

1-**Externally organized** (towards business environment) from the perspective of externally organized modern business, there are activities related to several factors:

-- **suppliers** -electronic applications help companies to reduce the number of suppliers and cut supply expenses for their business partners

--**supplies**-electronic applications shorten cycle order-delivery-bill (in case when business partners are electronically connected, it is possible to execute immediate transfer electronically instead using fax or post, which simplifies overlooking status of supplies, change in the status of supplies and preventing deficiency of supplies.

--**exchanging documents**- applications for transferring different documents such as bills, orders, or different demands, should provide faster and more accurate information.

--**channels for information distribution**- electronic application enables fast information expansion between business partners.

--**payment**- electronic applications connect companies with suppliers and distributors so that payments can be sent and received electronically.

**2-Internally organized (within organization)**-most applications used for dealing within a company serves as a help in case of overcoming critical relations. Integration of different functions in a firm from the point of modern business enables:

--**group communication**- these applications enable communication between managers and employees via electronic mail and video conferences. The aim is to use technology in order to execute distribution of information and inform employees more successfully.

--**electronic publishing**- these applications enables companies to organize existing staff and resources within the organization. With tools like WWW it is possible to for companies to inform employees the best way possible. The aim is to provide information which will simplify the process of making strategic and tactic decisions in organizations. Also, on-line publishing instantly shows and distributes documents, delivers information faster and suppresses the ones which are not up to date.

--**sale increase**- these applications improve information flow between production and sale, between the ones who offer their products and services and consumers. With better integration with other parts of the organization, companies are able to ensure a better approach to the information market, which provides better strategy. The aim of this action is to allow firms to gather information about the market and to analyze information thoroughly.

**3-Business type consumer towards organization**- through electronic transaction, which takes place between consumers and the ones who offer their products and services, consumers learn about products via electronic publishing, buy products via Internet and get information about products via network. This way of running a business offers:

--**social integration** – electronic applications enable consumers to communicate via electronic mail, consumers' forum, chat, video conferences, etc.

--**personal finance management**- electronic applications enable consumers to simplify the process of making decisions about investments and regulating their finances by using on-line banking tools.

--**buying products and gathering information**- it is made possible for consumers to find on-line information about existing and new products and services.

#### 4. KNOWLEDGE MANAGEMENT

Knowledge management presents collective knowledge (including experience, skills, data and information) of one organization. It includes internal knowledge and the knowledge which is collected selectively from external sources in order to improve organization. Proper knowledge management enables individuals, in all levels of organization, access to information they need to do their tasks, thus giving contribution to fulfilling general aims of organization.

Knowledge management is a strategic application of company's collective knowledge and *I know how* for making profit and increasing its share on market. Assets or knowledge value (ideas, concepts, *I know how*) are made by computer gathering, storing, dividing and steering corporative knowledge. Advanced technologies enable exploring of cooperative mind in order to make new products established on knowledge. If knowledge is used in smart and strategic way it brings pure profits. (2)

Knowledge management covers three main activities: generating, codification and transfer. Generating knowledge includes all activities which convey new knowledge to individuals, group or organization. It includes activities such as crating, obtaining, synthesis, fusion and adaptation. Codification of knowledge is a kind of knowledge presentation which enables individuals and organizations to use it again. Knowledge transfer includes moving knowledge from one place to another and its absorption.

Generating, codification and transfer always appear so that management does not create these activities. Power of knowledge management is in the fact that it allows organizations to improve productivity of all activities and to give their value to group as well as to individuals.

The aim of knowledge management is to improve effectiveness of organization by increasing intellectual specialization and capability, to increase efficiency, reduce work repetition and to eliminate the work which can be automated.

Arian Ward created a categorization of internal and external factors which make knowledge management. Thereby he created elementary basis for organized knowledge.

Knowledge management can be so simple as if one has a list of well known experts or is communicating with one of them in order to find the best solution. Knowledge management is ability to, in relatively short time, find information which will enable everyone in organization to make the best decision, whether market conditions, product, service, process, activities planned by the competition, or any other information important for success are concerned.

Organization and individuals often gather more information than necessary to make a decision. Information which can be useful to organization (such as the number of consumers who are not coming back because of bad service

or bad quality) is usually not obtained because it is hard to get. Knowledge management is a way of gathering data which will enable obtaining helpful information.

Knowledge management shouldn't be considered as a new independent management strategy which should replace reengineering, quality or team work. Knowledge management gives organization other tools for improving possibilities, offering employees timely access to information. If advanced technologies are used the process becomes much faster. Computers and Internet enable exchanging and directing knowledge in a way which is not possible in a system based on paperwork. Mighty machines for browsing enable global search of data in search for information.(3)

Knowledge management demands ability to analyze and then efficiently target real values, knowledge and application in business. It means that employees must be able to analyze which sort of knowledge should be applied in order to achieve maximal effect and to react from time to time.(4)

Ability to analyze correctly, and then strategically react is the most important connection between knowledge management and profit.

In situations where reengineering tends to correct some process or ,by restructuring, to develop group into more efficient unit, knowledge management will be helpful before but also during and after restructuring.

## 5. CONCLUSION

Information Technology marked 20<sup>th</sup> century. Today, nothing can be imagined without application of advanced information technology which is exact consequence of correct usage of knowledge in research and development processes.

Possession of the right information in the right time enables individual or organization proactive behavior and timely reactions to changes. So that employees could use information correctly, a company must develop methods and ways of knowledge managing.

The aim of knowledge management is to improve efficiency and effectiveness of an organization, to allow employees in all levels of organization to use their knowledge, experience and their skills to obtain the right information which will help to achieve the aim of organization. That is, in fact, the most effective way of using intellectual capital in some work.

Development of an organization in the future will depend on the fact whether it invests enough money in training of its employees who are the most valuable of anything a company possesses. Human capital, that is intellectual capital should be the most important item in strategic planning in an organization. Neither most advanced information technology, nor the biggest and most up to date computer could replace a man and his knowledge and ability to use that knowledge adequately. Knowledge that employees possess and correct knowledge management are basis for an organization to achieve advantage over competition.

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## **COMPARATIVE TECHNIQUE IN CREDITWORTHINESS ESTIMATE**

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**Summary:** *An estimate of creditworthiness using the function of probability of a breakdown (Z-score) has been developed in 1968 at New York University by Prof. Edward Altman. Altman's function of probability of the breakdown (bankruptcy) measures financial health of companies and predicts the probability of the breakdown (bankruptcy) up to two years, using a counterweight system of usual business relations. It is significantly different from a traditional procedure of creditworthiness estimate comprising an estimate of financial balance, estimate of capital adequacy (indebtedness) and estimate of solvency. For the purpose of determining whether the mentioned procedures provide the same or different creditworthiness estimate, we have performed, on a concrete example, a comparison of the results obtained from the function of probability of a breakdown (Z-score) and of the results of traditional procedure, based on which the creditworthiness estimate is given. Both of the procedures have shown that they provide the results on the basis of which identical (same) and not opposite estimates of creditworthiness can be deduced.*

**Keywords:** *banking, creditworthiness, function of probability of a breakdown*

### **1. INTRODUCTION**

A creditworthiness of a company as a desirable infinity (point concern principle- principle of continuity) is comprised of the validity, namely the inner value of the overall business involved in an estimate of a capability settling obligations. The analysis of creditworthiness can be performed before and after the audit of financial reports and the provided report by an independent auditor, when in the end a conclusion of the analysis or the creditworthiness estimate is given. The creditworthiness estimate is given based on the creditworthiness analyses for the period of 3- 5 successive years of business operations.

The creditworthiness analysis can be performed by internal analytical departments and those outside of a company providing services of such an analysis. The providers of services of a creditworthiness analysis at domestic financial market are:

- The Creditworthiness Center of the National Bank of Serbia (NBS) and
- The Auditing Companies.

For outer (external) beneficiaries while making economic decisions, it is the most acceptable to use the services of a creditworthiness analysis provided by the external services for the reason of, which is understandable, of them having the required, namely the acceptable force (the reference value) compared to the analyses of creditworthiness performed by internal analytical departments.

Depending on the criteria under which the classification is performed, there are numerous different classifications of a creditworthiness analyses.

- According to the comprehensiveness a creditworthiness analysis can be: complete and concise,
- According to the beneficiaries three groups can be differentiated: the first including economic societies, cooperative societies and institutions,  
The second group including banks, insurance companies, stockbroker- dealers societies, providers of financial leasing, companies for managing voluntary pension funds and companies for managing investment funds and the third group of entrepreneurs.
- According to the form the following can be differentiated: the standardized and specialised reports on creditworthiness: for public supplies, the eminent of short-term securities, investors in short-term securities, for evaluation of a creditor (credit) ability of a loan holder, a leasing recipient, and for a registration of the goods controlled by foreign trade.

The conclusion of a creditworthiness analysis or creditworthiness estimate is given in several levels:

- Two levels: acceptable or positive creditworthiness and unacceptable or negative creditworthiness,
- Five levels: A-excellent creditworthiness, B-very good creditworthiness, C- good creditworthiness, D- acceptable creditworthiness and E- very weak creditworthiness.

## 2. CREDITWORTHINESS ESTIMATE ACCORDING TO THE FUNCTION OF BREAKDOWN PROBABILITY (Z-SCORE)

The function of breakdown probability (Z-score) measures financial wealth of companies and predicts the probability of breakdown (bankruptcy) up to two years, using a counterweight system of usual business relations. It has been originally designed for companies whose total assets amounts over 1 million monetary units. According to the study of measuring efficiency Eidleman's Z-score function shows reliability of over 70 %.

Altman's original function, called Zeta model [1] by James C. Van Horne, is presented by the following equation:

$$Z = 1,2 T_1 + 1,4 T_2 + 3,3 T_3 + 0,6 T_4 + 0,999 T_5, \text{ where:}$$

**$T_1$  = Operative capital / Total assets.**

Measuring the liquid assets according to a company size.

**$T_2$  = Retained gains/ Total assets.**

Measuring profitability reflecting the age of a company and her ability of accomplishing gains.

**$T_3$  = Gains before tax and interest payment/ Total assets**

Measuring operational efficacy independently from the taxation and leverage factors. It identifies operational gains important for a long term development.

**$T_4$  = Market value of common stocks / Bookkeeping value of the total debt.**

Adding a market dimension showing the fluctuation of guaranteed prices as a possible warning red flag.

**$T_5$  = Sale / Total assets.**

A standard measure for current assets variable from one industry to another.

It is used for risk estimation differentiating three zones of a breakdown (zones of discrimination):

$Z > 2,99$  – safe zone;  $1,80 < Z < 2,99$  – grey zone;  $Z < 1,80$  – difficulty zone (trouble).

*Following the requirements for strengthening of a financial market stability and decreasing the level of systematic risk of a financial system, following the models applied in countries with developed market economy prevailed (dominated) by medium and small companies, the case being in our economy, NBS as an external provider of services for a creditworthiness analyses, has developed its own methodology of creditworthiness analysis using Altman's function in expressing a breakdown probability with a difference that the zones of breakdown (bankruptcy) have been somewhat changed according to the following: :*

*$Z > 3,00$  – minor probability of a breakdown;  $1,81 < Z < 3,00$  – "grey" zone of indefiniteness;  $Z < 1,81$  – major probability of a breakdown.*

The above mentioned ratio (relations) in Altman's function of probability of a breakdown (bankruptcy) demands the following explanations:

**$T_1$  = Operative capital / Total assets.**

Operative capital is in fact a turnover capital and not a position of a balance but computable value (it serves primarily for reserves financing) and it is determined based on the following positions of a state balance sheet:

1. Capital reduced by a loss
2. Long-term reservations
3. Long-term obligations
4. Durable and long-term capital (1+2+3)
5. Permanent assets
6. Turnover capital (4-5)

Since a turnover or operative capital is a computable value it can as such be positive and negative. The turnover or operative capital is positive if durable and long-term capital is higher than permanent assets; and it is negative, i.e. with a minus sign (-) if durable and long-term capital is lower than permanent assets.

The total asset is actually a sum of assets decreased by an amount of loss above the capital expressed in assets of the state balance.

If the turnover or operative capital is negative, then is also negative, i.e. with a minus sign (-), the result of the ratio of the negative turnover or operative capital.

**$T_2$  = Retained gains / Total assets.**

Retained gains are actually a non-allocated gain. If in a state balance not only the non-allocated gains but also the loss is presented, the difference between these two balance categories is taken into consideration. The

difference between the non-allocated gain and loss can be positive and negative. The difference between the mentioned balance categories will be positive if the non-allocated gain is greater than the loss, and it will be negative if the non-allocated gain is less than the loss.

If the difference between the non-allocated gain and loss is negative, then the result of the ratio of loss and total assets is also negative, i.e. with a minus (-) sign.

The total asset is the same as explained above regarding the ratio (relation)  $T_1$ .

**$T_3 = \text{Gains before tax and interest payment} / \text{Total assets}$ .**

Gain before paying taxes and interests is actually the gain before taxation, i.e. the gain before deduction of value added tax increased by expenditures of financing (interests). If instead of gross profit a loss is realised, then from the expenditures of financing (interests) the loss is deducted, meaning that their difference can be positive and negative.

The difference between expenditures of financing (interests) and the loss will be positive if the expenditures of financing (interests) are higher than the loss, and it will be negative if the expenditures of financing (interests) are lower than the loss.

If the difference between the expenditures of financing (interests) and loss is negative, then the result of the ratio of loss (decreased by the expenditures of financing and total assets) is also negative, i.e. with a minus sign (-).

The total asset is the same as explained above regarding the ratio (relation)  $T_1$ .

**$T_4 = \text{Market value of common stocks} / \text{Bookkeeping value of the total debt}$ .**

The market value of common stocks at the joint-stock-companies (j.s.c) is actually the market value of capital. At those j.s.c whose stocks are sold at the stock market of capital, the market value of common stocks is equal to multiplication of the number of stocks found at the stock-holder and their market value accomplished at the stock market on the balance day or on the day closest to the balance day, if on the day of the balance there has been no selling of the stocks. At the j.s.c. whose stocks are not sold on the stock-market as well as at other companies (e.g. companied with shares) instead of the market value of capital, the bookkeeping value of capital is taken. The bookkeeping value of the total debt includes the total obligations (long-term and short-term) on the day of the balance.

**$T_5 = \text{Sale} / \text{Total assets}$ .**

A sale is actually an income realised by selling goods, products and services at domestic and foreign market.

The total asset is the same as explained above regarding the ratio (relation)  $T_1$ .

For the purpose of estimating creditworthiness of an analysed company with limited liability (l.l.c), according to Altman's function of breakdown probability (Z-score), we will use the following balance positions expressed after an audit of financial reports and the opinion given by an independent auditor, as follows:

**Table 1:** Creditworthiness estimate using Altman's function of breakdown probability (bankruptcy)

POSITION	EXPRESSED IN 10 <sup>3</sup> RSD		
	2007	2006	2005
1. Business assets	131.074,0	212.590,0	275.019,0
2. Loss over capital	0,0	0,0	0,0
<b>3. Total assets or total property (1-2)</b>	<b>131.074,0</b>	<b>212.590,0</b>	<b>275.019,0</b>
4. Long-term reservations	0,0	0,0	0,0
5. Long-term obligations	0,0	22.827,0	26.995,0
6. Durable and long-term capital (3+4+5)	131.074,0	235.417,0	302.014,0
7. Permanent assets	95.806,0	99.814,0	98.979,0
<b>8. Turnover or operative capital (6-7)</b>	<b>35.268,0</b>	<b>135.603,0</b>	<b>203.035,0</b>
<b>9. <math>T_1</math> (8/3)</b>	<b>0,26906</b>	<b>0,63786</b>	<b>0,73825</b>
<b>10. Non-allocated or retained gain</b>	<b>93.330,0</b>	<b>6.887,0</b>	<b>29.561</b>
<b>11. <math>T_2</math> (10/3)</b>	<b>0,71204</b>	<b>0,03239</b>	<b>0,10748</b>
12. Gain before taxation	99.800,0	6.492,0	30.356,0
13. Financing expenditures (interests)	1.985,0	8.111,0	6.135,0
<b>14. Earning before paying interests and VAT (12+13)</b>	<b>101.785,0</b>	<b>14.603,0</b>	<b>36.491,0</b>
<b>15. <math>T_3</math> (14/3)</b>	<b>0,77654</b>	<b>0,06869</b>	<b>0,13268</b>
<b>16. Capital</b>	<b>96.702,0</b>	<b>7.259,0</b>	<b>1.010,0</b>
17. Long-term obligations	0,0	22.827,0	26.995,0
18. Short-term obligations	33.936,0	182.186,0	246.975,0
<b>19. Total obligations or bookkeeping value of the total debt (17+18)</b>	<b>33.936,0</b>	<b>205.013,0</b>	<b>273.970,0</b>
<b>20. <math>T_4</math> (16/19)</b>	<b>2,84954</b>	<b>0,03540</b>	<b>0,00368</b>
<b>21. Income from sale or sale</b>	<b>220.414,0</b>	<b>497.976,0</b>	<b>665.706,0</b>
<b>22. <math>T_5</math> (21/3)</b>	<b>1,68159</b>	<b>2,34242</b>	<b>2,42058</b>

**Year 2005:**

$$Z = 1,2 T_1 + 1,4 T_2 + 3,3 T_3 + 0,6 T_4 + 0,999 T_5$$

$$Z = 1,2 \cdot 0,73825 + 1,4 \cdot 0,10748 + 3,3 \cdot 0,13268 + 0,6 \cdot 0,00368 + 0,999 \cdot 2,42058$$

$$Z = 0,88590 + 0,15047 + 0,43784 + 0,00220 + 2,41815$$

$$Z = 3,89456 > 2,99 = \text{safe zone (minor breakdown probability)}$$

**Year 2006:**

$$Z = 1,2 T_1 + 1,4 T_2 + 3,3 T_3 + 0,6 T_4 + 0,999 T_5$$

$$Z = 1,2 \cdot 0,63786 + 1,4 \cdot 0,03239 + 3,3 \cdot 0,06869 + 0,6 \cdot 0,03540 + 0,999 \cdot 2,34242$$

$$Z = 0,76543 + 0,04534 + 0,22667 + 0,02124 + 2,34007$$

$$Z = 3,39875 > 2,99 = \text{safe zone (minor breakdown probability), but it is somewhat lower in than in 2005}$$

**Year 2007:**

$$Z = 1,2 T_1 + 1,4 T_2 + 3,3 T_3 + 0,6 T_4 + 0,999 T_5$$

$$Z = 1,2 \cdot 0,26906 + 1,4 \cdot 0,71204 + 3,3 \cdot 0,77654 + 0,6 \cdot 2,84954 + 0,999 \cdot 1,68159$$

$$Z = 0,32287 + 0,99685 + 2,56258 + 1,70972 + 1,67990$$

$$Z = 7,27192 > 2,99 = \text{safe zone (minor breakdown probability), even over two times higher than in 2006}$$

**3. CREDITWORTHINESS ESTIMATE ACCORDING TO TRADITIONAL PROCEDURE**

Creditworthiness estimate as per the traditional procedure comprises an estimate of the state of financial balance, an estimate of capital adequacy (indebtedness) and solvency estimate.

*An estimate of financial balance state* comprises: *an estimate of short-term financial balance state* and an estimate of *long-term financial balance state*, and it is performed according to the following:

**Table 2:** An estimate of long-term and short-term financial balance

P O S I T I O N	EXPRESSED IN 10 <sup>3</sup> RSD		
	2007	2006	2005
1	2	3	4
1. Cash equivalents and cash	369,0	5.812,0	9.126,0
2. Short- term claims	29.983,0	71.533,0	106.351,0
3. AVR –expenses paid in advance	0,0	0,0	1.681,0
<b>4. Liquid and short-term bound turnover assets (1+2+3)</b>	<b>30.352,0</b>	<b>77.345,0</b>	<b>117.158,0</b>
<b>5. Short-term obligations, i.e. short-term financing sources</b>	<b>33.936,0</b>	<b>182.186,0</b>	<b>246.975,0</b>
<b>6. Liquidity coefficient or ratio (4/5)</b>	<b>0,8944</b>	<b>0,4245</b>	<b>0,4744</b>
7. Permanent assets	95.806,0	99.814,0	98.979,0
8. Reserves	4.898,0	31.373,0	55.627,0
9. Loss over capital	0,0	0,0	0,0
<b>10. Long-term bound assets (7+8+9)</b>	<b>100.704,0</b>	<b>131.187,0</b>	<b>154.606,0</b>
11. Capital	96.702,0	7.259,0	1.010,0
12. Long-term reservations	0,0	0,0	0,0
13. Long-term obligations	0,0	22.827,0	26.995,0
<b>14. Durable and long-term capital (11+12+13)</b>	<b>96.702,0</b>	<b>30.086,0</b>	<b>28.005,0</b>
<b>15. Financial stability coefficient (10/14)</b>	<b>1,0414</b>	<b>4,3604</b>	<b>5,5207</b>

*State of short-term financial balance* is determined by comparing liquid and short-term bound turnover assets (cash equivalents and cash increased by short-term claims and active time spans- expenses paid in advance) with short-term obligations, i.e. short-term financing sources. By comparing of the mentioned balance positions a *coefficient or ratio of liquidity* is determined, showing to what extent is each monetary unit of short-term obligations covered with monetary units of liquid and short-term bound turnover assets with the purpose of evaluating the capability of a company to pay its obligations, while maintaining of the necessary volume and structure of the turnover assets and maintaining an acceptable level of creditor's creditworthiness.

