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FOREWORD

Dear readers,

In front of you is the fifth issue of International journal of economics and law, published by the Faculty of Business Studies and Law (FPSP), Belgrade. The idea for starting “International journal of economics and law”, is an effort of the Faculty to enable the placement of their scientific works and its critical reviews, theoretical discussions and research to students, colleagues, teachers, other professionals from home and abroad, as well as acquisition and expansion of knowledge in economics, law, management, and so on.

Gratitude for publishing this scientific journal belongs to all of you who participated in the work of our international conferences, ANTiM and LEMiMA, to all of you who have created the basis for further expansion of our cooperation to promote these disciplines with yours scientific contributions. The structure of the papers in this journal comprises three dominant scientific disciplines in the social humanistic field that unify the faculty including economics, law and management, but the sciences that have a dominant influence on the global, national, and corporate performance. Integrating these sciences in one place and with the participation of domestic and foreign experts, conditions for exchange of scientific information and experience are created, and thus the achievement of defined objectives of every reasonable organizing.

We can achieve that only by common effort of all of us.

By starting this scientific journal, we have shown our readiness, responsibility, and resources for stimulating scientific research and publishing work, and along with other to improve legal, economic, and management thought, i.e. theory and practice. The challenge is certainly greater bearing in mind the times we live in, and followed by a high turbulence in the natural order (earthquakes, tsunamis, volcanoes, etc.), and so in the social order as well as internal conflicts that shook certain countries, through the technological boom, and moral problems in different spheres of life and work.

Due to this complexity, which will in future be more complex and uncertain, it is necessary to put science in the foreground, as new production work force. Scientific journals are one of the most efficient sources of acquiring knowledge, especially in terms of their electronization and possibility of rapid scientific information transfer provided in their facilities. Therefore, the idea is that contents of this journal are modern and actual, but also to be available to all who are interested in economics, law, management, entrepreneurship, and so on. International editorial board invites esteemed scholars, admirers of science and scientific thought, i.e. profession to enrich the quality of journal and thus contribute to improving these disciplines, but also business i.e. legal and management practices.

Welcome to “International journal of economics and law”. Good luck!

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Prof. emeritus dr Zivota Radosavljevic
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INSTRUCTIONS FOR AUTHORS
A MAN IN HIGHLY DEVELOPED TECHNOLOGICAL SOCIETY

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Abstract: If we analyze the contemporary literature in the field of personnel department, and human resources management at the global level, we will find more or less the statement that a man is the most valuable potential of organizations that people are the greatest wealth and irreplaceable factor in every organization. At the level of the UN numerous declarations were adopted on human rights, in order to protect and improve their basic rights. On the basis of national legislations numerous laws were adopted about the rights of employees, women, children, minorities, etc. Many associations were formed for the protection of the so-called “vulnerable” groups and communities, in order to preserve His Majesty, man.

However, practice shows a completely different situation and tendencies. The more you talk about the man or about the people more problems arise on that point. It turns out that the status or treatment of the man in the organization at the national, but also at the global level is far below declarative submissions or preferences. This refers especially on companies and organizations with high organic composition of capital that is, where technology prevails. It has never been more wars, inter-ethnic and inter-state conflicts with tragic consequences, millions of refugees and migrants who go from one continent to another in spite of a large number of resolutions at the level of the international community on human rights. If we would test the top management of large companies about their knowledge of human dimension in their organizations, we would come to devastating results, and that is that they are far more familiar with the material factors (instruments of labor, tools, accessories) the time necessary to execute the repair of machines, replacement of some parts, assemblies and subassemblies. In contrast to the above, the human potential is not being talked about, or it is talked about in secondary and irrelevant discussions. All indicates that the technology is being developed, and that man is not equally developed with it, although it is he who has created it.

All stated above imposes the need to point out the place and importance of man in modern, technological, turbulent and uncertain organization. The aim of this paper is to show and prove the growing importance of man in the organization through arguments, especially from the standpoint in the future and in terms of increasing usage of modern information technology.