If the coefficient of ratio of liquidity is 1, it means that the short-term financial balance (equilibrium) is established between the liquid and short-term bound turnover assets and short-term obligations, i.e. short-term financing sources, because the liquid and short-term bound turnover assets and short-term obligations are mutually equal, 1:1.

If the coefficient or ratio of liquidity is greater than 1, it means that the short-term financial balance is moved towards short-term bound assets; and then there are no difficulties in maintaining the liquidity. The coefficient or ratio of liquidity greater than 1 shows that on one monetary unit of short-term obligations comes more than one monetary unit of liquid and short-term bound turnover assets (cash and cash equivalents, short-term claims, AVR).

If the coefficient or ratio of liquidity is greater than 1, it means that the short-term financial balance is moved towards short-term obligations, and then there comes to difficulties in maintaining liquidity. The coefficient or ratio of liquidity less than 1 shows that on one monetary unit of short-term obligations comes less than one monetary unit of liquid and short-term bound turnover assets (cash and cash equivalents, short-term claims, AVR).

The coefficient or ratio of liquidity during the overall period has a growth tendency, in 2005 it amounted 0,4744, in 2006 it amounted 0,4245 and then in 2007 it has grown to 0,8944, pointing that the liquidity is constantly growing.

The coefficient or ratio of liquidity in 2007 shows that each monetary unit of short-term obligations is covered with 0,8944 of monetary unit of liquid and short-term bound turnover assets. Since the coefficient or ratio of liquidity is constantly increasing, during the overall period, however, it has remained less than 1, showing that the company during the observed period has not established the short-term financial balance. Since at the end of the analysed period, i.e. in 2007, short-term obligations have been covered with almost 90 % (89, 44%) by liquid and short-term bound assets, that means that for a complete short-term financial balance or for a rigorous liquidity lacks 10, 56 % of liquid and short-term bound turnover assets.

**State of long-term financial balance** in professional literature is called **a state of financial stability**. It is determined by comparing the long-term bound assets (permanent assets increased by reserves with durable and long-term capital (the capital increased by the long-term reservations and long-term obligations). By comparison of the mentioned balance positions *a coefficient of financial stability* is determined.

If the coefficient of financial stability is 1, then the long-term financial balance (equilibrium) is established because the long-term bound assets is equal to durable and long-term capital, by which in the areas of long-term financing conditions for maintaining the liquidity have been created. If the long-term financial stability exists then also there is the short-term financial balance exists. However, in such conditions there could come to illiquidity that is not long lasting, and this happens when the transforming (conversion) of short-term bound assets into cash is slower than the maturity of short-term obligations for payment.

If the coefficient of financial stability is greater than 1, the long-term financial balance is shifted towards long-term bound assets. The more the greater than 1 coefficient of financial stability is in the area of long-term financing, the more endangered the liquidity is. In such circumstances the short-term financial balance is shifted to the benefit of short-term obligations so that there must come to illiquidity, except in the case of transforming (conversion) of short-term bound assets into cash more promptly than the maturity of due short-term obligations. It comes to this when the coefficient of financial stability is slightly higher than 1.

If the coefficient of financial stability is less than 1, the long-term financial balance is shifted towards durable and long-term capital. Then in the area of long-term financing a security for maintaining the liquidity is created. The lower the coefficient of financial security, namely, the closer to zero, the greater the security for maintaining the liquidity. In such circumstances, the short-term financial balance is shifted towards the short-term bound assets and cash and thus the short-term bound asset with cash is greater than the short-term obligations. If the transformation (conversion) of short-term bound assets according to the volume and the time corresponds to the volume and period of maturity of short-term obligations, the difference between them is the cash (the liquid reserve). The liquid reserve will only be used in the case when the transforming (conversion) of the short-term bound asset is less than the matured short-term payment obligations, and that is the way to maintain the liquidity. For how long the liquidity can be maintained with the help of liquid reserve, depends not only on the inflow realised from the difference between the transformed (converted) short-term bound assets and matured short-term payment obligations, but it also depends on the extent to which the long-term financial obligation is shifted towards durable and long-term capital.

The coefficient of financial stability for the overall period has a descending tendency, in 2005 it amounted 5,5207, in 2006 4,3604 and then in 2007 it has fallen to 1,0414 i.e. somewhat greater than 1, showing that the security for maintaining the liquidity is constantly growing.

**An estimate of capital adequacy (indebtedness)** is expressed by a structure of liabilities without transitory positions (without long-term reservations and passive time spans- PVR) The liabilities structure excluding the transitory positions of the liabilities is often called the **indebtedness** in professional literature because it expresses the share of the debts, namely the obligations in the liability without the transitory positions.

**Table 3: An estimate of capital adequacy (indebtedness)**

P O S I T I O N	EXPRESSED IN 10 <sup>3</sup> RSD					
	2007		2006		2005	
	Amount	%	Amount	%	Amount	%
1	2	3	4	5	6	7
1. Capital	96.702,0	73,8	7.259,0	3,4	1.010,0	0,4
2. Total debts (long-term and short-term obligations)	34.372,0	26,2	205.331,0	96,6	274.009,0	99,6
3. Total liabilities excluding transitory positions (1+2)	131.074,0	100,0	212.590,0	100,0	275.019,0	100,0

Since the adequacy of capital is expressed by participation of capital in liabilities excluding the transitory positions of the liability, the adequacy of capital is constantly growing during the overall period and in 2007 it reached 278, 3 %. The adequacy of capital is primarily designated by the level of organic composition of assets and the level of currently valid rate of inflation, and secondly (secondarily) by the level of profitability and lasting (permanent) maintaining of liquidity.

If the inflation rate is high, i.e. two-figures, and if the interest rate for the interest-bearing debts is really positive (higher than the inflation rate) it causes high expenditures of financing (interest costs) and it endangers accomplishing gains. The danger (risk) of loss can be evaded only by increase of the owned capital and by decreasing the debts. If the interest rate is really negative (lower than the inflation rate), the company cannot find any creditor that is willing to lend under such conditions, because the creditors do not wish to suffer any inflationary losses and they invest cash into real states or transformable (convertible) currency having a strong exchange rate. Thus it comes to decrease in financing sources, causing the decrease of business volume (decrease of production and services) and also causing the increase of fixed costs per the unit of participation, endangering accomplishment of gain in business. In order to prevent this, the only way is that the company increases in the structure of the liabilities the participation of capital and in that way decreases the rate of indebtedness. High participation of fixed assets in the structure of operating assets (high organic composition) causes high fixed expenditures on the basis of depreciation costs, costs of assets insurance and tax on assets, endangering the accomplishment of gain, i.e. increasing the business risk. In order not to come to this, the only way is to increase the capital and decrease the debts in the structure of liabilities. In that way the financial expenditures are decreased, the financial risk is low and despite the high business risk, the total risk of accomplishing gain is decreased because the total risk is a multiplication of business and financial risk.

If the company is accomplishing high profitability and along with it if it maintains the liquidity lasting (permanent), it can allow shifting the structure of liabilities towards debts, namely towards the obligations because the high profitability increases the guaranteeing substance and thus increases protection of the creditors; and permanent liquidity assures the creditors that the business of the debtor is regular and that is why they are lending him.

The organic composition of assets and the valid rate of inflation in the country of analysed l.l.c. is as follows:

**Table 4: Organic composition of assets and valid inflation rate**

P O S I T I O N	EXPRESSED IN 10 <sup>3</sup> RSD					
	2007		2006		2005	
	Amount	%	Amount	%	Amount	%
1	2	3	4	5	6	7
1. Durable assets excluding long-term financial placement (fixed assets)	95.600,0	73,05	99.608,0	46,90	98.779,0	35,94
2. Turnover or current assets	35.268,0	26,95	112.776,0	53,10	176.040,0	64,06
3. Operational assets (1+2)	130.868,0	100,0	212.384,0	100,0	274.819,0	100,0
4. Valid inflation rate	-	6,8%	-	12,7%	-	16,5%

The organic composition of the assets (participation of fixed assets in operational assets) is growing a year after year. The participation of the fixed assets in operational or the current assets in 2005 amounts to 35,94%, in 2006 it is 46,90%, and in 2007 it is 73,05%, i.e. over 50 %. The valid inflation rate during the analysed period, according to the official information of the Republic Statistical Institute, was in 2005 16,5 %; in 2006 12,7% and in 2007 6,8%. According to the mentioned data, the valid rate of inflation for 2005 and 2006 is high because it is two-figured (over 10 %); while in 2007 it is low because it is one- figure (under 10 %). In 2005, the company has had a proportionally (relatively) low organic composition of the assets being 35,94% i.e. under 50 %, when the valid rate of inflation has been unconditionally (absolutely) high, 16, 5 %, i.e. over 10 %; which has been continued in 2006 in to some extent lower figures, when the organic composition of the assets was relatively low- 46,90% i.e. under 50 %, and the valid rate of inflation was high- 12,7% i.e. over 10 %. In 2007

the organic composition of the assets, i.e. the participation of the permanent assets in operational assets is growing to 73,05%, i.e. over 50 % with the valid inflation rate falling to a one figure of 6,8%, i.e. under 10 %. In 2007, the company has greatly decreased its indebtedness, where the participation of the debts (long-term and short-term obligations) in the liability excluding the transitory positions from 99,6 % in 2005 has fallen to only 26,2 %.

Since in 2007, the organic composition of the assets is proportionally (relatively) high and the valid inflation rate is low, it primarily shows that the sole capital of the company is adequate. The analysed company is relatively low indebted and the structure of the liabilities from the point of view (aspect) of the ownership is completely acceptable.

**An estimate of solvency** shows the ability of a company to pay for the total debts and not the maturity date, but in any time and at latest till payment from the insolvency (liquidation) mass. The solvency is evaluated by a *solvency coefficient* out of the ratio (relation) of business assets (business assets is lower than the business active capital by the amount of loss over capital) and of the total debts, namely the obligations. The company is solvent if it can pay the total debts not at their maturity date but at any time, and at latest form the liquidity mass; and it is insolvent when it is not able to pay the total debts not even by selling the business assets from the liquidation mass. The estimate of solvency is performed as follows:

**Table 5: Solvency estimate**

P O S I T I O N	EXPRESSED IN 10 <sup>3</sup> RSD		
	2007	2006	2005
1	2	3	4
1. Business assets	131.074,0	212.590,0	275.019,0
2. Total debts (long-term and short-term obligations)	34.372,0	205.331,0	274.009,0
<b>3. Solvency coefficient (1/2)</b>	<b>3,81</b>	<b>1.04</b>	<b>1,00</b>

Solvency estimated by the solvency coefficient, shows that the company has been solvent during the overall period because not in any of the years the total debts haven't surpassed the value of business assets. The solvency during the whole period has a growth tendency. In 2005 the solvency coefficient was 1,00 to be increased in 2007 to 3,81, showing that during the last years of business operations the business assets was greater than the total debts. Even the 50 % of the bookkeeping value of the business assets is almost twice (1,9) greater than the total debts  $(131.074/2)/34.372=1,9$ , showing that the company's solvency is at a high level.

### 3. CONCLUSION

Based on the analytical results of both presented procedures of creditworthiness estimate, according to the function of breakdown probability (Z-score), as well as according to the traditional procedure, the same (identical) and not opposite conclusions can be stated about the creditworthiness of business of the analysed company with limited liability (l.l.c).

The results of the creditworthiness estimate according to the function of breakdown probability (Z-score) shows that the l.l.c. is placed in the safe zone with low breakdown probability; and the results of the traditional procedure show that the company possesses an adequate capital, that it has low indebtedness, that the structure of the liabilities from the point of view of ownership is completely acceptable and that the solvency is at a high level.

Under conditions of global economic and financial crises, it is necessary to develop a strategy of maintaining and eventual advancement of creditworthiness estimate, implying the projection of such a business plan with its including parts, income statement and balance statement project the volumes of the business positions that will enable accomplishing a strategy for such creditworthiness estimate. A prudent technique of a management system in the following years comes from the projected shares (performances) in the mentioned way. It is logical that, if accomplished under conditions of greater competition on the export market, the results will be of better chances for the future (promising).

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## **PROCESS ORIENTED BUSINESS PHILOSOPHY AND TOTAL QUALITY MANAGEMENT (TQM)**

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**Summary:** *Business processes (the basic processes and support) are the words that still give some business leaders most difficulties. Why? Because they are not process-oriented. They are not accustomed to thinking process. They are focused on the structure on the functioning of the organization, but not on the processes that will ensure participation in the market. Business philosophy focused on the processes provides identification process that creates value for customers meet their requirements. TQM encourages the adoption process as a paradigm of continuous fulfillment of demands of consumers and thus the development and growth.*

**Key words:** *system of quality, total quality management, business process*

### **1. INTRODUCTION**

Analysis of the current state of business in the world shows that the market environment in which the work has changed significantly. To change the market environment is a far-reaching impact the combined effect of the development and use of information technology (hardware and software) and global telecommunications. Combined effect of the development and use of the above mentioned factors, have created a new business platform, which has tremendous speed and scope of action. This magnificent shift indicates that every day less technical limitations in the ability to process, remember (saved), and transfer business information anywhere in the world.

The data in the following table undoubtedly confirm the specified statement. Projections indicate that in the period since 2000 to 2040, the movement of optical way of saving up to 65% and the electronic transfer of data to even 90%

**Table 1:** Movement ways of saving and data transfer from 2000 to 2040 year

YEAR	MEMORIZING			TRANSFER	
	On paper	Magnetic	Optical	Physical	Electronically
2000	60%	20%	20%	60%	40%
2010	45%	20%	35%	45%	55%
2020	30%	20%	50%	30%	70%
2030	20%	20%	60%	20%	80%
2040	15%	20%	65%	10%	90%

The time for a change in the business has come to only a few months. Subjects who learn slowly and quickly forget are destined to failure [7].

Today, it is more important the quality of communication links (telephone, Internet, postal, road, railway, sea, river, and airspace) then place of work on a site.

Domestic business structure organized and set up for past time, can not survive in the new environment in the new time will work. Must be transformed and enabled to operate according to the changed requirements, the sooner the better.

The Serbian economy is in transition, falling behind and undeveloped and how it will develop depends on the ability of structures to adapt to the new environment and the state elites that lead the country.

The following changes are crucial working separately or in combination, these three powers in which the local managers are hard to manage. These are:

1. force of customers
2. force of competition and
3. force of changes.

Force of customers to act in the direction of the communication with customer's sellers moved in favor of customers and users and is focused on the production according to customer requirements, quality that will meet customer requirements, price, and payment method and terms of delivery that meet the customer.

There is only known that the buyer should not be lost, because the loss of one customer does not mean a new phenomenon. In any business a customer is as carrier of budget spending, which has to be treated according to their demands.

Force of acting in the direction of competition to continuously grow in any business. Standing suppliers without no competition, or will be. New findings indicate that it should go in cooperation with the competition and mutual participation in the market in the form of partnerships. Opening markets, the goods will always sell on the basis of price, quality and / or elections, etc. New technology also unexpectedly affects the competitiveness, so that organizations are forced to constantly improve spending and / or services.

Will appear subsist new and existing economic structure. The new economic structure have the advantage that no burdens from the past. New or reestablished existing economic structures, on the concept of process organization, write new business rules.

Force changes act in the direction of changes to become permanent, not temporary. Economic globalization in the world, all organizations are forced to continuous, permanent or occasional changes, adapt to the market. Rapid technological changes also promote innovation. Life cycle of products without change reduces constantly. Products require constant modifications in terms of improvement and adaptation to meet new needs at the higher level. The essence is reflected in the innovation and introduction of modern technology and better. Not only products life cycle, but also has its own development cycle. All must be continually seen and unwind faster.

Many of our directors can not realize why their organizations are in trouble, or to agree on what is there for. A culprit in the ministries of government do not see what they need, independent trade unions that organized the protests, inadequate educational profile of employees, etc.. which could be only partially true.

Response in the full essence meaningful reading: No products and / or services, but the processes that create products and / or services according to the requirements of users, who are economic actors, bring long-term success.

Ignoring the needs of consumers can not be skirted. The problem is, therefore, that is entered in the 3rd Millennium, with the profile of the 2nd millennium, and will not be able to.

Modern business should be something completely new. The answer to the problems found, they will give you your work needs and demands of the modern organization based on business processes.

Pursuant to the front, the activities of the three great powers have a growing need for the introduction of quality management according to the requirements of ISO 9001/2000, which encourages process organization to increase customer satisfaction of fulfilling their demands. Unfortunately, we still broader management structure that you do not understand the essence of the request and the basis of international standards of quality management. Why? Therefore, we expect them to guarantee his introduction by automatically, for a short period, provide enough jobs. As such there is no guarantee, does not want to spend resources in vain. It is not difficult to conclude that it is misunderstanding of business philosophy that is focused on fulfilling procedural requirements specified users. Only those business processes that ensure the fulfillment of user requirements will provide participation in the job market and bring economic entity as desirable infinites, and those who do not provide condemned the destruction. Our economic entities, as blood plasma human body, required constant innovation education-knowledge. In developed countries head structure in each edge companies spend on training per year in 2 months.

While the world science and practice of tens of years back was focused on the tools that increase the performance of business and sustainable development (productivity in the production of goods and services according to market demands, the use of available resources, etc..) Placing the focus primarily working methods which can provide, [8] domestic economy, and today has to indicate the calculation that, with the Japanese long-term average growth rate of 2.95% EIR Yugoslavia 1990 should be 39 to 51 years to reach a per capita income of developed countries ”.

## 2. EVOLUTION OF QUALITY APPROACH

Evolution of quality approaches in world transformation process which is beside economy structures captured all other forms of public life, developed through next phases:

**First stage of development** is *quality inspection* - **QI** or technical control, where the attention is aimed at finish control, on discovery of those products which are not well done.

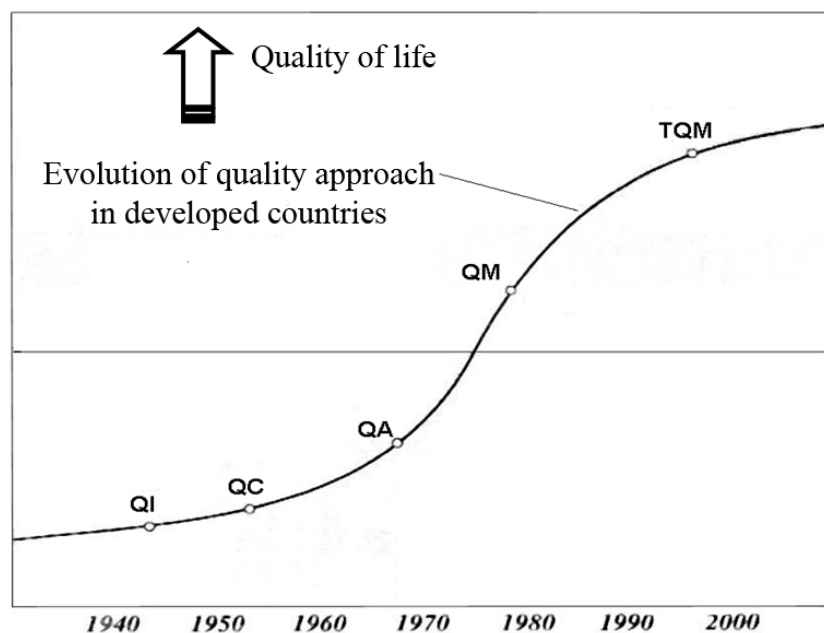
**Second stage of development** is *quality control* - **QC** which is based on statistical analysis of operations and processes and operative quality management in a process.

**Third stage of development** is *Quality Assurance* - **QA** where the quality is relied and continued on previous stage.

**Fourth stage of development** is *Quality Management* - **QM** where quality becomes a subject and a way of management.

**Fifth stage of development** is *Total Quality Management* – **TQM** where quality becomes a managing concept of full orientation towards quality.

**Sixth stage of development** is *Quality of life* - *Quality of men*, a stage of system development to which we are hoping to achieve, which can be seen on the following figure 1.



**Figure 1:** Evolution of quality approach by stages in developed countries of the world

So, Total Quality Management (TQM) as a full management concept focusing on quality of all employees and not just the leadership (management) is the developmental stage of entering the phase of the quality of life which we all strive to achieve

In the system of quality management, many see the opportunity for involvement in world integration processes. Quality management system brings a new attitude toward work, users and the surrounding area. It leads to faster out of backwardness and faster connecting with the world. It is suitable for non investment improving the efficiency of the process. Generates other positive processes, the broader organizational culture, education and motivation, it has a clean accounts and enables successful [6] management system The introduction of quality management to the basics and requirements of international standards ISO 9001:2000 provides TQM-philosophy without which there is no theoretical chance to get closer to the developed countries.

## 3. TOTAL QUALITY MANAGEMENT (TQM)

Quality management according to the model TQM (Total Quality Management) is based on the following grounds of TQM philosophy: [2, 3]

- put consumers at the center makes all manner of observations about the quality of which is all built. Improving the ability of organizations to understand and accommodate the real needs of consumers, as said and not said, is the basic goal of TQM.

- establish a decision on the application of statistics to the facts possession of understanding for variations not wasting energy and time in hearing what customers want to have, why think that is a problem, etc..
  - ongoing work on the changes because there are always possibilities to improve the ability to satisfy the actual needs of customers.
  - Work on the processes is the key principle that enables the ability to continuously improve customer satisfaction. Individual project can not be subject to continuous improvement, but a process that can be used to manage the project in the organization.
  - Allow everyone to participate is the central importance of this concept. The aim is that all employees in the everyday life of the state to bring in customers, products and / or services, in the center, a decision based on facts, constantly striving to improve and work on their processes.
- Posts TQM philosophy are elaborated in the basics and requirements of international standard quality management system ISO 9001: 2000, which is based on the full implementation of simple and really effective management system. Management control is realized through:
- built feedback and data arising influence official managerial decisions and actions, as the operational efficiency of the organization,
  - discipline which consists in consistency: all that out of the organization, which reduce the problems caused by unexpected, unwanted and often legitimate customer complaints; consistency of different groups in the organization and the representative organization regardless of who managed them, and consistency throughout the organization, which is achieved by working on Registration (Certification) organization according to the above standard,
  - effective system of internal checks, which removed the obstacles that appear in the filtering of information that lower management structure do not want to come to the first man Organization (Director-General, president or director).

#### 4. PROCESS APPROACH AND TQM

To organization can establish, maintain and apply quality management system according to TQM requirements must:

- identify the processes and to apply them throughout the organization,
- determine the order and identified the process of reciprocity,
- determine the criteria and methods necessary to ensure that performance and management processes to be effective,
- ensure the availability of resources and information necessary for the support and performance monitoring process,
- follow the processes, measure and analyze their performance, and
- implementing measures necessary for the achievement of planned results and continual improvement process.

Identified process should include processes for management activities, provision of resources, implementation and measuring the characteristics of products and / or services.

What is considered to be the process? According to the definition of standards activity that uses the resources and has the administration and management that allows the transformation of input elements in the output may be a process. Often, the output of one element of the process directly form input element of the next process. The processes are therefore a chain of activities in the backward flow to create value customers. Who are the customers? Consumers are the values that are created by processes.

Application of the process within the organization, together with their identification and reciprocity, as well as management and management, can be qualified as a "process approach".

The advantage of procedural approach is always management, which provides over a connection between the processes in the process, as well as over their combination and mutual action.

Process approach to the circuit in the TQM-A, stresses the importance of:

- a) understanding and fulfilling the request;
- b) consideration of the needs in terms of added value;
- c) to obtain the results of performance and effectiveness of the process and
- d) continuous improvement process based on an objective measurement.

Process approach therefore involves distinguishing base or the basic process of the support. Primary or base belongs to the central importance of processes that have not only tasks, but the strategy and vision of the organization. Support processes are the processes that support base processes. The entire process of structure must be covered by the owners of the process. The owner of the person with the necessary powers, set by the leadership, which is responsible for the process to be effective, focused and to work as a whole. Category process determines the status of the owner of the organization.

## 5. CONCLUSION

On the basis of archive is a clear relationship procedural approach to the organization and TQM-a. Total quality management, encouraging the adoption process because the organization improves the effectiveness of the overall system of management companies as a desirable infinites, and continuity in the implementation of specified and expected demands of consumers and users. That enables the market participation and thus the survival and development.

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## **TOTAL QUALITY MANAGEMENT - A NEW PARADIGM IN EDUCATION**

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***Summary:** Management implies very complex skills; it requires variety of interdisciplinary knowledge and skills of using this knowledge for practical purpose of organization, direction and control of performing common work activities. Management in education system is perception of quality of education process, quality of management structure and its impact on success of functioning of education system. Status and value of indicators and performance of quality must be defined and measurable in order to manage all processes and operations of education system by feedback information.*

***Key words:** management, quality, indicators of quality*

### **1. INTRODUCTION**

In the second half of twentieth century, concept of total control management got especially validity in management process, like universal concept acceptable on all kind of organizations. Like that, it starts accomplish successful in education systems. Quality is in connection with successful decision and continuous advancement products or services. It makes conditions for continuous demand, and it presents condition for organization existences and prosperity. It needs to pay attention that quality is always subjective category and similar definition of beauty, which is in the eyes of individual person.

Because of determining of quality, it should be on the mind its essence and contents, than definition. Pursuant to inductive, under this concept should to allude centralizing on quality, based on participation all employment, respecting all constitutions which directly, or indirectly participate in education process. The concept is based on long-term base, with target to get satisfies, before all, to members business process, which would be in association function. Robert Pirsing (Robert Parsing) shows the best quality in the education: "A quality is not intellect and material, already the third entity independent from other two although quality cannot be defined, it knows what it presents".

According to our opinion education quality like end result would be functionality knowledge which reaches participants in teach-education process. As that is not intellect which would be measured with intelligence quotient, and that is not "material" - actual knowledge of participant which could be measured with tests, functionality knowledge presents the highest quality which is difficult to define and more difficult to be measured.

With consideration on quality like a paradigm of competition is a challenge of century's intersection. Today, when education systems get competitions on market - private school must be engaged in modern flows of managements, cause "The winner would be that organization whose would be success to developed the innovative culture, in which employers will be enjoy in changes and be a carrier of that changes" [2].

Total quality management means quality on all level of business process, from *output* across transformation to *input*. That means a quality of suppliers, producers and final user - consumer. According to specified quality limit are enlarged out of organization and involve external and internal participants which influences on ultimate *output*, in other words "product of education". Education quality unifies the world, which needs request for establishment particular standards on international or regional levels, like epilogue in previous chapters.

For customers of education service, like a "consumers" of education system and its requirements in modern society, necessity of "study society" would be talking, and that was be functionally knowledge. Our review of user's knowledge in education service, miscellaneous methods, techniques and instruments, give us inspection in their acquirements, till on concrete level of knowledge, that's say with measuring accomplished appreciable

intentions and tasks with determined education level, that means "quality" - functionality knowledge is more than "our satisfactory research indicates".

In meaning of that, examinations of knowledge are only a part which would be this approach to management was occupying in true pedagogic practice. By knowledge, we should be review and work on school supplies quality, variability school material resources and inspects their implementation in lesson, parent's cooperation quality, family breeding quality, variability methods implementation, teaching aids and shapes of teaching and their quality etc.

## **2. NECESSARY OF ENGAGE INTEGRATED QUALITY SYSTEM**

It is necessary that total business of high school institutions be adapted to European standards; because of Serbia's high school system completed with common European research area. It means that high school institution must defined business performances in teaching, research and for business management. Business performances defined based on one or more quality indicators which are generate from one or more variable. High school education business needs to be transparent, comparable with other high school institutions in the country, Europe and world. That is not accomplishing with uniform procedure of quality and standard of quality implementation in integrated quality system which is a part of integrated information system on larger level. Business performances, quality indicators, becomingly variables are a part of integrated knowledge base about total business education institution. High school institution engagement are transparent and quality teaching quality regular coverage, research results, programs of study, evaluation results and accreditation, business performances and other reports integrated quality system. Analyses, based on quality indicators of high school teaching institution need to be distributing European Union Commute, UNESCO organization, international education associations, Government and ministry resorts, National Council for high school development. Education association in the country, statistical institute, various chambers and regional authority, like and others interested education customers.

### **2.1. Standards and Procedure of Integrated Quality System**

Standards of quality development and accompanying instructions need to be a part of integrated quality system convergent procedure on Europe's high education institutions. They're different national approaching for internal and external procedure and standards of quality, like a restriction for their convergent [3].

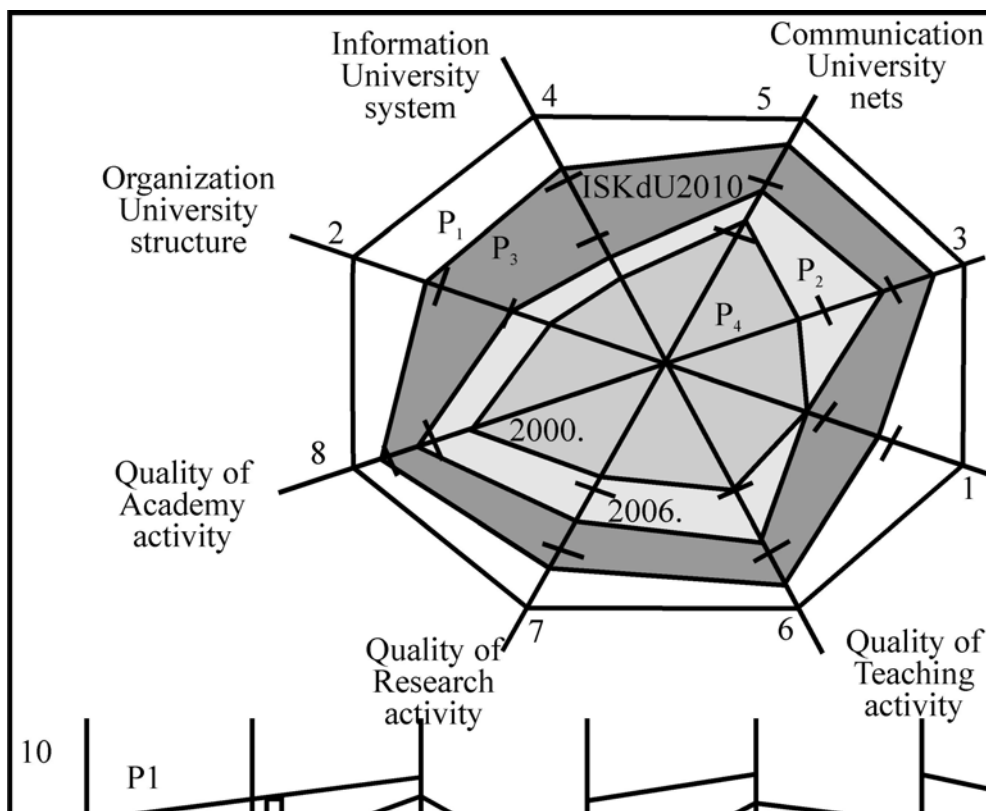
Serbia's institutions of education loosed comparative advantages, which had once over education institution some other countries, because inertial resistance obstruct progression in integrate process. Standards and quality instructions are society interest that standards protect from flippancy which doesn't know criteria of validity.

The second intention standards of quality are to raise education level of students and other shapes of teaching in high education institutions if those institutions reach theirs missions in prosper society. In research activities, function of the education institutions is to contribute economy development with results which gives new products, high technology and implemental business methods, through fundamental, development and applied researches. Standards must to provide uniform access, professionalism, credibility, clear transparency to education and research users, like and to comparable quality and characteristics indicators of business in Europe's quality dimensions.

Procedures of quality are base for implementation integrated quality system in high education industry. A procedure on standardized way, which is agreeable with ISO 9000 standard specifications, describes all activity of education, research and management of education institution. Procedures of quality are internal (in institution complex) and external (with consideration education-business surroundings). Graphical presentation procedure of quality by diagram of activity flows allude precise definition of all necessary inputs and outputs of integrated activity with define single and group responsibility with term of execution all assignment Procedure of correction must to define extra activity which must to be executed in case of variation from defined procedure because due to activity disarrangement factors [4].

Systematically approach to collecting expert's opinion and system of complementary interrogatives are basically postulate for continual promotion integrated system of quality. The designers of interrogatives and proper procedure of quality must logically to connect contents and questions of interrogative with business performances of high education institutions, like and indicators business and target of single subsystem and module of integrated system of quality. For each interrogative defined especially procedure of quality, optimally model of candidate and using frequency. Questions of interrogative are being write in bank of questions and would being use towards actuality in business and education-business surrounding of institution of high education. Methods of prognosis development each institution of high education uses expert's opinions in more cycle. System complementary interrogatives with that becomes origin information which directly influences on

development institution of education as well as total development high education in Serbia. Fig 1 shows define model of capacity for changed in high education like a *hyperspace* of status reform [5].



**Fig. 1:** Model define capacity for changed in high education reform

It can be define three characteristic surfaces of reform changes in relation ideal surface explicitness in total business institution of high education. They are surfaces:

- P1: From the year 2000 till today
- P2: From today to year 2010; date of integrate of Europe's education area
- P3: Further development Europe like a society based on knowledge

Value of dimensions hyperspace of status, experts estimate with grade from 5 to 10 ore with percent value in relation on the best praxis Europe's education institutes and world (max 100%).

One request of Berlin's communiqué was national system of provision of quality must to involve responsibility suitable bodies and institution which engaged in evaluation study's program or institutions, accredit system, certificate issue, implementation compatible procedure, like and international cooperation, cooperation and communication's nets connection. Define own criteria base on results methods of study for teaching models and study's program with proper methods of account requires changes and adaptation institution of education to European education space. Many of education institutions change contents of program and subjects unsystematically and repetition of teaching discipline. Account and point system is base for student's progression tracking along teaching process. Designers of study's program determined coherency and consistency of all implied components. Procedure for module development employs description of education level, sets up teaching module targets, define different study, determine account criteria and involve teaching strategy.

High educations institutions and economy in cumulative cooperation makes to each other education-business surrounding, but also have and each other surrounding which makes world market of products, capital, knowledge and accommodation. Products of education institutions are experts of all kind competence, who are, after acquirement, abilities and competitions, leaders' economy and society. Integrated system quality supply, establishes business and information-communication connections education institutes with business surrounding. Portion relations are unilateral or multilateral in regard to education, research, development, and consulting, common investment and define requirement of society for individual profiles of competence in association with relevant ministry of government. Assignment targets with essential changes in high education reform, progress with continual reverse connection of education institution. With acceptable standards for European integrity of high education institution, present base for knowledge development orientation of society with experts for new business challenge.



High education institutions through reform And Bologna process must to accept new models and shapes of total business. That means, on multilevel management education-business, institutional and academic performances in smart business. Performances govern realizes on three level. The level of total education, level of institution and level centralized and decentralized function of business. Smart business allude business events in real time tracking, proactive function execution based on instantaneously status business performances, conveyance relevant decisions with recommendation and assumption (corrective) actions in cooperation with all integrated units. Performances of institution business of high education in regard to teaching process, research programs administrative activity no teaching personality. For all three range parameters would be define with main indicators of business performances validity.

## 2.2. Indicators and Performances of Integrated Quality System

Status and validity of indicators and performances must to be defined and appreciable that reverse information's govern with all processes and operations of education-business system in high education institutions [6].

Learning process is growing up of knowledge and acquirement abilities based on acceptable new information in activity of teaching process. In that process permanently advantages working and academic performances of students, from starting during registration, to performances of graduated creative experts for employ market. Qualities of teaching performing, student progress tracking procedure during studies and procedure of account during study are a part of integrated system of quality. Teaching performing must to be determined level of quality which determine interesting of students to follow teaching on which must to active participate (making a questions, connecting teaching units of same or other subject and others). Continually tracking progress of students during semester, school year and whole studies, requests permanently modification of knowledge base of integrated information system. Procedure of account must to be transparent and before known to all students.

For information and functionally integration it is essential knowledge and ability in design and realization integrated information system with unique knowledge base. One of more postulates for successful conclusion is developing consistence system classification elements of business which represents information system base.

High education institution must to developed culture of documenting or culture of evidencing in all activities, what would be presenting a part of common institutional culture of quality. Mentioned validity determine that is behavior in institution of high education based on clear ethical principles, rules and validities which need to be clearly presented in next self evaluations, valuation and testing from competitive experts, as well as in cyclic accreditation proceeding. Existing state institutions of high education starts to process with accreditation procedure. Evaluation process proceeds of accreditation process.

Students are, in reforming process of high education, before all, partners but not passive consumer with trivial influence on essential transformatitransformationon.

In Serbia's high education institutions are setting up students' organizations. *Students' parliaments* are setting up in some institution, but it is not clearest choice procedure in which participate not enough number of students. Still is more disadvantageous fact that is great numbers of students uninformed about rights and respectable function of students or facts that students are passive in students' organization working. Respectable students' uninformed about Bologna declaration and instantaneous results of reform, is not only students' failure and their organizations, already other factors of high education. Visa regime of European Union was extremely disadvantageous for students from Serbia which was close in their uninformed about trends of European integrations. Inters of all (students, teachers, high education institutions and society) is that accept European standards as well as Serbia was integrate in Europe with education institutions which diplomas would to have validity according to place on rang list. Because of that, it is essential and students' interesting for active participation in reform transitions.

## 3. INTEGRATED QUALITY SYSTEM OF EDUCATION ON UNIVERSITY

Analyses of integrated system ensuring quality for university are permanent engagement of university. Analyses refer to tracking successful practice on universities in Europe Union and world. They start from referent and special models quality supplies. Quality's indicators had to define themselves so that would be comparative no faculty and university based on their digital description.

Evaluation study's' programs is postulate of accreditation, consideration obtained diplomas and postulate for high range on next Europe's university list of range.

Evaluation of academic institutions refers on universities and institutes. Internal evaluation can validate and internal organization units of university and faculty (institutions, centers and laboratories). System of interrogative with statistic analyses results, presents information for promotion quality of whole activity of university.

Accreditation (national and international) is standardized procedure which regulated The University Law. Student's activity must be structural part of system providing quality through students' participation of university and faculty management. Procedure of quality must be ascribable and accepted with define single and institutionally responsibility and provided for corrective action. Standards of quality obligate academic institutions on successful total business.

Faculty and university centers for quality providing with adequate infrastructure provides work of integrated information system and rising quality culture on university. Alumnus of association and business surround of faculty and university provides reverse information which is necessary for quality level rise. Testing and appliance are permanently necessarily of functioning control projected system which is open for enlarging with new modules and subsystems.

Integrated system of quality providing for university enables to provide continually and progressively quality promotion all of internal and external university activities [7].

Input in system presents all requests for rising quality levels of university activities, especially those which setup European and world associations (EVA, EDNA, EVA, UNESCO, Development World Bank and others).

Outputs presents total business and reach level of certain in providing quality after lawful determine period successful business. That means development reverently, partial and especially models quality providing.

The other characteristic are, before all, complexion of discrete dynamic system, information and functionally integrated according to all university activities with multi criteria problem in coordination which requests optimization and harmonization complex and partially targets of all business levels, including and education-business surround.

#### 4. QUALITY OF UNIVERSITY ACTIVITY

The reaching high quality of all university activity is main target of academic world like environment which is able to and responsible to set up criteria of quality for other range and whole society. Institutionally autonomy and academic latitude gives such rights to university, but that is in the same time and their fully responsibility in society modeling. Quality planning is determining correlations of features and performances own business with input objectives of university mission.

In management of university activities it is necessary to make difference between three concepts, which are misunderstanding often, especially when it has a words about practice introduction system of quality on university; quality control, quality management and quality assurance.

**Quality Control (QC)** which is accompanying process of realized quality, as well as achieves wanted quality determined with validity manipulates variables, indicators or performances of business. Overlook process of quality which eliminates certain reasons which give dissatisfactory functions and results. Perception control of quality defines in industry and production, but it can be applied and in other range. It finds successful appliance in education (activity of university quality control), where high education reform according to Bologna process is sets number and rigid, but warrant requests for new systems.

**Quality management (QM)** is assemblage of management and leading criterion which systematically administrate on institutional level as well as accomplish total business quality of faculty and university. In common case, management covers with quality all activity which ensures execution of assignment quality politics and realization output quality objectives, like a responsibility in appliance quality procedures through quality planning, quality management and mechanisms quality promotion. Total quality management is concept of management with all activities which influences on product quality and services which were more accomplish in production and economic sector of society, than it's be used in academic world.

**Quality Assurance (QA)** is widely overall apprehension for continuous and always actually continual process of validity (tracking, account, accreditation, preservation and further amendment) quality of producing or some other system. For high education systems in Europe's countries is lawful engagement of university and faculty, main contents and request of Bologna process ensures quality with accreditation studies' programs and institution. To manage mechanism in providing quality is based on quality procedure with responsibility (individual, collective and institutionally) and by continually improving quality of university activity. In each institution of high education especially be observe activity of internal and external quality providing, like a compliant implementation procedure of accreditation.