Keywords: Key words: A man, technology, intelligence.
1. INTRODUCTION

The modern world, ordinary life and work is dominated by new, primarily information technology. The man is simply doomed to use technological achievements, and organizations can not gain a competitive advantage if they do not keep pace with technological advances. Management structures are forced to equip with tools and techniques that can increase their intellectual potential. Of course, this statement applies to the executive structure that is neutral jobs, especially in manufacturing organizations, where workers manage or control highly sophisticated techniques and technology. In these circumstances, technologies gain a primary place, often they are given magical power, and the human factor is neglected and is considered second-rate, although the technology is precisely the result of the human mind and it applies knowledge that is created and upgraded for centuries.

Technology is constantly evolving, thanks to the people, new knowledge and innovation, in order to increase the power of people, organizational systems and the state, but it does not bring into question the status and well-being of people. If we ignore the previous facts, there is an objective possibility that in the future a man will become a robot and he will return to the distant past in which he became a slave for a long time. In other words, if the current trend of favoring technology and man neglecting, there are all conditions that the man in the 21st century a man becomes a man-robot, whose status in the organization and society is worse than the slave in the slavery. Man robot would kill worse than any weapon according to all assessments, because the slave was physically mistreated, even killed, in modern conditions, there is a danger of an intellectual destruction of the human reason and mind. In a broader context, there is a real danger that a man begins to think like a computer, and it works like a robot which is much more dangerous than when the computer starts to think like a man.

Exact studies show that the word robot comes from Serbian area, and it is derived from the word with the meaning work and robotics, which means worker. World famous scientists appeared in our region that worked on the development of robotics, or through their inventions contributed to the development of automation, such as N. Tesla, Einstein, especially Rajko Tomovic, who was characterized as the father of robotics in the world and in our country. The first, or among the first robots of second generation originated in Serbia in Mihailo Pupin institute in Belgrade in 1963 in the shape of a steel hand or fist and was called “Belgrade’s hand.” This robot was later developed and improved using high performance technology, but according to professor Vukobratovic (2006), this country was a leader in the field of robotics. Thanks to that progress, the former SFRY was technologically advanced country, because it was among the first to introduce a car of small capacity, to produce parts for American Boeing, a military industry of that time represented a respectable factor in the world. Today, robotics and computerization in Serbia, is not represented enough and has a negative trend, but that decline leads into the marginalization of a man.

It’s time, or the final moment that the management sees its organizations through the people, because man has created all kinds of technology, the robot can be programmed to give answers, but not to ask unsystematic questions. For the first time in human history the society or the knowledge economy has created conditions for people to be true sources of
revenue, profit and new value creations, instead of being presented in the classical organization and management as a generator of costs. * 1.

2. **A MAN IN TECHNOLOGICAL ENVIRONMENT**

Man, how that sounds proudly. Is this famous saying forgotten, precisely from the people and is there a chance to take it back, revise or upgrade with new qualities. Where ever we can find a man at home, or an apartment, in the vehicle, in his own automobile, in a company, a hospital or school, theater, church, sports centre or recreation ground, he is surrounded by machines and technical means and technologies. High-tech society, in which information technology represents its exponential, is technical but primarily sociological phenomenon of the first order, given that man as a sociological entity has formed technology, and technology affects the man as a conscious and rational being. It changes, but also improves physical and intellectual potential of man. The technology is more or less present in all spheres of life and work.

However, the phenomenon of the technological environment is not only unique for the modern time. The man, from his early beginning has created and used, at first primitive, and later ever more sophisticated technical devices, such as tools, equipment, tools and weapons of various developmental degrees. The level of development, resources and technology was due to the level of knowledge that the man had. That was why the Marxism classics once stated that social and economic formation did not differentiate according to what was produced, but what means of work were used in production that is, what was the level of development of the productive forces. Whenever the productive forces developed and reached its peak, there was a change in production relations that is relationships between people, which created the change of existing relations, generally into better social or productive relations.