Quality restitution of university activity is the biggest course limited by quality culture. This is common concept which appertains on assemblage common accepted and integrated validity of quality (often named like quality principles) which applies in some institution or society as well as adopted way of behavior and business. Confluence confidence about high education quality and academy institutions is in directly connection with cleared culture of documentation and evident business system with efficiency management, which defined business quality which gives transparent and clear reports about business performances. As well as elements of

quality culture changes by the time, and according to actually criteria and trends of development, that is sets and new quality paradigm in the institution of high education.

## 5. STANDARDIZATION AND MODELING IN QUALITY PROVIDING

By digitally description quality procedure it is necessary to be define and adequate standards with accompanying instruction as well as quality procedure be accomplish with documented base which contents quality standards. Instruction are not a part of standard but nearly determine accomplish quality procedure with applying quality standards. Good praxis in prestige institutions of Europe's high education, conduce of setting commonly acceptable procedures and standards by ENQA nets of institutions. A standard reflects the best praxis and experience obtained through developement of externally procedure for Europe's quality providing from beginning 1990. It is important because those standards must be integrating in procedures which accomplish in the organization for accreditation and high education institutions.

All standards can be participating in two basic groups:

- Internal quality providing standards and
- External quality providing standards

As well as collecting information which is essential for promotion quality system of education institution, they must project system of complementary Interrogatives as well as provide continually quality promotion. Systematically approach in contents of complementary interrogatives defining conduce that on quality of teaching affects with expert's opinion of relevant examiner. Answers in interrogatives write credibly and relevant model of examiner in defined procedure and quality which elude statistically arrangement and analyze.

Interrogatives design is complex assignment which sets condition to designer to inflect and way of getting and presentation of assignment. It is necessary to use positive experiences of other education institutions. Question must be relevant and precise defined in relation on problems and for examiner asks for its opinion and attitudes.

Still always exist undue resistance of teachers which consider that apprentices and students is not to explain about quality and contents of subject, like teacher's behavior in performing teaching and account. On other side, apprentices and students are not enough interesting when they need to give their opinions voluntarily, about teaching and teachers. Statistically data processing in Interrogative, obtain results which the oftenest present statistically average values whose free biased and emotionally account.

System of complementary Interrogatives contents questions with followed answers which contributes continually promotion quality system from different watching angles of this complex problem [8].

Interrogatives of quality system can be participating in more groups:

- Interrogatives previous secondary schools,
- Interrogatives for students on The first and the second studying degree
- Interrogatives for students of doctor's study (the third degree)
- Interrogatives for employers in education-business institution surround
- Interrogatives for employers in determined education institution

## 6. CONCLUSION

High quality reaching of all university activities is main features of academic world like environment which is able and responsible to setting criteria of quality for other range and whole society.

University like complex dynamic system with education-business environment makes greet numbers of activity. Total business requests coordination of all activity and optimization partial results refer on setting general criteria.

Coordination problem requests responsibility with possession knowledge and competence for essential cooperation. Algorithm of making decisions in coordinating business need to be a part of adopts quality procedures which need to provide responsibility on more hierarchical levels and eventually corrective actions.

Integrated quality systems define university activities which start from request of Bologna process and European trends in national system development for Europe's university.

Integrated system analyses quality providing for university is permanent engagement of university. Analyses refer and on tracking successful praxis Europe's and world's university. It starts from referent and special models quality providing. Quality indicators must need to define to be comparative at faculty and university.

Studies' program evaluation is postulate of accreditation, vested diplomas consideration and postulate for high rating in future rang list Europe's university.

Academic institution evaluation refers on University and institute. Internal evaluation can be validate and internal organization units of university and faculty (institutes, centers and laboratories).

Interrogatives system with statistic analyze results represent information for promotion all university activities. Accreditation (national or international) is standardized method which was regulating by University Low. Based on ascribable and accepted quality procedure ensures documentation for partial and total evaluation, as well as national and international accreditation. When establish integrated data/knowledge base of quality providing system, all analyses and necessary documentation for evaluation and accreditations would be getting automatically. That is long-term features to 2010.

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## **NEW MANAGEMENT CHALLENGE IN EDUCATION SYSTEM**

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***Summary:** Modern society is characterized by dynamic changes, intensive development of production, information and telecommunication technologies, thereby making conditions for quality changes in all spheres of life, and especially in education. Scientific research and everyday practice prove that it is necessary to implement modern concepts, techniques and technologies of research in education system managements. These are in the first place concepts and technologies based on knowledge about general assumptions of theory of systems and informatics, knowledge about construction and linking of internal parts of the system, as well as linking the system with other systems in the surrounding. This is why system technology can be used in education system, i.e. in system of learning, storing of knowledge, transfer and use of knowledge and primarily in the sphere of management.*

**Key words:** education, education system, management

### **1. INTRODUCTION**

Modern society is characterized by dynamic changes, intensive development of production, information and telecommunication technologies, thereby making conditions for quality changes in all spheres of life, and especially in education. Appearance of new knowledge made society of information, in which confluences of new knowledge, transfer, using and storage based on contemporary information technique and technologies and methods which permanently changed and improving.

Science-technique revolution basically changes relations between science and production, science and education, production and education. Unimagined development prosperity of science and technique immediate influences on education, its contents, methods, technique and appliance, as well as teaching total organization, respecting their efficiency and effectively. We are knowledge witnesses' accumulation of quality and quantity, as well as accumulate by geometrical progression. Evaluation is that in next two decades, available knowledge would be useful only with 20%, but with available technologies.

Information technique and technology basically changes education infrastructure and all management process elements. Telecommunication net becomes not only source of knowledge, already transfer instrument, reliance and knowledge storage, but like and tool which can to enlarge efficiency education institution management.

### **2. EDUCATION AND EDUCATION SYSTEM MANAGEMENT DETERMINING**

"Management means activities coordination refers to job, so that they accomplish efficacy and effectively - with people and with a help of other people [1]. This definition is argument more for necessary and account of management in education. Therefore, "education institution manager is somebody who works with people and with help of other people and coordinates their work as well as accomplish education features." Because of that, universality necessary for manager's knowledge on whole levels in education institutions exists.

What managers work in education systems?

**Functions** collected in four basically functions, so they are: planning, organization, leading and control. These functions are order of elements in management process which there are in mutual interaction and in reason-sequence connections and relations.

**Abilities** of manager which preserve a wide spectrum manager's activity are conceptual (understanding organization, business model, information using ability with problem resolving features, innovation searching...), communication (ideas transforming in words and action ability, communications and credibility between colleague...), effectively ability (conduce ability on common assignment, parallel work on more jobs...) and communications involve ability (teaching and mentoring ability, team work, work with various people and culture...).

### 3. Education Organization Determining

All organizations, profitable or unprofitable, as school, faculty, or University, has some common, but and especially characteristics, comparing them with other organizations. Yet, their common characteristics are:

- all of them have own purpose, they have organization features,
- all of them consist of people which work on features realization, and
- all of them have appropriation structure.

Organization structure can be traditionally - with hierarchical relation, oriented on commanding and decisions on top, with strongly appointment rules, regulation, and precise appointment of working engagements and new - organization which follows changes in society, which is flexibly, dynamic, with lateral and nets relation, without hard description of working engagement and team oriented.

It shows that no organization which is roundly traditionally or new one. All organization or design is though once must be young and modern, and later traditionally as such less efficiency. However, it's clear that organization must adopt on changes (society, economically, political, technological, global...). On that way they become open, flexible, and dynamic. "Changes are organization reality" [2].

Just requests of new society, society of learning and changes by setting up ahead of education new requests. Education institution must be polyvalent, open inside and outside, and able to quick react on changes, so that flexible and dynamic. Organization concept changes are reason more for knowledge from management theory. Management is universal necessity of all organization, without respect on size, level and type of organization. And in the smallest traditionally concept school and director and teacher are planning, organizing, leading and controlling process, while that necessity more expressive in education systems of high level organizing. That, what they officiate on various levels and on a different ways, not decrease management universality. And we do not mentioned that management understanding needs to each men who would understand relation in the organization in which he works, behaviors of its managers, making decision way and many others important things.

### 4. EDUCATION AS SPECIFIC SERVICE

Education belongs to service's sector. Because of that, determining education service can perform from service, and what is naturally, because this two things must be watch like relation between mutual and especial, namely system and subsystem. *Coulter* on service means "on each activity or interest" which one participant offer to other, but what are essentially untouchable, as for results they have not property on anything. The service by this perception can, but must not be connecting for any physically product. Here is main subject untouchable like its main characteristic.

Education is belonging to work-intensively sector. In them is tasking great numbers of men, as they are in function of present services from education system, or they are in function of services useful. This cognition is valid even in conditions of high appliance information technique or technology, which can be in function of faster transfer and storage, i. e. bringing of leading decisions. This specify reflects directly on risk of successful education system business, what is and logical because it shows that is the most complex to leading with system in which becomes high presence of living work.

The facts that last ten years, teaching capital involves and intensively develops, teaching methods and shapes of work in affectivity and efficiency rising function of teaching process, as was change education institution design. Processes of modernization existing technology is faster going on in production range and it aspects with all rights that school and faculty follow inovative process and educate young experts according to society and economy. Barely last ten years, with greater reliance computers in the school, made conditions for quality innovation of education technology. Multimedia program created for PC enables to create electronic manual with text, picture, sound animations and movies, so the apprentice can self-progress in fulfill of teaching contents, then return on contents whose is not clear completely, to gets some added and reverse information according to own possibilities and interesting. Interactivity and quality of presented materials with reliance multimedia and hypertext, gives extensively reach full contents in compare with teaching which performing in traditional classroom. In hyper medial system, with quality and comprehend way can be approach on multimedia contents,

and accept intellectually essence. Technology of telecommunication and mass reliance of Internet, enables interactive learning on distance, based on systematically approach with reliance of multimedia electronically information choice.

Computers' technology becomes universally present in education. Computers' technology which enables geographically distanced people to communicate at the same time (simultaneously, synchronically) or delayed (none synchronically), not requests any especially high technical education and big computers experience. That, what is important for teaching and teachers are that is computers' communication with big different from communication "face to face" in three elements.

- physically surrounding,
- determined time and space,
- various structural communication.

Evolution of education moves from traditionally education, over mailing education, distanced classrooms that would achieve own sophisticated technically technologically level in form of virtual classroom, faculty and university. On field of new education technology we meet with new terms, directions, observatories, programs, institutions, nets, associations, international organizations, universities, management and others considerable units.

## 5. EDUCATION SYSTEM MANAGEMENT OF DEVELOPED COUNTRIES

Education systems of high-developed countries bring characteristic of economy and society these countries, what is naturally, because a systems' part often carry complex characteristics. Hence, education systems are subsystem of one national union which are connect with other systems and with them are in interactive, reason consequences connections and relations.

In reverse connection, education systems affect on development and success of other systems. Here is shown that is this influence more bigger in refer on each other influences of other subsystems, what intrude necessity that education systems be quality designed, and after and same quality leads, as well as on national, but and international level become bigger effect. That is present tendency of internationalization, i. e. globalization of education service and tendency to made especially strategy in that internationalization.

Named before brings or would be done to making global education management, what would be able to lead education systems in conditions of difference and diversity, efficiency and effectively, like are economically, culturally-sociological, technically, technologically, society-political and others. From that and necessity that show same idea of European integrations which is beginning and developed inflict and necessity of integration, or creation unique European education system.

Main feature in European integration of education systems is acquirement the biggest possibility level of knowledge in Europe Union by way constantly accomplishment because accomplished Europe's politics of employment and acknowledgement vested diplomas in individual Europe's country and all countries in Europe Union. With that Europe Union would become the most concurrent and the most dynamic education, research and economic space on the world which is establishes on knowledge. Hence, internationality strategy must to understand like an instrument with which establish integrated management education study programs on more languages which understanding of professors and students and other programs of Europe Union [3].

Europe's integration trends setting up a new criterion in define future projects of university cooperation and industries. Starting from basically principles of education and research integrity, gives concretely example of one actually project in whose they are applied.

Integration of European higher education area EHEA (*European Higher Education Area*) and ERA (*European Research Area*) allude (Fig 1) incorporation research program for education development (Tempus, Erasmus, Socrates, Leonardo, Naric and other) and research program which has financial support Europe Union (Framework Programmed, Eureca, Cost, Alpha and other).

According to presented model many basically teaching discipline, especially M. A. degree and doctors studies, need to derive from range of owner teacher's research and high education institution. That means the lessons are orientated with results of research, and need to become methodic module and programs orientated by the project. Students are converging praxis in industry and economy as well as main users of research results (developed, implementation and partially basic). Starting trainings for students and experts from industry, organize on university and in industry. Students in industry are checking theoretic models and knowledge converged on examinations in real conditions industry work and economy companies as well as according to real data/knowledge base. In other direction of education, industry experts, with trainings on university, innovate earlier converging knowledge with new technologies and systems, prepare for new working contents owing to maintenance of industry concurrency on roundly market from constant changes and new requests.

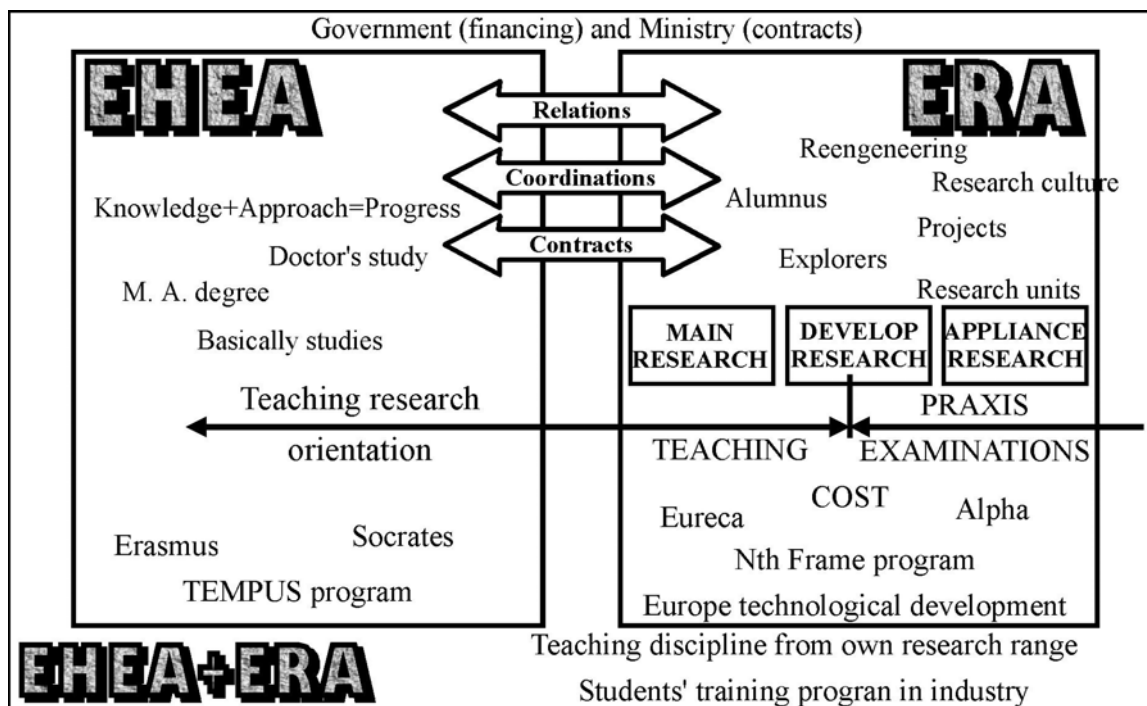


Fig. 1: Europe program of education and research integration

All business connections between university and industry need to be defining with known relation, constant coordination and agreement which need to be support by the Government and relevant ministry department. In such contracts would be define students rights and duties, behind alluding rights and duties of university and industries or economic company. With that, essential student's praxis would be rise on higher level which would guarantee better results in relation on present similarly subjects balanced on unacceptable formality. In research activity, quality will be estimate according to education as follows components:

- Actually research programe quality;
- Quality of teaching module and studies programes in research function;
- Quality of academic performances and students' working characteristics;
- Quality of academic performances and profesors' andragoghic ability;
- Teaching process quality and students' learning;
- Quality of teaching matter in acceptable of material resources function;
- Quality of relation "teaching - research";
- Project documentation quality;
- Research results quality (project) and widening appliance of getting results;
- Students' expecting satisfactory degree according to university teaching;
- Explorers' expecting satisfactory degree and freedom of critically opinion;
- User research satisfactory degree expecting;
- Employment based on appliance of research results;
- Attained level of international research cooperation;
- Interchange research results with international researches' institutions;

Universities need to prepare domestic industries for integrated processes of Europe, defined by Bologna declaration. Cooperation in common EHEA+ERA Europe's area is essentiality which requests esspecially define of next together projects.

## 6. MANAGEMENT EDUCATION SYSTEMS OF TRANSITION COUNTRIES

Transition countries have specific education system, softly said. It is different from education system of high developed countries, as well as features and approach, so that designing, i. e. leading. It is a fact that education system of high development countries is to balance on technique and abilities, i. e. that education system of real-socialism countries, which mainly enter in transition process, more based on fundamental sciences, showing on contents of difference which cannot "merge" in unique and same education system. It is showing that education



system of earlier real-socialism countries extensively, non-flexible, aimed at fundamentals, but not to technique, what implicates more effects on longer term. Examples of significant accomplishments in high technologies, but before that in conquest cosmic space and sea deep, are result particular education and good organizing science-research work in transition countries, before of all in Russia, but and China, Japan etc. [4].

Hence, education in earlier real-socialism countries was extensively, which means it learned fundamentals, which are, in later period on longer-term gives larger effects. That was a happened in the segments which was control by state, like is military industry and cosmic technology. Thereby and it is not occasionally, that today Russia have superiority in military industry sphere, cosmic technology and other range of high technologies, refers to USA [5].

However, it shows, on longer-term, education shows their results, what is and practically happened in the last several years, especially when grow of gross production on inhabitant head, but and reformation of living standard, growing democracy, etc. [6,7].

Education systems, more-less in all transition countries, were universal according to numerical questions. Very often and buildings of school institution were uniformly, with same, or similar infrastructure, equipment, etc. Programs were unique, with precise methodology and technique elaborate in teaching perform and knowledge checking. Teaching programs are more-less aimed at subjects of teaching to learn all, what means that it was loaded from high level of determining. Universalism and determinism are support by hard regulations and statutes, with great machinery of administrative which create teaching plans and programs, and then form agencies which controlled theirs' appliance.

Education systems in great numerous transition countries are in state integration, so that it becomes organization which needs to be in state function. Even in the countries in which across sisterly solution available equality various forms of properties, in the praxis is across numerous activities show different treatment and status, where by the rule state's education institutions are privilege, refers on privates one, or miscellaneous education institutions. That is generated monopoly. It shows that is education range sphere, probably, under high-level state's monopoly. Allegation was ask in preservation basically society validity and tradition, although it's clear that without concurrency is no progress, i. e. that monopolies have negative affect on all constituents of education systems, but and on surroundings.

In actually education reform integrally quality rising of all education activities (teaching, research, services, management) is the complex assignment of especially importance. Education in the biggest numbers of transition countries, especially high education, across reform till the year 2010., need to achieve European standards in meaning of available, accessibility, quality, prices, studies' efficiency and affectivity, like and meaning validity of acquired diplomas.

Fast changes on the world market of knowledge and quickly development information-communication technologies determine totally new methods in education technology in the transition countries. Because of that, determining integrated quality system involves institutions (university and faculty), teaching plans, teaching programs, quality of executer (teachers and contributors), the way of class performing and adequate standards, knowledge tests (examines and pro-examines obligations), schoolbook literature, registration politics, students flow and examines' transit according to subjects and semesters, research organization, hardware-software laboratory resources, teaching and research organization, agreement cooperation business, designers' team composed, Research users' evidence with effect of research result appliances, and other. Integrated quality system refers on financial procedure and administrative activities (management) in the integrated information-communication system with unique university data/knowledge base and distributed complementary faculty data/knowledge base [8].

Because following business performances and quality indicators, it is necessary to define national and international use standards which are shows across output reports data/knowledge base. In the transition countries, and Serbia too, teaching personnel until now mainly validate on research results reason, rarely across education competition and across innovation in teaching process. Teaching process following and account of their reformation are especially importance for actual problem of education institution. Here, on importance especially gets good realized teaching program, still on economic side of education dedicate less attention. That is and naturally, because that means on state, or public institutions, which is on rule, internal behavior irregular, i. e. non-economic.

Actually teaching plans and programs are often non-compatible with society necessity i. e. employer, which doubt useful "product of education". Praxis shows that and in the transition countries necessity to establish national standards higher criterion for candidate rank during their registration in schools' establishments as well as decrease the different in academic institutions and as well as too achieve bigger criterion equability during registration. It must to establish relation between carried knowledge from the secondary school (wit graduate) and teaching programs of high education. Individual education systems (faculties) have their own criterion of selection which refers on determined objective and department. Less successful students need to get a chance to change faculty or objectives (the most lately after the second semester). Statistically tracking vertically crossing across education levels and study degrees is characteristic of successful education system in each country.

## 7. STATUS OF MANAGEMENT AND EDUCATION SYSTEM IN SERBIA

Each national community, depend on available resources and self-appropriate, developed to oneself appropriate economy and society, what presents across politic, that's to say national evolution strategy. In creation of oneself way of development, each community uses some basically knowledge and experience from other countries, with respect on oneself specificity and characteristic which are different from other countries. Before namely shows that not exist isolated countries and that each country must to respect nearest or widest surround, with this is in interactive relations and connections. In modern conditions that are more present, because integrated process disestablished national, customs and other borders and the world made as global village.

Named conclusions are valid for Serbia whose has lot of common, but and especially physically, climatic, technological, religions, practice and other culturally sociological factors and ascendancy. Serbia belongs to Europe and it is a part of European culture and civilization. Because of that, when education is mainly, must depend on European education system, i. e. standards which accept and took Europe Union. Serbia, like socially political community is part of Europe, that it is its subsystem. Relation between European Union and Serbia need to observe like relation between complex and fragment. Cybernetic and holistic shown to us that is fragment important, but complex is the most important. Hence, strength, i. e. power of European Union determined to us the weakest link in that complex. So, European Union must be interested that each of their fragments must be balanced, because if one state not tracking all of other states, this grouping loose own cohesively and integration power, what negative affects on its successfully. Serbia also must be interested to divide validity system which is formulate on Europe Union's level because from complex it can to use determined potentials whose it has not, or not would to dispose in conditions autarchies.

On other side, education system must to tracking and synchronize its own activity with employ-market, that's to say, with requests with employer, like them from Serbia, so that and out of nationality borders, and before all Europe. In that means in high-education systems Bologna declaration establishes, as if a document which is accepted on Europe's level and all countries whose signature that document, need to establish unique standards and criterion, in features harmonization and higher propulsion of people when employment is mentions.

Education sector is reunion each other connected and eventually systems which have common lines and which insists that individually, or each other's connection accomplish the features which establisher puts ahead them. In wider sense in services activity belongs and state administration, public services and companies, social-politic organizations, vocation association, religion and other organization. Their further diversification can be to deeper and analytic.

Standardization of education establishment can be different on education level like as primary schools, secondary school, higher schools, high schools, academy, institution etc. In wider sense, education-pedagogic and cultural institutions are and other organization which are occupied with education, nurture, training like they are nurseries which pedagogic educates children, military organization which educates people for defense, i. e. covering of survival, increasing and development, like a main features in each organization functioning. They involve sports, cultural and pedagogic institutions and organizations and organization which occupy education-pedagogic work. For Deming education system consists: state, private, curacy, commercial and trading schools, university etc. All of them must to make educated citizen and own self thinker whose may alone to made difference profit and damage, i. e. good and bad and that they need to enable for own self life and work [9].

Education sector in Serbia according its organization design is deeply structural and centralized. Republic of Serbia Government, is according appropriate Laws, the oftenest establisher of all institutions in social properties. With these institutions, leading was perform in financial, development, staffed and investment politics, from resort ministry, what makes big problems in reaction speed on determined changes which come from surrounding.

Education sector of each nationality community and in Serbia too, is strongest according to competence. It has appreciable bigger percent of high competence equipment in relation on industry sector, what setting up necessities that in management with them, apply softly leading style, and for managers establishes leaders who are competitive, the men for accomplishment institution features. That is naturally, because that denunciation by "stick" can do nothing even in the family, and let alone in high intellectual organization. According to mentioned, leading in education systems of Serbia, need to be organize on transformation principles but not classical.

In Serbia Basic activity according to management, deals destiny of other economy and society sectors. Here management still not yet animates in volume and on a level it's practically appliance in market-development countries. It is in some elements getting worse in relation on earlier period before two decennia. That's results and bigger part and our undeveloped. The unbecoming economy and society leader professionalism certainly is one basic reason of our bad status. It shows that without high professionalism leading structure and responsibilities cannot do radical step from existing undeveloped and none concurrently.

Specified resume can be performing from several facts, which is the most important next:

- In education system of Serbia is dominant state's education system of all kind. Private sector is still marginally in this range. About privatization of education system in Serbia is little speaks what reflects directly on injection of professionalism in leading. This reduces system inertness, not enough interesting for education-pedagogic quality process and their product.
- Education system of Serbia with all characteristics belongs to a group high structural system, i. e. systems with "deep range" in which becomes classical relations over and subordinate from the highest to the lowest level. In such projected and maintain structure, each higher level has and larger quantum authority in relation on lower levels, what means that lower level have obligate to execute decisions of higher levels, just like defined, with small level of flexibility. It shows that no exist two same education systems and that would higher flexibility make better all elements of organization and management process.
- Management in institution of education in Serbia regulated with Law regulation about education and pedagogical system base, like with Law about high education. Based on Law, education institution regulates leading with foundation act or basic act of institution. For example, in education institution, which is Republic foundation forms next management agency: Management board, school board, university council? Their rights and competence determined by Law. The most important competence is to make decisions in rights and responsibility of director or dean. Decision of management agency about director choice is finally if ministry competent for education gives agreement on decision of management agency.

It is clear that management agency in education institution haven't knowledge from management range, organization, preconception of future and features setting and executing. Because of that they are not growing successfully of education institutions, already represent stereotype. The praxis of management agency was show unsuccessful and in big world companies, what is constitution P Drucker. "According American Law, management board still always suppose for management agency of corporation. Authors who write about management and peoples who leading do by science side, agree that strong management agency still always from essential importance, about what they wrote more than 20 years. Beside of that, the function of management top our big companies already half century decreases, because the higher function of director, their authorization and independence. Even any big companies get business failure, during last few decennia, the last one, who would seen that things getting worse, was management board [10].

The necessity for experts of management in all range is not necessary special explanation. Hence, experience of developed countries show that "in West Europe today has about 200 business schools, or the places on which educated management experts, while USA it has 2.000. If would be take regularly studies or lower level of education, including and out institutional range like course, post diploma i. e. master study, this number will be bigger several times. In Athens have more than 50 high schools institutions on which it can be learned management. Eminent European schools have own filial as on all wide world. High business schools are be opened and in transition countries, as well as individually, so with cooperation with international faculties and universities [11].

In Serbia is foundation high education institutions on which are school management staff. Whereas, that number is not enough in relation on necessity, what it is naturally. Because is known that long-term one-party government in Serbia has negative influence according to management and consider that it was the biggest enemy self-governing sociality association. That is research of Economy Faculty Institute in Belgrade, in the middle of 90th of last century, shows that in Serbia missing 200.000 managers and that profession which the most wanted [12].

## 8. FURTHER DEVELOPMENT TENDENCY OF EDUCATION SYSTEMS MANAGEMENT

Further development of education systems management would be depend from global trends and changes whose would be approving on global and national level. Considering that is modern period followed by revolutionary changes and that in the future need to expecting more bigger turbulences, it is hard to anticipate what will be happen in the future, i. e. which trends and tendency would be affect in the future education systems. Though it is difficult to forecast what will be happen in the next ten, thirty, fifty or hundred years, it is not means need to forecast, especially in the science and in management profession, which are, according own essence in engagement that is missed information - to forecast. With inductive, it needs bear in mind annotation A. Tofler: "I am not diviner to forecast what will be happen in the future. Nevertheless, based on that what happened to now, I can with great probability forecast what will happen in the future [13].

Hence, already and present status of education in high developed countries shown on the future of education especially in the transition countries and in Serbia, which less or more must past across the way on which past these countries. The difference will be probably on much shorter way and easier overcoming barriers which was approve in the past at developed countries. Inductive constitution is logically, because the countries which are follower determined process, or transition countries use experiances to marginalize mistakes which approach or whose will approach in the future.

The fact that importance of knowledge in providing prosperity on national and global level, is grown up, and puts in first plan development of education institution and systems which occupy education and learning people. Irrespective what a man can learn on various ways, nevertheless is determined that the most efficiency and the most effectively learn in education an institution that is to say on universities. Because of that education institution would become, than what ever were religion temples, places where the people will to accomplish new knowledge, abilities and competences. They will become and stay the temples of knowledge, instruction which never going on, because the knowledge not to be passed caprice, already resource over resources which will define and progress of humankind.

We must know or forecast what will quantity and quality happened, we must notice new education management challenges in third millennium, i. e. from where to whom going the world and where in the future it goes.

In next period, education and organization which is occupied with it, must be understand like and each other business system. They are large and complex systems which functioned on integrated decentralization principles. Hence, each decentralization part is independent, but and integrated in higher organization level, to University, and then integration of university to creation global education system. The common of global university is that would learn everywhere, it would become learning standards and criteria and valuation, but how would learn, that would depend on particularity of separated countries, before of all cultural and sociological component.

Large scale systems and complex systems defined in many ranges of science and praxis how would be, defined and understand and how would be determine and accept management optimal way, using management theory, Inductive fact is non-contestable, and in the perspective it would have input trend, because that presentation is , the first condition to sub mount, but and successful management. Their definitions elude determining subsystem which made system and modules which make subsystem. Functioning of each module and subsystem can be elaborate individually, but and integral in the frame of subsystem, i. e. system in which are integrated based on common system theory. Increase complexation of education system is real trend in the perspective.

Complexion of education system comes up from undeniable fact that system is with great numbers of components and variables which characterized nonlinearity and which functioning in uncertainties conditions. Decomposition on smaller and applicable subsystems for managing it is possibility organization with better information exchange and efficiency coordination mechanisms. It has not doubt that exists difficulty in the formal modeling common attributes complex systems which large number of dynamic components interactive gender on non-linear way.

Education institution is complex system with faculties; departments and schools which have own organization units (desk, institutes, colleges and laboratories) and study's programs with university diploma. Education institution has own integrated systems quality insurance which subsystems and modules must be defined, so that complete complex because continually quality promotion in total business.

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## **MAINTAINABLE DEVELOPMENT TOURISM IN SERBIA**

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***Summary:** Tourism is important factor today in context maintainable development and presents complex phenomena whose data, in sense of influences on natural surrounding, culture and economy, not is neglect anymore. In Serbia, it acquires political, economical and intuitionally conditions for implementation maintainable development in tourism domain - but it must appliance in the frame of universal nationality plan (efficiency, constantly any with control). In tourism development politics, like non-indirect and significant sector, Serbia must making powerful and quality turning point toward new approach coordination tourism development which environment endanger. Tourism, strategically complete observer, presents the way of one country introducing. Tourism management on strategically level must to recognize and review Serbia's tourist potentials, from aspect of maintainable development and new worlds' trends.*

***Key words:** tourism, strategy, maintainable development, management*

### **1. INTRODUCTION**

"Tourism is assemblage of relations and appearances which derived from travelling and sojourn of visitors (tourists), if that sojourn not mean residence and if that sojourn is not connected with any economy activity,"<sup>1</sup> with it progress "pleasure by travelling and staying in different places" [1]. According to once definitions of World's tourist organization "tourist is a person who travel less eighty kilometers from residence place".

"Maintainable tourism is every form of tourism which conduces with protecting environment, socially and economic integrity and improves natural, vested and cultural validity on permanent base" [2].

To Serbia, it is necessary fast and basically implementation maintainable development in economy and social praxis, like aim-oriented, long-term and continually, universal and synergetic process, which directly affected on all aspects of life (cultural, social, economic, ecologic and institutional) on all levels of economy and agriculture (it needs do build touristy objects, roads but it must to feed tourists). Causations for emergency essence of maintainable development appliance in Serbia are well known and they are, we hope, history of natural catastrophe, communist social-politic system and that transition in quasi- socialist system which brings to dearth and degradation of society, wars and sanctions of international community, NATO air attacks etc. Whole of that had consequence results on undeveloped ecologic mind, domicile's people low touristy level, inadequate level of staffs education. "It is no internal development without much bigger management appliance in Serbian tourism" [3].

Named factors talk about and the reasons undefined tourist product and no development of Serbia's touristy offer, i. e. low results of tourism according to potential possibility.

According international praxis, building maintainable development strategy of Republic of Serbia [4] organized like participative process with assistance the most important interested sides in the society and it define main direction tourism development in the country, with clear ascertained priorities. Strategy structure based on three "columns" of maintainable development, so they are:

- On knowledge based economy,
- Economy-social questions, and
- Environment.

Hence, the target of strategy maintainable development is to make a balance of three main dimensions:

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<sup>1</sup> The definition of international tourist associations scientific experts (ATEST) iz 1954.

- Maintainable economy growth,
- Maintainable society development, based on social ballast,
- Environment protection with disposal of natural resources

However, it is not enough to declare like a country which implements maintainable development end ecologic principles, already to become it. We must, right on time, answer on trends in tourism. We must to reach that tourism becomes the most efficiency way in development all country and society in it. We should be become faster suitable, development society and important destination on the world map, if that goals is constant reaper for whole society, that they are society movement, that we support them and always use them.

## 2. A FORMER PRAXIS AND TOURISM SITUATION IN SERBIA

In Serbia is evidently shortage infrastructure which supports development of maintainable tourism. Also, in Serbia misses efficiency and adequate planning of waste materials management in touristy places, in function less negatively influences of tourist activity on environment. It is necessary especially accent puts on development ecology-friendly technologies and maintainable power sources.

Behind of many of numbers tourist potentials, Serbian tourist products are not adequate development, just which not valorized on world market. With present, about 87.000 lodging capacity, Republic of Serbia not reach business results even approximately as concurrent countries. Because of market closely, restructured and privatization process was late, it was not significant investment from country and foreign countries, so that is not come to develop new forms tourist offer. Because of high centralization it default investment in infrastructural keeping inheritances tourist destinations, because local community can't finance's answers to their requests maintain and let alone development.

In Serbia existed lot of reasons from tourist branch caused not bring about appropriate postulate for entrepreneur development in tourism branch, for new tourism product development and for stimulant to other sectors of economy. Because of high participation illegal economy and unordered statistic in tourist sector, exists problem objectivity presentation today's tourism macro economy labor outputs on Republic of Serbia economy. According existing statistic tourist sector participates with 2.5% in national gross product and 5-6% in total employment in Republic of Serbia. Based on performed primary researches, it determines that average hotel in Republic of Serbia, has 105 rooms, that it is old 42 years, that is the last time refreshment 13 years before, and that is dominant objects with two and three stars. Average hotel in Republic of Serbia, accomplished about 8.000 euro/room during the 2004 year, according the same average international standard category less 2.5 times bigger. It no doubt that Republic of Serbia must to do powerful global concurrency and global attractively of tourist products, taking in consideration new world experiences, supported by our own innovatively and these products in tourism which have perspectives with which help Republic of Serbia can build concurrency.

Republic of Serbia tourist validity chain not built, except in Belgrade. That is opening a question of standard, service quality and loyalty against Republic of Serbia, as tourist destination. It needs accentuate that is not present some of essential postulates for true implementation of this concept - intensively participation local community and contribution non-government organizations.

Approaching disadvantages, in meaning infrastructures in Serbia, presents real structurally weakness which disable tourism development in some condition. Especially problem and, probably the biggest barrier, presents road conditions and completing and treat waste materials - maybe, only question which must is resolve in very short time, as would this frame had chances to appliance.

"Many of nations give priority to tourism development because of their vitally important in economic and cultural development and positively influence on employ places opening, new infrastructure, tax profit and foreign capital transfer" [5]. Serbian tourism identified like economy branch of strategic importance. That is more potential or aspiration than indicator available status, with consideration that tourism momentarily relatively associates a little in total BDP, (gross society product), in addition to, this economy branches fail quality capacities, diversification and recognized tourist product/attractions and qualified people like some of basically developing postulate.

Reforms in economy in tourist development section, according to Agenda 21, like main goal, leads that is necessary to developed maintainable tourist product, which will initiates progressively growth guests number, fast growth net operating profit and opening new employers' places. Tourism, in phase where it is, needs to integrate natural and cultural richness which Serbia can offer, because of making better and miscellaneous tourist product. In meaning of country interior, tourist offer would be seriousness better, what would enable forward movement in validity chain, i. e. quality improve whole tourist offers.

Small amount profit per tourist is result great number tourist transfer who dissipate less money, what means that is necessary to offer more and variable high quality products/services, how the tourists start dissipate or changes those tourist with other one who's dissipate more money. Acquirement higher additional amount and less money

flux in tourist section depend from clear and wide accepted respect assemblage of goals. The goals of latent tourism need to be concentrate on offer authentic Serbian experience in each region of Republic.

The factors which determine momentary situation according tourism in Serbia, can be define on next ways [7]:

- Long term absents from international tourist market (till 2000. year) because sanction action (insulation course of international community, like a course of self insulation),
- Non-equivalent participation and integration local community and determined social groups in the frame of tourism development
- Infrastructure disadvantage, especially in villages' areas,
- Non-existence adequate cooperation with foreign journey organizer,
- Not enough Serbia outstanding, like tourist destination, on market - not enough profiled image or and negative image which derives from action of non-tourist participles,
- Leave adequate national, regional and local development structures, management and promotion tourism sector,
- Long-term decrease quality tourist services,
- Non-adequate management environment protecting in tourism function,
- Existence tourist product which were check on international tourist market and for what exist belief that is possible to find market segments.

Serbia's tourist and catering industry (Table 1) [8] Constitutes 1938 enterprises, from which [9] are 1273 hotel-catering (65.7%) and 655 tourist (34.3%). Participation tourist and catering enterprises in numbers of total economy enterprises (75.284) amount 2.6%.

**Table 1.** Number of enterprises and number of employers in catering and tourism in Serbia [9]

	ENTERPRISES NUMBER	%	EMPLOYERS NUMBERS	%	TOTAL PROFIT IN 000 DIN.	%
ECONOMY	75.284	100,0	1.087.295	100,0	4,729.648.423	100,0
HOTELS AND RESTAURANTS	1273	1,7	23.030	2,1	29,495.911	0,6
ACTIVITY TRAVEL AGENCIES AND OTHERS..	665	0,8	2.900	0,2	5,901.237	0,1
TOTAL-HOTELS AND AGENCIES	1.938	2,6	25.930	2,4	35,397.148	0,7

In hotels and catering enterprises employ 23.030 operatives, i. e. 88.8% from total employment in tourism and catering, while in tourist agencies employees 2.900 operatives, what means 11.2% from total employment in these branches. Employment in tourist-catering economy (25.930), associate with 2.4% in number of employment in economy (q.087.295).

The biggest numbers of capacities are in Spa's and mountain centers. With this objects categorization, existing offer systematically be adaptation to standards of international market.

In sectors Hotels and restaurants [9], enterprises from three branches (1.162) make 91.3%

- Restaurants: 45.2% (576),
- Bars: 24.1% (307),
- Hotels and motels with restaurants: 21.9% (279),
- number of enterprises in other branches (111), is 8.7%.

The biggest number employers also are in three presented branches: (21.118), what means 91.7%:

- Hotels and motels with restaurants: 53.6% (12.358),
- Restaurants: 29.4% (6.777),
- Bars 8.6% (1.983),
- Number of employers in other branches 8.3% (1.912).

## 2.1. STRATEGIC FAILURE TOURISM DEVELOPMENT IN SERBIA

The main strategic failure which Republic of Serbia authorized organs must to resolve that would Republic of Serbia accomplish successful on international market are:

- 1) On international market still not yet consciousness about Republic of Serbia like tourist destination, especially because of fact that country still have not yet national tourist brand yet, and still not formulated

and internationally commercialized known tourist products yet, based on experienced system, like and very low level of budget for tourist promotion.

- 2) Deficiency whole concept of national vision Republic of Serbia tourism, deficiency local (regional) visions like and deficiency tourist structured Republic of Serbia tourism, based on dominance experiences.
- 3) Because deficiency cooperation and coordination between ministry and relevant interest groups in Republic of Serbia tourism, still not enough articulated and established space-urbanity regulative mostly present and potential tourist destination and centers, deficiency protection and servicing main national, natural and cultural resources/attractions, illegal building, like and non-appliance the LAW, control and punitive politics at accidents on environmental areas (wild waste stocks).
- 4) Deficiency mind and understanding system importance tourist experiences system and recovery whole chain of validity at most present products Serbian tourism.
- 5) Limited approaching in Republic of Serbia, i.e. partially their tourist interesting parts, as if combined consequent of small numbers functionally airports, deficiency low budget airlines operator, i. e. small numbers of modern motorway and common squalor road, rail and river infrastructure.
- 6) Deficiency of international qualified hotels and tourists' manager, staffs in new tourist employers (animation, entertainment, manifestations, thematic parks, interpretation centers and others), like and low mobility of employers and ordinance system non-flexibility (season work, flexibility work time etc).

All relevant markers about former tourism development, indicates that tourism in Serbia, till now presented missed chance. If history situations were different, it is doubtless, from aspect tourist requirement and resources base, Serbia would be one from more attractively countries in Europe. It can evaluate that Serbia's tourist economy was much protect - as follows protected from foreign concurrency, because limited foreign investment in tourist capacities of Serbia, from stronger influence action of requests, because nothingness long-term stabilities origin requests, like and protected from one self, due to business before known and limited request.

### 3. REPUBLIC OF SERBIA TOURISM DEVELOPMENT STRATEGY

"Tourism is very important economy segment and presents branches which gives possibility for development of whole social community. Development and organization Serbia tourist offer contents, untwist across tourism of big cities, transit on main road directions, mountains, spa's, hunting, village, ethno and eco tourism in preserved natural environments, nautical tourism on Danube. Products and services of many actions which is forming in tourist product assists (trading, traffic, agriculture and other), makes big portfolio across tourist spending" [8]. Profit from tourism can be direct and indirect. Under direct profit we consider money which tourist deposit directly (accommodation, agencies, and other tourist services), and indirect profit we consider toll and other expenses. It, what is mainly is profit and expense from tourism. Profit is how much money gain from foreign tourists, and expense is how much money nationality of any country leaves in other country. Collecting these parameters gives tourist account which can be positively and negatively (leading positively account has Spain). Some of leading tourism countries is France, Spain, USA, Italy, Austria, Thailand etc. Consequence of maintainable development tourism would be brand and make good image about Serbia, on that be continue reformation all others market and social segments.

Serbia's perspectives for tourism development must be implementing in context of forces which management with that development. Namely, preferences of relevant goal's group must adjust with resources with which country dispose. In Serbia it is must find under surface and aspire to something completely different because there are resources and possibilities for tourism development. So far from old "brightness" of global tourism (keeping good principles) according to resources and possibilities must defined relevant assembling of strategies. The question which imposes here is: What are this market needs, and these region can offers? On this question, we would answer by analyzing trends on world tourist market, and strategy which going from that comprise.

Development in sense of nurture and accomplish of stimulants, classes leaders-visionary in branches maintainable tourism, which would aim to complete three the most important competition hospitality of world rank, the most contemporary accomplishments in range nature preservation.

Certificate editing for tourists enterprises work in coherence with their maintainable practice/respecting of principles maintainable and stimulation/recompense the best ones.

Conditions made for edification of partnership between small local business and tourist industry.

The passengers cover with unforgettable meetings with nature across redefined quality of interpretation ecosystem by the way of rising information level local habitants, their education and practice.

Better protection nationally parks and private protected area with untouchable nature and promotion of this dedication protecting nature across afforded the new Serbian market of tourism and brand.

Promotion contacts between tourism and local suppliers, tourism and other sectors. Directly connection areas with maintain wildness and rural areas which tourist visited with products on farm which supplies from nature agricultural methods.



Visitors' ecology sense promotion

Stimulation of coordinated action between donor's comparative thinking (e.g. EU, some governments of developed countries, UNDP, World bank, etc). The greatest numbers of precautions on international plan is route on green tourism or maintainable tourism.

We'll start from examination the most relevant indicators of dynamic sector, which is in nowadays-confused many of experts for tourist development, which is occupies with train of this section in last 50 years: appearances of new significant "fields" on tourist market which have wonderful implication for Serbia. It would need to be confusion. Travel experiences which are articulate for "fields" (new offer on market) becomes a rule, but not softly intrigant exception between destinations which wishes to be separated from others and maximize EXTRA amount in tourism, like and kept amount, that is to say, amount/profit which stays in same tourist destination.

Strategy tourism development in Republic of Serbia, consists description available status in tourism in Republic of Serbia, possibility of tourism development in Republic of Serbia in relation on moving in world tourism, description of development instruments concurrent countries, strategic tourist advantages and disadvantages in Republic of Serbia, Republic of Serbia tourism vision, strategic-tourist positioning of Republic of Serbia, priority choice Serbian tourist products, tourist structuring of Republic of Serbia, increase model, postulates for efficiency tourism development politic in Republic of Serbia, concurrency plan, investment strategy and plan of necessary investment and marketing plan.

Using methodology of tourist master plan making, this strategy consists from two parts:

- 1) The first part covers analyze of condition in Republic of Serbia tourism, market and bench-market analyze, strategic positioning Republic of Serbia in tourism, analyze of common scenarios of Republic of Serbia development, Republic of Serbia choice of tourism products portfolio, tourist structuring Republic of Serbia, Republic of Serbia tourism increase model till the 2015. years and define the frame for tourist politic Republic of Serbia.
- 2) The second part covers Building plan concurrent tourist sector in Republic of Serbia, Strategic marketing plan in Republic of Serbia and the Main investment plan.

This strategy is a system reform base in tourism field and for building normative and other documents from tourism field. With this elementary, Republic of Serbia must to initiate positively images on world market, provide protection and maintainable nature using and cultural patrimony, like resource for tourism development, and improve quality of population life and provide protection tourist consumer, according to experiences of developed European countries.

"Serbia offers various adventures which need to be structured on that way to enable easier Serbia understanding, like tourist destination on the market. Branding system of Serbia must to enables structural inspection in tourist offer and attraction structure, and same time and revives Serbia's image" [10]. Expected results of using Strategy are progressing of concurrent increase Serbian tourism, increase foreign exchange inflow, domestic tourist market, like and employment increase by tourism, by transformation Republic of Serbia in concurrent tourist destination.

In Republic of Serbia exists adequate normative of postulates for tourism development. Tourism developments strategy Republic of Serbia defines main directions tourism development in the country, with exactly determine priorities. Strategy accentuates maintainable tourism, in which natural amount due to their economy effects. Project realization in tourist destination; induct Serbia on international tourist market, what would be contributing total growth tourist currency.

The Government Republic of Serbia brings at 2005 Law of Tourism [11]. It is pending activities on text complementation of Law of Tourism. Significant new would be referring on establishment State Agency for tourist development, which tasks would to be:

- Implementation Republic of Serbia strategy for tourist development,
- Development of new tourist destination and region,
- Preparing investment plans and programs,
- Education for preparing tourist projects,

### **3.1. Implementation of Development Strategy Maintainable Tourism in Serbia**

Dominant role of implementation concept maintainable tourism have Republic of Serbia, Ministry of trade, tourism and services, Tourist organization of Serbia, Yugoslav association of tourist agencies (Group of authors, 2000). In accordance with common changes in our society, especially significance in articulation common-socially manner and interest with reference to maintainable tourism development, will have non-government organizations (NVO) in function of mediator between institutions and public opinion. The goal would be creation especially sort of partnership and injection dialog process in maintainable tourist development. Essential basis for Strategy success on responsible and maintainable tourism development in our country is education al main members about bases responsible maintainable tourism development and ways of dialog accomplishment

and partnership between NVO and others main actors responsibility use total resources in tourism development process.

"Strategic tourism management must to take care on future tourism development, and that future tourism will be maintainable. The concept maintainable tourism can be transformed like: positive approach which tends to decrease tensions and functions which arise from complex interaction between tourist industry, visitors, surrounding and society like an establishment" [3]. Development define maintainable tourism presents good base for promotion inter-sectors cooperation in all domain and all levels, with attention on amounts which classic tourism not valorized on right way (restricted areas, cultural legacy, etc).

Becomingly existence of organizing on macro level is one of basically postulates for realization strategic goals tourism development in one country. Individual problem in means of tourism refers on necessary for existence self-organs, as carrier tourist politic as well as organization forms with which would be adjust various interests of various actors toward define and implementation tourist politic. On that way it would be accomplish and wanted "confederation" of interest, in measures where tourism appears as integrator various economy activities, various economy and non-economy activity. I.e. like specific activity in the room.

Global platform for tourism changes positions across documents like Global ethic codex in tourism of World tourist organization, Declaration about eco-tourism from Quebec, Recommendation for development maintainable tourism in sensitive regions, Directives for preservation biodiversity. All of them show on new paradigm tourism development, activity which is own planning multicultural, maximized local prosperity, conduce maintainable management in environment domain, enables cultural exchange and brings to essential dialog on all levels.

By the Law forecasts setting up of Fond for tourism development and profit would be accomplish from Republic of Serbia budget, and part of tourism allowance, donations and credit from the country and foreign countries. The Law also would be adjustment with other cannons, user protection of tourism services, and creation normative basis for tourism services standardization on international market.

It is necessary that all named documents be very fast and efficiency applied, or innovate and changed with new one because harmonization with conclusions European Union, adaptation to modern trends in tourism development, like a completely changed internal and external ambient.

Agenda 21 contributed identification universal behavior rules in tourism, and its continuance is Agenda 21 for tourism economy.<sup>2</sup> This document determines efficiency and activities owing to protecting of environment and life's tourism in XXI century, to subjects in tourism development. In the first part of Agenda 21, for tourism economy, strengthens cooperation between the Government and non-government organizations, economy analyzes of traveling important and ascertain that all economy is maintainable.

Considering our country obligation determined by signature Agenda 21, Implementation plan, point 41, like and suggest of Law of Serbia environment protecting (I Basely Assignment, Article 3) maintainable management of natural valuation and environment protecting, are accomplish:

- Conveyance and implementation decisions which assure balance between environments protecting and economy development across integration environment protecting in all sectors politics.
- Planning and maintainable useful natural resources, goods and energy.

Maintainable tourism satisfies necessary of modern tourists and increase possibilities for next generations. World tourist organization affirms that economic, sociality and esthetic necessary need to be satisfy with maintenance cultural integrity and biologic variability.

An advocacy of principle for concept accomplishment maintainable development in context of developed tourism management in Republic of Serbia distinguished at and existing Strategy tourism development of Republic. Referring with that, in Strategy distinguished that concept compatibility, maintainable and limited development in which natural resources dictated possibilities for accomplishes economy and others goals in tourism, but not reverse, present only right way in strategic appropriation. For Serbia that is very important in view of existing natural resources and possibilities for further tourist building. Referring on that, precedent would be acquirement compatibility and maintain validity of space.

"Tourism has responsibility referred on economic, socially, culturally and natural surround. Because of that assignment of society is restitution maintainable tourism and balance accomplishment in which necessity of current tourist would not imperil necessity of next generations" [13]. Concept maintainable tourism come to expression when is in question protected natural legacy. Environment sector of Health Ministry and social politics Federal Republic of Yugoslavia is 2001 years, evidenced 1778 objects of protected natural legacy. Especially importances for tourism have national parks and natural goods under protection of UNESCO. In plans tourism arrangement is need to devote attention and reality shows on relation tourism - environment. Sense about

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<sup>2</sup> Document adopted in 1996 from the World Tourism Organization, World Council and World Council for the travel and tourism, WTTC/WTO/EC (1995), Agenda 21 for the Travel and Tourism Industry – Towards Environmentally Sustainable Development, Oxford.

protection natural goods would give contribution maintainable tourism only if society community participates with that.

Named characteristic of maintainable development, like a new paradigm of global tourism development, and accent importance of strategy planning and determine strategic tourism development goals accent importance their study and maintain in Republic of Serbia tourism development frame. Ultimate goal and practice would to be proportionally and balanced, i.e. maintainable tourism development refers on all actors in that process and whole environment.

#### **4. PRIVATIZATION AND STIMULATED MEASUREMENTS**

Development of maintainable tourism in Serbia will be success only when it become proper aimed and stimulated private sector initiative. In private sector frame, and profit and non-profit organizations - especially non-government organizations - must, in this phase play a role in which are dominant these other, but by time profit organizations need to become dominant in determining process work program. Successful maintainable development requests much closed cooperation between government and its different ministry and other organs. The Government must to cooperate and with private sector in establishment national and regional parameters in this branch (par example: the goals of politic), spread a help to tourism (par example: across tourist boards, spread services) and in their control (par example: by the way of space planning). Private sector, as be accomplishment maintainable goals, must be support by public sector. Generally said, such support would be, mainly, in aspect more contractors' stimulants for conservation, accomplishment existing regulative connected for environment protecting, and make efficiency program waste material management. Concretely, in tourism branch exists necessity to create suitable clime and for domestic and for foreign investment in ecological tourism.

Public sector implemented program, recently, which goes in direction of foundation Fond for spread accomplishment credits for building and revitalization tourist capacities. This is encourage sign, and we hope that this credits would be approved in accord with maintainable principles, in ideal case according to long-term vision made for this industry and with process certification, like as suggested in the projects hereinafter.

According to data of Privatization Agency in tourism and catering branch, by auction sales, privatized 88 enterprises. Behind successful sells enterprises, with categorization of hotels in higher categories, it observed that one number of owner privatized enterprises, it not realized succeed engagement (minimum investments).

For faster tourism development, The Government Republic of Serbia, brings more regulation with which be define determined capital for subvention and crediting in stimulation tourism development, before of all, in range of infrastructure, quality increasing, catering offer and capacity of accommodation.<sup>3</sup>

In Republic of Serbia budget, it ensured substance, which can be use without obligation their returning - non-returning substance, with obligation of their returning - credit substance, which to be realized over Development Fond of Republic of Serbia, with interest rate 1% on year's level, and like a Republic of Serbia substances determined in together realization of project.

##### **4.1. Credit Supports to Small and Middle Enterprises in Tourism**

The Government regulation about determining criteria and closer use conditions of micro credits for stimulation catering offer of small and middle tourism enterprises<sup>4</sup>, is regulate conditions spending budget's credit substance for accomplishing catering offer quality.

The right on credit reliance has small and middle enterprise which is registered and accomplishes appointment minimum conditions to carry on catering activity, which, in previous two years legally penalize for infraction or economy excess in to carry on catering activity and which acquit taxes and other engagement in the last year.

Criteria for project accounting:

- Project compatibility with strategy Republic of Serbia tourism development;
- Standard and quality accomplishment tourism offer;
- Project economy adequacy;
- Financial resources and credit possibility submitter request;
- Level of self-participation;
- Architecture compatibility and size of object with ambient totality and existing planned documentation

Priority in use substance has project with which provide: reformation accommodation offer, promotion of domestic tourist currency marketing, building necessary tourist infrastructure.

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<sup>3</sup> Texts listed regulations and instructions for preparation and submission of requests for the use of non returnable, as well as credit funds, is located on the Web site of the Ministry of Economy and Regional Development: <http://www.merr.sr.gov.yu>

<sup>4</sup> Službeni glasnik RS br. 62/07

It was finance 50% maximally of project validity but minimum credit account is 4.000.000 dinars. Term of repayment is 60 months after postpone period, which is 12 months and flow from the first day from lug credit appliance. Interest rate is 1% on year's level, with currency clausal.<sup>5</sup> Cover instruments is own self solo bank draft and mortgage immobility-building object i.e. building private property in relation 1:1 of total credit validity or own self bank draft with avail<sup>6</sup> or bank guarantee or business bank guarantee.

The requests endure Tourism Ministry and accomplishment of conditions and criteria for appropriation instrumentality regulated by Regulation; observe especially commission which Minister form. Credit instrumentality realized over Fond of development at Republic of Serbia.

## **5. SUPPORT DECLARATION MAINTAINABLE TOURISM DEVELOPMENT**

### **5.1. SUPPORT MAINTAINABLE DEVELOPMENT AND TOURISM MANAGEMENT [16]**

- 1.1. Maintainable tourism development is leader concept about our business secure management
- 1.2. Maintainable development define like development which satisfy necessity current generations without imperil abilities of next generations to satisfy own necessity. We support development, management and marketing in tourism on maintainable way, what means, all tourism aspect which positively accomplish natural and cultural environment, which makes profit for communities which receive tourists and what no risk future life of local citizenship.
- 1.3. Like travelling organizer, we believe that we can contribute meaning maintainable tourism developed. We'll aspired prescience and prevention economic, ecological, social and cultural degradation. We'll work on integration these agitations in our management and activities.
- 1.4. We ate going in partnership with Program for United Nations Environment Program – UNEP, World Tourism Organization – WTO and United Nations Educational, Scientific and Cultural Organization – UNESCO, that to be accomplishment our labor output in the goal progress of maintainable development and tourism management.

### **5.2. PRINCIPLE OF MAINTAINABLE TOURISM DEVELOPMENT AND MANAGEMENT**

- 2.1. We recognize that tourism can contribute to revival of local economy. Also, we recognize that tourism can have negative influence on economy, environment, nature, social structures and local cultures. Because of local community long-term interest, and ourselves economy branch, we'll insist to obstruct or more decrease these influences.
- 2.2. We dedicate to respect local, national and international Laws and rules whose can be appliance on our business activities.
- 2.3. We resist and do active against illegal, injurious or exploited tourism forms.
- 2.4. We dedicate constant insisting tends that labor outputs in context maintainable tourism development and management.
- 2.5. We'll manage and observe ecologic, cultural and social influences of our activities.
- 2.6. We'll tend to implementation the best process in whole our activities - as internal, so and when makes business relations with partners, suppliers or sub-agents - especially on:
  - Responsible natural resources use (par example, property, ground, energy, water),
  - Decrease, minimization and contamination resists and waste materials (par example, hard and liquid waste, exhaust gases in air), vegetation and animal's preservation, eco-system and protected area (biodiversity)
  - Preservation of environment, cultural and natural legacy
  - Integrity respecting of local cultures and resist negative effects on social structure engaging and cooperation with local communities and citizen, local products and knowledge use,
- 2.7. We'll support our partners, suppliers and sub-agents in increase their contribution to maintainable tourism development and management, we'll cooperate with them and give information that we would to help,
- 2.8. We'll tend bigger cooperation in tourism economy frame, like and between this economy branch and public sector, in the goal of accomplishment maintainable tourism,

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<sup>5</sup> Currency clause means establishing debt in the euro on the day of release in the course credit and debt Calculating the average exchange rate of NBS on the day of maturity

<sup>6</sup> Aval (nem. Aval) je naziv koji se u meničnom pravu koristi kao sinonim za neprikriveno menično jamstvo, tj. jamstvo kojim menični jamac (avalist) jamči za ispunjenje menične obaveze nekoga od meničnih dužnika. U pogledu posebnih svojstava prospektivnog avaliste, vrede opšta pravila o menično-pravnoj sposobnosti, a avalist podjednako može biti i neki od potpisnika menice i treća osoba.

- 2.9. We'll support and tend to cooperation with national and local governments, local community or any other interested side, which we would develop and apply integrated planning and destination management in the goal of preservation quality and maintainable these destinations.
- 2.10. We'll convert these principles in business politic. Like its part, we'll define measured goals, make observe and public inform about our progress.

### **5.3. PUBLIC OPINION AND INFORM**

- 3.1. We want to make sense and active include our customer in natural, socially and cultural environment of place which visits. Also, we want to support local community and our customer to develop one for other, bigger understanding and reciprocally respect.
- 3.2. We'll insist that in our public appeal and advertising, we promote behavior and activities adjusted with principles maintainable tourism development and management.
- 3.3. We'll encourage the other traveling organizations that support this statement.

## **6. MAIN GOALS STRATEGIC APPROACH ON MAINTAINABLE DEVELOPMENT TOURISM IN SERBIA**

"Europe, momentary presents the leader in rural tourism range with 98% from total tourist offers in this sphere. Considering geo-strategic position of Vojvodina, like and its Central European tradition, this is region which would be, before others, need to position standards of tourism development offer in sphere rural, eco, cultural and traditionally tourism. With tourism development industry, behind strategic positioning of region, on the European tourisms destinations, would be decrease difference in quality of life in cities and in village and rate of unemployment, and increase concurrency of economy and provide revitalization and long term protection and preservation natural resources in tourism function" [17].

Economy development of Serbia strategy, Ministry of Science, Republic of Serbia technology and development induces: "Modern tourism development, before all, based on originally quality environment and resources. From that reasons, especially because providing self and long term maintainable development base, tourism economy must have like a priority assignment protection, accomplishment and rationally use environment and resources."

The goals and interest of Serbia tourism development are next:

- Instigate economy growth, employment and citizen life quality by the way foreign tourism development,
- Providing development own self international positive image
- Provide long-term protection and integrated management natural and cultural resources, what is interest of maintainable tourism development.
- Provide international standards quality of protection tourist customers according to modern European practice.

It is intent to coming to accomplishment in tourism with clear potential benefit for poor people (better employ conditions, better management in protected area, tourism development in national parks, staff education "green" industry), which is, in the same time, decreases negative effects on environment, what can be very advantage for poor people, because they the most often tolerate environment degradation. Especially is sensitive crowds of women and poor household because they are more depend from natural resources whose, because tourism can disappear or sustain damage.

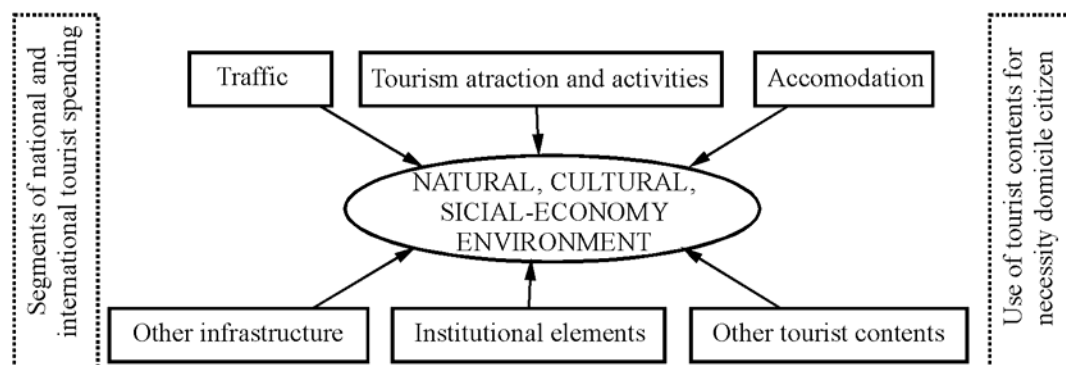
Main goal strategic approach tourism development and formulation tourism development politic in Serbia, can be suppose integration of economic, politic, environmentally and cultural benefit from tourist development, united with people and destination, in the goal accomplished life quality and provide prosperity base. In that context, there are three fundamental basis of strategic approaching tourist development: adequate management tourist development, equability development between tourism and other economy action and increase tourism across diversification, specialization and accomplishment of connection between all carrier tourism developments. The State is important in domain of infrastructure, finance, communications etc.

"Activity enterprise marketing tourism branch will not accomplish self goal while tourism of Serbia accomplish international concurrency validity and adequate maintainable level" [18].

Concept maintainable development can become basis appropriate tourism development in one country if its principle be included in strategic planning process of tourism development and if would be show in strategic development goals.

Identification basically goals of tourism development is main question in strategic tourism planning frame on macro level. Its importance is especially necessity assignment for relation adjustments between all activities which participate in satisfy tourism necessity. Heterogenic of these activities makes necessary existence institutionalized frame which defined State and its organs.

Basically, i.e. priority goals of tourism development, in strategic planning frame must be integral, and with that can be very numerous, various and often conflict. According to research in frame OECD countries, mostly countries suppose basically strategic goals tourism development, stimulation economic development, increase foreign exchange flow and employment increase. With this, basically goals instigate and next goals: making better image of country, nature protection, cultural-historical patrimony protection, accomplishment life quality, customers protecting and stimulation economy development in not enough development area.



**Fig. 1:** Tourist planning integral approach

"In meaning of that whole process, it is necessity to pay attention and on often headlight between "old" and "new" tourism. Mass or old tourism based on standardized and hard "packed" travel created based on principles "product line". New tourism is flexible, independent, quality sensible, heaviest with refer on satisfy of necessity, "green" [19].

Strategic goals tourism development can be explain in economical, sociality and environmental terms, so like marketing goals. Accepting of understanding about necessity for determining strategic goals tourism development, which is widely than economical, eludes greater influence State and its organs. Defined strategic goals tourism development is liable to changes. Direction and volume of these changes depends, before all, from phase in social-economic development of country, relations between State and enterprises in tourism range, changes in surrounding and tourism economy development frame.

Relation between individual tourist politic carriers, on different level, especially is significant for formulating and accomplishment tourism development goals. Competitions delivering question between individual actors in development management it is important because it is normal existing more decision centers that is often are in conflict, but it is in possibility to activity on conditions of accomplishment setting goals.

The roles of national and par-national organs in tourism development especially depend from socially economic development level, like and tourism importance for whole development, i.e. from manner state organs according that question. It is suppose that lower whole socially economic development level, like and bigger importance tourism development for concrete country requests and greater state participation in tourism development management. Especially it is necessary to accentuate that tourism development on the country level as integer need to give common frame for tourism development, if goals on region level and local community must be in function accomplishment specific development programs.

Specific planning section, which was disregard long time ago about tourism development, is refers on room planning. This kind of planning, which is especially use in countries with indicative planning, repose, from one side, on adequate constitution of space with environment protection, and by other side , on projection volume and structure tourist demand. In essence, it is inclining integral tourism observing, according possibilities and characteristics of area.

Changed social clime, inclining for transparency, legislation and its appliance, and other forms adjustment to European Union countries, presents starting point for true implementation principles maintainable development in tourism development process in our country. End goal would be harmonic and balanced, i.e. maintainable tourism development which would be supported from all actors in that process and whole surrounding.

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## **MAINTAINABLE PROMOTING TOURISM IN SERBIA**

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***Summary:** In the world, its evident increase of tourism market, which offer is turn at destinations and maintain outdoors. Maintainable tourism includes activities which have ordinary negative influences on environment. It is necessary suitable infrastructure, which supports maintainable tourism. Also, it is necessary and efficiency and adequate planning tourist places management, in function of less negative influence of tourist activities on environment. Especially accent it is necessary put on "friendly ecologic development" technologies. In the new age, that would be acquire effective tourist destination or project, it is necessary environmentally consciousness and correct implementation new ecological and other standards of maintainable development - with which tourism promoters make typical alternative of "mainstream" tourism. For realization of these projects is necessity concrete implementation of new tourism standards and people nurture on all level/.*

**Key words:** tourist destination, standards, maintainability, promotes management

### **1. INTRODUCTION**

With increase of free time, earn and fashion trends, 180 millions of European went on vacation every year. Adventure's spirit is more notice by modern tourists, like and bigger requirement for summers which full of activities in outdoors, cultural and recreations contents. It was notice that most of tourists avoid destinations with disorganize of environment. Evidently is, that tourist are moving at East Mediterranean and Central and Eastern Europe.

Hence, and behind great volume of international tourist moving, it presents only a less part of total tourist moving in the world. According to relevant valuation, domestic tourist's market makes in many countries and 70% of total tourism market. Everyone is consciousness of necessity that is in this modern, fast life, even a moment "turn off" and turn at environment. Based on modern man deficiency of time, price, languages, international tourists travelling, can to be more complicate, especially if Serbia is in focus, and in principle they happened once time in the year. For the weekend and free days of holiday, simpler goes on many numbers of the nearest, but not and less attractive destination.

So, that promoter besides activities on international plan must to cooperate with tourism organizations of cities and communities and the other tourist subjects and work on promotion tourism's offer and making positively citizen attitude toward tourism of Serbia (and benefits which derivate from it) and its turn to domestic tourism centers, with what would be make bases for direction and instigation tourism development like a part of socially-economy development in Republic of Serbia.

Between different initiatives of individual economy branches, tourism sector is one of the best options foe redefine promoters' investment and action in maintainable ecology projects. Ministry of tourism, together with national parks, and non-government organizations, notice necessity and significance of strategic frame development , which will identify real potential and give directions for development of maintainable tourism.

Promoters have a chance that with own initiative in standards maintainable implementation in next period, with direct or indirect jobs in tourism utilize advantages maintainable tourism development which proffer natural, cultural, historical and the other Serbia potentials.

Based on activity of market forces, it develops action plan, the approach to that high rank segment of market and how positioned it, which package can be offer and how to advertise all of that what that destination has to offer on the world market.



Tourism is, behind commerce and market, one of the most important tertian activities, if we know that in it turned lot of the money. In the previous several decennia, in it participate bigger number of men and accomplish bigger monetary earns. "Tourism is area which always brings to us, significant finance capitals. That is our export when we have a visit of foreign guests. Too much bigger benefit for economy and society is when that foreign guest consumed ours agriculture products, than that we exported same products. Here come multi-corporative effects, and the most better taught this problematic, American author, H. G. Clement" [1]. Promoting of maintainable tourism, also, must to take care about marketing strategy, organization of job, expenses, concurrency and cooperation. "The important job of marketing strategy is to see empty space or deficiencies on the market and then determines which differentiations would be customer accomplish" [2].

## **2. TOURISM IN SERBIA - PROMOTING STATUS AND CHANCES**

Besides of many tourism potentials, Serbian tourism products are not develop adequate, and they are not differentiation and valorized adequate, and so that commercialized on the world market. From now present 87.000 accommodations capacity in outdated objects, Republic of Serbia not accomplishes business results even approximately like concurrency firms. Because of close market, re-structured and privatization process retard, it was not significant investment from the country and foreign countries, so that not come to develop a new forms tourism offer. Because of high centralization, investment in the infrastructural maintains succeed tourism destinations default, because local communities could not to answer on their requests of maintain and, especially a new development by finance.

By inspection and visits to various locations in the country, it is evidence that exist many places on which would begin promoting activity. There are excellent caves, rivers, lakes and mountains. It is the fact that Serbia has small experience in determine tourism class (cultural tourism, ecology/conservation tourism (directed on preservation of natural goods), exclusively tourism, and other) makes beginning of that activities, very risk. Because of that it is necessary business model which will show that these tourism forms accomplishment starters of promoting, economy and society development like and preservation of rural areas. In realization of this challenge assignment, it is necessary between Ministry of tourism and promoters, investors, like good donators, international community and non-government organizations representative activities coordination that would be accomplish implementation of concrete business model.

Strategies, which will be accomplish in Serbia, in the range of maintainable tourism development, eludes concrete goals definition, as progress in their realization can be measure. The problem is in the fact that progress is often very slow at us. Generally, for economy like our, in the same beginning, knowing geopolitical position of Serbia, must to define that goals like a challenge and possible supposition for activities by the promoter side and side of local citizens.

"Without more management's accomplishment in Serbian tourism, have not internal development" [1]. It is possible, and it is "obligate", management and investments action attempts with biodiversity protection accomplishment maintainable in tourism of Serbia and potential realized and becomes respectable model of maintainable tourism In Europe. It would necessity detailed research strategy development area and quality services in tourism, management strategy in development quality services function, i.e. to make a plan and strategy of determined tourism destination strategy.

Serbia has potential to become one of leader destination in Europe, in alternatively tourism area, with great accomplish valuation. On its territory, there are significant parts from rest, untouched wild region of Europe, at near of big cities on the old continent. It has the Organic law which, practically, requests maintainable tourism like development model, like and coalition of public and private sectors, which is ready to support that law mandate. That, what is missing, is elaboration of necessity steps, whose is necessary attempts that potential would be utilize for development of maintainable/alternative tourism. It Accepted Strategy tourism development in Republic of Serbia [3]. hence, if would be accomplish maintainable tourism development model, it is necessary respect given development direction.

"Service quality, for user, is not known before" [4]. In modern tourism promoting, it is necessary modern approach in tourism destination development, with watching of all specificities in tourism economy. Tourism organization is professional business system of services accomplishment - even it is in form of village household with accommodations capacity for two persons. Professionalism is necessary that accomplish good business on long term and make good self-image (which is and base of successful tourism). It is important tourisms' elements which are a chance for successful tourism organizations development, of determined region, with especially regards on local development conception, concurrency advantage that region, development strategy and actions of accomplishment of developed process. The region adequate analyze must be deep with completing of elements and potentials of area in which it wish to invest and on which it wishes to promote quality tourist destination. It is necessary and accomplish modern, maintainable course for accomplishment tourism development organization and destination.

There are a few areas of main significance for state's strategy of maintain development [5] and promoting potential, maintainable tourism, energy efficiency, rechargeable energy origin, recycled and maintain arboriculture.

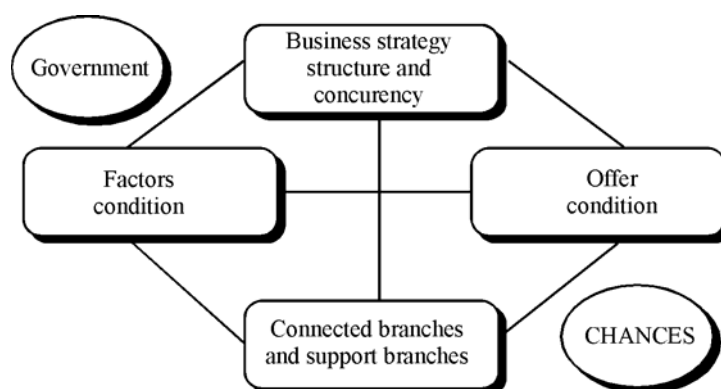
With civilized development and urbanism, it came to environment imperil what is affecting in last twenty years to connecting agriculture, ecology and tourism. The man, according to its nature, inclines to balance, so that they from the village tend to cities and they from the cities tend to village and nature. Just in that fact, there are potentials and possibilities for promoting ones in tourism, in making quality convergent between tourism, ecology and agriculture, at various good thinking contents and more quality services.

Mainly is interest presenting for maintainable tourism, like as developing promote and nationally model, toward concrete results and integration poorly citizen groups across incite of development based on broad base (broad based development). Those results here specified in the frame of action, as follows projects which assemble next four domains:

1. - Consolidation and vision recruitment about maintain tourism development;
2. - Forming private promoting in project/initiatives realization which show economy, socially and ecology effects of maintainable tourism, enable broad connection with local suppliers and contribute active that more greater number of citizen and all groups be engaged in the developing processes;
3. - System accepting on which will be measure enterprise business from aspect their influence on main maintainable indicators, by program certification of maintainable tourism appliance;
4. - Consciousness rising and education of local citizen and promoter as that they would be able to chances utilize which are offer in maintainable tourism.

Tourism has higher power, than only average economy activity. Tourism, strategic generally watched, initiate resource that one country be presented. Along with self-respect showed toward maintainable development and practically benefits from educating level. Healthy indicators and citizen life, and other dimensions of economy development - primarily direct foreign investment, like the most important dimension - becomes much reachable. Foreign and tourists require not only the cheapest offers, already require the biggest valuation and discipline indicators: maintainable tourism is very powerful for that kind of indicate. In that case, geographical ambit accentuates the most important advantages of Serbia. In Serbia there are chances to form attractive tourism destinations and on international level at condition that national strategy of maintainable development and tourism is efficient and rigidly in implementation ecology legality and standards that would be Serbia won epithet and image of ecology country. Still, it is necessary to accomplish tourist-cultural animation of rural areas and that agriculture (which is basically suppose of village) subsist like economy activity in rural ambient. It must utilize potentials, directions and programs of development of rural regions in the achieve goal of integration village economy development.

In promoting action of maintainable tourism, can be utilized concurrency diamond model, i.e. assemblage of dynamic elements (Fig 1). Promoter and manager must to create ecology brand, which would be driving force in local, regional or state economy.



**Fig. 1: Concurrency Diamond**

"Services can to define like economy activity which produces the time, place, form or psychology benefit" [6]. Or it defines all of that in the same time. Mainly domestic and foreign tourism promotion and improve, for promoters, in the goal affirming their tourism validity and possibility. Positioning own tourism product on Serbia's and world's map and valorization comparative advantage like as geo-strategic position, historical, cultural and natural identity. To administer tourism - information-propaganda activities, including significance of tourism area and products in European tourism guide and recuperate cooperation in tourism development branches, be present on all bigger tourism fairs, cooperate with national tourism organizations and other

international, regional, and structural tourism associations, what would be contribute to engagement determined destination in the other world's tourism flows. Promoting possibilities for tourism in Serbia are based on:

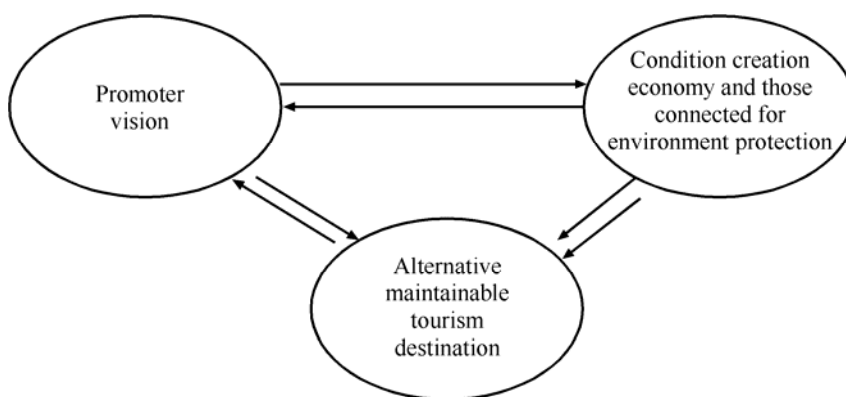
- 1) Global slew in tourism which eludes faster entrance on tourism map higher number of less (news) destinations, because owing to confirmed manner those tourists as more ask and accept new experiences and destination. That is especially approving in conditions when such destination offers new experiences on one professional way;
- 2) The tourism product potential - from 11 products based on experiences, Republic of Serbia has chances in all, except in "sun and sea tourism", which participation, in the last 30 years, is, in global tourism, and decrease for more than 50%. Thereat, it is especially; accentuate Republic of Serbia possibilities, in products connected with nature and eco-tourism, health, special interests activities, rural and cultural tourism, river's cruising, like as business tourism and MICE<sup>1</sup> utilize;
- 3) With changes in tourism profile - all main trends in change range of tourist profile in the future also went toward Republic of Serbia. Especially is the word about trends to educated visitors in search for authentic experiences, like and active tourists interesting for culture and natural resources of destination where thy travel. In that direction goes and functional trends, like as more journey during year and express feeling for money and strain;
- 4) Generally market growth - traditionally emitted countries have increase trend further, along with interest variability according to present socio-cultural changes in that countries. From the other side, it accelerates opening of new markets whose are choosier.

European integrations, goes on hand an easier approach to globalize market for each receptive countries. If it understands that today, including Russia and Balkan countries, Europe has near 700 millions inhabitants (without earlier countries of USSR) whose accomplish 400 millions of journeys, i.e. between 1.6 and 2 billion spends the night, Republic of Serbia can, along with necessary professional effort, quickly and successful penetrate on this great market. It is the question only, clear appropriate and efficiency of promoters and investors in tourism to utilize events, like and professional appropriation on which market products to pay attention.

### 3. CREATION OF MAINTAINABLE TOURISM PRODUCT

From this context of maintainable economy reforms, main goal of promoting action in tourism range must be creation of maintainable tourism product and define vision for realization of this goal. During maintain long-term tourism goals based on destination validity, already determined must be one from main valuation. Yet, it exist lot of trials to impart that mainstream tourism succeed initiative in promoting development process. This is happen, mainly, because the way tourism represents take model of mainstream tourism as definitely. Concurrency often equalizes with mainstream tourism measures, where concurrency in tourism measures with level of coming, participation on market and/or total profit, and forget social and ecology tourism influences and do not take validity of various options in determined destination development.

Making capacity for maintainable activity (Fig 2) eludes identification of some local tourism products of world class (experiences defined like tourism engagement, completed perceptible goods and services) which would be characteristic/difference in the individual regions and increase capacities of local promoters to adequate utilize these resources/products/attractions and edification cohesion between those promoters and their colleagues from public sectors.



**Fig. 2:** Capacity creation for maintainable activity

<sup>1</sup> M.I.C.E. (Meetings, Incentives, Conventions and Exhibitions), Tourism related to special interest meetings, conferences, conventions, exhibitions.

Republic of Serbia today has only comparative advantages in tourism (has various structure of tourism offer, placed in nearness traditionally and new tourist markets, has long history and common recognize, preserved natural resources, proportionally good communications and it has big human potential). Transformation process of corporately to concurrency advantages in tourism is a part of total promoting actions and processes, as and political attitude toward tourism like important maker of nationality prosperity.

"Service activities have great expansion in economy developed countries. This phenomenon called in literature post-industrial society or service economy" [7]. Tourists observe tourism not only like origin of the recreation, already extend of their lives and believe. This explained destination interesting where they guaranteed and prove that public and private sector succeed marketing engagement with society sector in the conditions environment keeping, until expectation connected for recreation, accomplished. If, in the praxis, be proved acceptance of maintainable development model, by the side public and private sector in Serbia, market which is interested to visit countries, will be more exclusively. If it observes changes in expectation tourists, it can be watch that they ask active, more interactive tourism, with greater respect society-cultural and ecology interests of local communities, with greater services standard, and with abilities to protect itself and regenerate environment and something learns about local manner. Managers, promoters and other potential investors in tourism, need to, with great attention long-term visions and conscience, choose companies or projects in tourism branches in which they invest own capital and search for these which actuate according to society and economy interests of maintainable tourism.

Republic of Serbia is on historical crossing, where accommodation happened intensively to European integration and where is approve intensive increase institution concurrency capacity, enterprises and individuals. Republic of Serbia is on the road to defines development goals and economy sectors with chances to success, unaided and with support international community, must as soon as to build and realize concurrency strategy of growth. Tourism intrudes itself like direct complex with non-utilized increase potential. Serbian tourism potentials not enough valorized hitherto, because tourism was not ever serious theme of development politics of Republic of Serbia. From the other side, many countries in few last years, with similar or even and weaker potential, are made endeavor which are bring to the map of meaning worlds' tourism countries. Examples Republic of Hungary, Czech Republic, Republic of Bulgaria, Republic of Romania and Republic of Poland affirm that.

#### 4. DEVELOPMENT OF MAINTAINABLE TOURISM DESTINATION IN SERBIA

"Tourism service is adequate combination material and non-material elements, which pleasing tourist necessity" [7]. Each promoter must ask itself: Is, like a destination, it wants be a peace of increasing tourism offer or is it wants to extract from classical offer and difference itself on the market? The investment which is necessary for connecting to classical tourism flow in the world, in combination with existing country rating in the sense of existing simulative investment criterion, opens and additional questions, make that purposeful strategy and creation institutional frame for alternative tourism forms support, where maintainability is the most important criteria, much rationality decision, which spare time and money. Hence, it mist exist determined manner of public and private sector attached for ecology and society responsibility, as elemental validity of these economy branch. Institutionally starting point for development of ecological, eco-tourism<sup>2</sup> or some other alternative forms of maintainable tourism in Serbia, promises less, because in that form of tourism is not given adequate priority, in the praxis. At our country are often elections, government consolidation and other political happens more important than how is it our tourism and environment where we lived. Hence, already in Serbia, for promoters at moving new tourism destination, which would find its place on tourism market, there are good possibilities for quality tourism destination development from several reasons:

- It avoids bad experiences and chooses good ones in the world tourism,
- It can to create tourism products and its product approximate to the market in accordance with the newest trends,
- It can to fast action with respect to good project and succeeded infrastructure and tourism organization,
- It can utilize critical mass of knowledge and internal capacity, which it has, for fast entrance in the international tourism concurrency.

Project, which would be paying, profitable but maintainable, are exclusively: eco-bungalows on Danube and Danube's small river islands and other rivers, granges with following contents, forest eco-cottages. That would be projects of environment preservation, which show and profitable and ecologic maintainable, as alternative of "mainstream" tourism. Except of "standards" tourism services, it can be service and for some other assignment:

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<sup>2</sup> The term eco-tourism is formulated Hector Ceballos-Lascurén, Mexican architect, ecologist, international consultant for eco-tourism and the general manager of the Program for International consulting in eco-tourism (PICE- Program of International Consultancy on Ecotourism) based in Mexico City

congress centers, art colony, ecological expeditions and others. For realization these projects, it necessity personal education on all levels, and good marketing and promoting strategies.

#### **4.1. Define tourism product of destination**

In the last years, global tourism development, characterize searching for more interactive tourism, with high level of responsibility in tourism destinations social-cultural and ecologic aspects. This trend begun in the middle of 80th years, with adventure tourism, and widely area eco-tourism having now year's increase rate, which evaluate on approximately 20%, by The International Eco-tourism Society [11].

Tourism product defines:

- City recreation,
- Touring,
- Business tourism,
- Healthy tourism (Spa/wellness)
- Mountain and Lake Holidays,
- Nautical,
- Events,
- Eco-tourism,
- Behalf especially

#### **4.2. Brand Destination development**

The new promoting services of accommodations and the other contents, can to move in the direction of entertainment travelers whose want to run away from stress, noisy, artificial and homogeneous environment. It is necessary to brands own destination and tourism product. Travelers would come to relax in "domestic freedom" (Vojvodina), "deep wildness" (forest area of Serbia), refresh themselves in the mountain, rivers and rural environment, like and to feel authentic culture, with natural food accomplish which local population lifetimes prepare on the same way. During return to home, they would be transforming through such experience - more dedicate active natural and cultural goods preservation, and each recreation, which would be plan, will estimate in refer on excellent experience, which they had at us. Those slogans "domestic freedom" for Vojvodina and "deep wildness" for forest area in Serbia, be forever association for the time spent here.

"Environmental responsible journey and visit on relative untouched nature areas, that would enjoy in nature and that would respect itself (like and all followed cultural objects from the past and from the present), promotes preservation, has low influence of visitors and enables useful social-economy engagement of local population" [12].

News maintains tourism promoters would be offer the nature of their destination in the form of entertainment, relax, healthy and inspiration experiences to the whole world people. That would be individuals, families, pairs and fewer groups of friends, which would obtain respect towards to that destination. Promoters, tourism employers and local population, must to maintain experience to these travelers, which create powerful, positive memories and associations. Inviting these travelers to visit our offer, promoters, and managers of public sectors and whole society are in obligation to preserve natural and cultural goods, whose they did not succeed from the predecessors already borrowed from descendants, as they not failed (non-decreased validity) transfer to the next generations. In that case, if would be developed positively brand, it sub serves like maintainable model in whole world.

Population in Serbia must proudly to present its natural richness and dispose with something of invaluable validity, and that, without endanger, that participate with other one. They must to know that travelers whose will be entertained estimate their relation. Promoters need to obligate that directed economy advantage from tourism and on nature preservation and advantage for local community, and in that process ensures and self-promoters' advantage. Promoters successful in that case equalize with adequate management with natural and cultural goods, which complete natural beauty. Successful preserved, these beauty will sub serve as indicator that Serbia is respected ecological appropriation in frame of the low, that become something on what country will be proud.

Key words for define destination brand:

- Serbian culture,
- Man disposed to entertain,
- Serbian art and literature,
- Hospitality of people with open heart
- Passion and proud
- Conjunction of traditionally and modern
- Other

### 4.3. Valuation which tourism destination needs to present

"Provisional visitor, i.e. tourist like requisition bearer is in the focus marketing orientation of all activities which constitute tourism economy. Marketing conception directs tourism offer on adequate compensation of identified tourists necessary through profit accomplishment" [13]. Tourism products not only natural attraction packages, today, already combination of natural, socially and cultural elements. This is more obvious in the ecotourism segments, cultural tourism, natural and historical tourism and adventure tourism, where attraction valuation depend not only physical characteristic of attraction, already and socially and cultural characteristic and conditions of its location. These segments not exist in Serbia tourism structure, and it would be.

Promoting vision need to create and present tourism destination to the world, like it, which:

- Readily accept guests from all over the world, whereby establish intimacy, understanding, tolerance, i.e. personal and professionally respect,
- Through tourism it expresses own proud, identity, i.e. all own cultural-historical valuation and characteristic,
- Appreciate and it was maximally dedicating to preservation and protecting all itself natural and cultural treasures,
- International market accept it like certain, interest, authentic and overall clean tourism destination with recognized identity,
- In tourism calculates with various products, accomplished from reach, equally situated resources base and attraction structure, with goal that in tourism be employ itself during all year,
- It is important factor of politic integration, economy development and long-term economy prosperity, and population, intellectual and political elite is acceptable like that,
- That is consciousness of prosperity across tourism is not possible to accomplish without quality infrastructure, knowledge, education and new technologies, i.e. their transfer to all actors in tourism,
- With active and innovative tourism politics of integral and maintainable development, significant increase market and profit in tourism and become serious actor in the world tourism offer.

"Tourism services are always bond for determined tourism area with all its characteristics significant to attract and reserve tourists, domestic and foreign" [7]. It is necessary that promoters in Serbia creates destinations in which tourists will be to feel authentic hospitality in the combination with fantastic good preserved ecological attraction, what will maintain unforgettable experiences of journey, accomplish with validity spiritual experiences which enrich and spiritual relaxing. It make possible that tourists enjoy in nature, in security, in peace, in services, to communicate with kindly and educated tourism employers, even and local population. Because the profit is end measure accomplishment goals, the question of differentiation is strongly strategic question. Tourist offer must clear be difference on the market and take position of mainly natural destination on the world - various, innovative, that poorly opens own new characteristics and respect natural environment. Much interesting groups would have chance to enjoy in our country, our home, and all of that with respect and understanding of nature.

### 4.4. Investment in tourism destination

"Tourism product is, practically, total product because that is the combination of services and materialized products with inherent functional and feeling attributes" [14].

The factors, which must be to allowing for when it invests in some tourism unit, are:

- Attractive destination factors can be natural and/or socially. For many countries, like Serbia, conclusive role just natural factors, especially landscapes beautiful, climate etc. In the socially factors belongs cultural-historical monuments (nice cities and historical legacy in them, monastery), cultural-entertain manifesting (various sports, musical and other), cultural institution. Some countries and cities based own tourism mostly on these offer (Monte Carlo, Las Vegas, Cannes, etc.).
- Acceptable, receptive factors engage all services, which proffer on journey destination. The most important acceptable factors are accommodation objects. These are hotels, tourism settlement, and resting-place, camps, etc. With them they are connecting, market, and catering contents. They are very important because in then they are accomplishing big part of tourism requirement.
- Marketing or communication factors refer on marketing connectedness place or state. It is normally because if marketing connectedness is better, it is better for tourism (variability of marketing journey and appliances).

It is important that promoters focus limited resources on alternative markets and market goals groups, which show economy effectively, and the other destination in development, with same time support to society development and ecology protection.

## 5. NEW TOURISM PRINCIPLES

"We are dedicate to development, functioning and marketing of maintainable tourism, that is, each form of tourism which has positively approach to natural and cultural environment, which makes attainments for domestic community, and which not creation risks for the future life of local population" [15]. Attraction preservation or richness of determined destination depends from volume of advantage which factors engaged in tourism have from keeping that richness. Directly advantages, according to concept of maintainable, not would have only factor (par example, tourism promoter in main sense), yet they would be distribute on them who makes services, local community and organizations engaged in preservation of environment, so and whole population. The only way on which can to preserve environment is that all interest factors see true advantage behavior on that way. With respect on results all accomplishes terrain researches, it notices next mainly validity which is the base for ascertain development vision of tourism:

- Accepting tourism like efficiency instruments for engagement in international market concurrency and globalization,
- Reliance factors of positively surprise, that destination in Serbia shows like new one, innovative and different because in European frames presents new tourism destination,
- Directing development of tourism on these contents and initiatives which with less transaction expenses, ensures not only the place on the world tourism map, already make different from other,
- That tourism is winner combination for all: ecology, population - across increase life standard and personal spending, economy subject - across increase level of total prosperity of nation, decrease of high level of unemployment rate, increase budget earnings and decrease outer obliges.

## 6. IMPORTANCE OF DESTINATION MAINTAINABLE TOURISM CERTIFICATION

"Ecotourism must go on to contribution that total tourism economy make maintainable, increasing economy and sociology advantage for community and increase sense of all tourist in preservation natural and cultural entail."<sup>3</sup> Promoter can to utilize program of certificate editing and like instrument where they supplies that whole development of its destination in the future be maintainable, and like instrument ensure visibility of destination, how to determine with obligations and principles. Process of certification must to take care that not is disengaged autochthon, poor producers and destinations. Experiences in range of arboriculture and agriculture show that certification can to bring advantage to poor countries and enterprises which satisfy high standards or which developed management system, following and evidencing which is necessary to qualifications.

Endeavour that ecotourism certificate in their beginning phase. Certification ecotourism economy engages collecting data from companies about its environmental and social indicators, and after that verification of this data. Many of enterprises there are in development countries, where services of observing, even and communication system can be unreachable. Promoter can to utilize program of certificate editing and like instrument where they supplies that whole development of its destination in the future be maintainable, and like instrument ensure visibility of destination, how to determine with obligations and principles. Process of certification must to take care that not is disengaged autochthon, poor producers and destinations. Experiences in range of arboriculture and agriculture show that certification can to bring advantage to poor countries and enterprises which satisfy high standards or which developed management system, following and evidencing which is necessary to qualifications.

Development of maintainable tourism - which has mainly principles of preservation and use of resources, and active participation of community - need to be process which generate and distribute richness as it would efficiency and constructively helps all society. Materialization of maintainable idea is not simply, because it requests radical change of business approach, socially and ecology sectors. To promoters in Serbia will be help accepting appliance of one concrete tourism certificate about maintainable (from several existing world programs certificate editing). So that existing promoters can be focus on accomplishment ecology and other standards in praxis, for which tourists make interests. If interest exist and decision that less pensions, even and private houses in mountain regions adjust for these tourism offers that would use of these standards, defined in one of these program of certificate editing, ensure that to make this on appropriate way.

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<sup>3</sup> One of the items adopted at the World Summit on ecotourism, whose hosts were Tourism Quebec (Tourisme Québec) and the Canadian Tourist Commission (Canadian Tourism Commission), in Quebec City, Canada, 19 to 22 May 2002 year. In the International ecotourism year 2002, proclaimed by the United Nations, under the auspices of United Nations Environment (UNEP) and the World Tourism Organization (WTO), over a thousand participants from 132 countries, from the public, private and non-governmental sector-retrieved from the [HTTP : / / www.cenort.org.yu/](http://www.cenort.org.yu/) English DEKLARACIJA\_IZ\_KVEBEKA\_O\_EKOTU / deklaracija\_iz

## 7. CERTIFICATES OF ECO TOURISM

"Ecotourism is responsible travelling in areas of nature, with which preserve environment and maintain prosperity of local population" [11].

**ECEAT International** [19] is independent and non-profit association, which meets national ECEAT organizations in European countries. Main goal of ECEAT is development and promotion tourism, which support development, named organic agriculture, maintainable use of ground, environment preservation, development of village and protection of cultural patrimony. ECEAT established organization dedicate to development of village, ecotourism, i.e. maintainable tourism from Holland, Germany, Sweden, Czech and Portugal. Key words ECEAT programs are non-formal, small volume, not endanger environment and happen in nice landscapes of nature. Mostly of products happen in areas, which are ideal for walking, bicycle, ride, birds watching, water sports. Except of that, exist painting school, foreign language learning, and musical courses, traditionally manufacture learning. Its four main principles of work: 1. Activity on whole territory of country, 2. Ensure education for agriculture which want to work in tourism, for tourists and public, 3. Appliance of maintainable criteria of quality and, 4. Work for tourists (making propaganda materials, catalogues, dragomans, reservations, especially for village tourism).

**EuroGites** [20]: also have product definitions and quality standards in village accommodation. Federation "Euro Gites" are consist 25 organizations from more countries. President of this federation Klaus Ehrlich presents that "village tourism become favorite choice for the second vacation, and motive is less vacation in nature and more wishes for acquaint other environment, other culture, across life with people.

**NEAP** [21] Traveler organizer or owner of object must to complete big interrogative, which refers on each criteria. Its accreditation now has three levels: tourism based on nature, ecotourism and advanced ecotourism. Like accreditation program based on praxis, NAEP request that products accomplish determined goals which classified in especially categories: focus in nature area, comment, ecology maintainable, protection contribution, work with local communities, cultural component, customer pleasure and responsible marketing. If it accreditation achieve level, product must accomplish all criteria in each of category. Reach advanced ecotourism status accomplish 80% especially criteria.

### **Proposition directives for successful ecotourism certification** [22]

- To indicators of maintainable must arrive by researching determined parameters based on validity best practically examples,
- Maintainable indicators must be account and admit across process where engaged all accessories,
- To indicators of maintainable must arrive in each segments of "industry" (hotels, travel organizers, traffic system),
- Maintainable indicators will be different depend on region and to them would be arrive with participation of local accessories based on researching,
- Certification program requests independent procedure of verification, which are not connecting with body, which paid for certification. Engagement of University is ideal for this process.
- Programs of certification, especially for small sector ecotourism business will not be payable across taxes, and that would be necessity international subventions,
- Certification need to be test on terrain before finished administering that ensure that all systems adjust on right way, because it is difficult verifying determined standards of appliance without testing.

Irrespective how many definitions are in flow, question of maintainable not main elements in implementation mostly tourism destinations. Tourism industry, relative slow answer on changes of consumer taste, like and ensure conditions for international and domestic certificate obtain, like and ensure conditions for "green card". There are accreditation and certification programs which goal is to satisfy consumer requests and ensure maintainable tourism in industry. Most of these programs and certificates are practically unknown from out of local market on which it exists, but some of them become leading programs in credibility. Specify of maintainable development must be clear set of standards for activities measure, which depend on environment.

## 8. ECOLOGY MANAGEMENT

"Ecology management - management of human activities which ecosystems, their structures, functions, assembling and physical, chemistry and biological process modeling and continue on adequate, provisory and space measured way. Sometime is understanding like ecosystem management or ecologies approach to management" [24].

Civilization development arrived very closely to "dead point". Life on the Earth imperils with contamination eco-sphere, global terming process, losing biodiversity, etc. Responsibility for environment protecting obligates us to care about the world where we live (waters, air, and other natural resources).



In many countries it implements principles of ecology management, which is a new scientific discipline whose goal is, that on the basis of scientific knowledge about ecology resources in the biosphere, change existing status of contamination and degradation of environment uses methods ecology engineering and law-economy instruments according to existing laws, and international quality standards like and sustainable development principles. Development without environment contamination is motto, which is built in ecology standard ISO 14001:2004 [25] and has wide application to the whole world.

Organization appliance management system of environment protecting for:

- Minimize influence process on environment,
  - Protecting negative influence on environment,
- Implementation of standards ISO 14001 to organization, ensure:

- Controls of influence on environment
- Accomplishment requests of laws
- Saving resources - energy and materials,
- Better satisfaction of interesting sides,
- Decreasing expenses on long-term.

In Europe and OECD countries there are 70% of total world waste material, it produces 100.000 various chemistry products, what is initiate to define ecology standard ISO 14001:2004. Ecology management becomes non-dissolve part of business of each firm

## **9. MAINTAINABLE TOURISM - OBLIGATION, RESPONSIBILITY AND ADVANTAGE**

There are number of strategies of future development tourism economy, so that is necessary ascertain which strategic concurrency is with which promoter in Serbia can to build quality tourism product in the next period. It is known that world concurrency in tourism not management anymore only with criteria of products and quality of tourism offer. In the time of global communications total approach to information, technology of tourism products development, available to all, so that easy and fast can be copy. Hence, today serious tourism politics, leaded on principles experiences economy, mostly directed on build and keeping long-term strategic potentials. Promoter own concurrency on tourism, on long-term, must to build on the next strategic bases:

- Human potentials,
- Geo-strategic position, central place in traffic flows in Europe
- Natural potentials and preservation of mountains, forests and rural areas, like origins for new products creating and innovations in tourism,
- Reach full archeologically and architecture patrimony,
- Spiritual creation and festival tendency, celebrity and other manifestation and events what ensures presenting our style of life.

Territory of Serbia characteristic, their natural, and on new standards make validity, is very good model for modern concept maintainable tourism. Serbia has traditionally programs spa, mountain and village tourism. Promoter in tourism with various potentials can completely accomplish modern requests according to maintainable development and preservation ecology protecting areas.

Urban population knows validity of nature, from which modern urban style of life is more often separate. Adequate infrastructure, ecology technologies and good organization of tourism business, are mainly determinants for maintainable tourism development. Successful promoting concept of maintainable tourism development requests build system based on ecological criteria and measures for implementation-defined goals of maintain development in projects, which directed to environment preservation.

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82.	Molnar D. (Belgrade - Serbia)	<a href="mailto:molnar.dejan@gmail.com">molnar.dejan@gmail.com</a>	169
83.	Momčilović O. (Belgrade - Serbia)	<a href="mailto:oliomaster@gmail.com">oliomaster@gmail.com</a>	485,497,503, 507,512
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## R

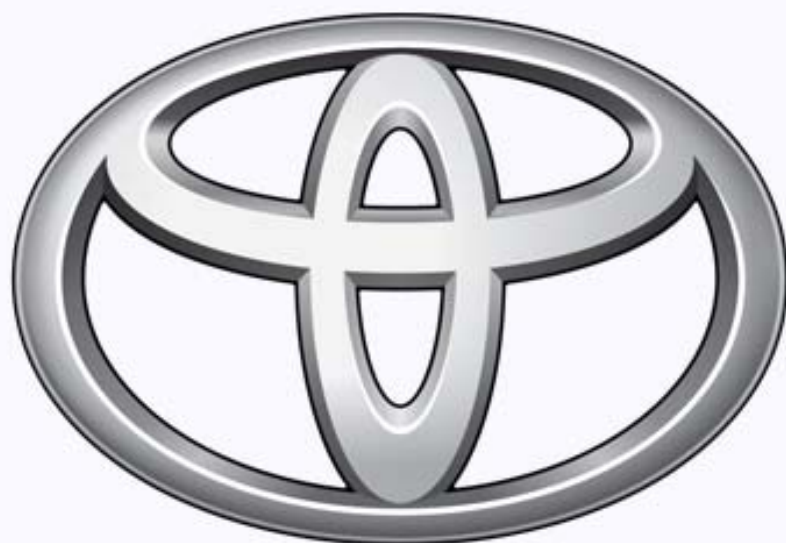
112.	Radenković S. (Peć-Leposavić - Serbia)	<a href="mailto:sonjafon@gmail.com">sonjafon@gmail.com</a>	622
113.	Radojčić D. (Petrovo – Serbia)	<a href="mailto:daniloradojcic@yahoo.com">daniloradojcic@yahoo.com</a>	630
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