The basic purpose of creating tools and weapons was to ensure maximum safety of life, but also a better life, that is to increase the physical, but in modern conditions, the intellectual power of man, and facilitate the execution of both physical and intellectual activities. This existed in the past and it will be in the future. Ideogram of technological development imposed the need and the creation of specific scientific disciplines, and technical and technological sciences, in order to enable people to successfully design, build, manage and use new technologies. In that way we have come from primitive tools and supplies to the so-called digital ubiquity, or digital connection that in modern conditions creates a competitive advantage in most sectors of the national economy. 2

For many people new technologies are considered as a friend and for many as an enemy of a man. Regardless of which group it prefers, it must be understood that man is a creator of new technologies. He firstly thinks what he will do, and then makes the real mental construction of how it will be performed. In this way new tools, resources and equipment are created that generally increase the potential of man, which is not characteristic of other types of self-organization. A Man that is people create tools and technologies that are better, faster and more reliably perform certain operations and activities. In this way it increases

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1 For further information you can read in Z. Radosavljevic: Knowledge Management, FORKUP, Novi Sad, 2006.

the economy and personal, organizational or business performance, and the application or use of new technology is represented as the third way to increase organizational performance. Thus, the idea of using technology is in the distant past of human civilization, the moment when the people began to hang out with each other, it has led from the stone, cudgel, blades to new technologies that have dramatically changed the life and work of man, and organizational systems.

There is no doubt that new technologies reduce the entropy, as a measure of disorder of a system, which is natural, because the reliability as a rule is higher in systems that are based on engineering and technology than the human factor. There are also side effects that occur parallel with all stated above because no technology as well as human, is perfect. However, research shows that the benefits of new technologies are much greater than its negative side effects. It is also certain that in no case we can bring into question the general view that man is primal the one that creates new technologies and provides technical solutions in order to improve, or facilitate the life and work.

Starting item in this paper is that the man is the primary factor for any business, he was that in the past and that paradigm will not be changed in the future. On the contrary, in perspective, a man will get even more importance, but not to those tasks that tools and weapons can carry out, but in giving ideas, as the most valuable resource of any organization.

3. THE INTERDEPENDENCE OF MAN AND TECHNOLOGY

Many psychologists, sociologists, theologians, anthropologists, economists and others have written about the relationship between man and the organization, or man and technology, but this issue is also dealt by the science of management, organization, doctrine of human resources, etc. In science, the organization has already crystallized the point of view that the man is the primary element of any organization and, if a man would not exist in the organization it will be a technical, rather than organizational system. According to all stated above the rules of functioning of the two are different, because one is the relationship towards machines and material resources and completely different is a relationship towards the human resource with many influences and controversy.

The ancient Greek philosophers know about the interdependence as a phenomenon. They saw the interdependence in universe, or in the natural order, saying that in the natural but also the social order, nothing can be self-sufficient, nor can survive as an individual, but that all arises out of something and serves for something. Relations or the interdependence that exists between the parts of the whole are determined by the quality of the continent. This was pointed out by Aristotle when he defined the universe as a whole in which there are no isolated parts and that everything in the cosmos and nature is connected in some way. In the example of the cosmos as a whole, Aristotle found that the whole is always something more than the sum of its parts. It’s something more the relations, interactions and influences that are the interdependence between the parts in general, which Aristotle called spirit or soul of the whole. A more detailed analysis shows that the principle of interdependence is the backbone of management, as well as technology and techniques to guide the joint work towards the achievement of defined objectives.3 The interdependence between man and tech-

3 For further information you can read in Vučenović V. and others: Holistic theories of organization, FORKUP, 2011, Novi Sad, p. 229.
nology is high. If the technology is applied knowledge, then this relationship should be seen as a mother-daughter relationship that is as a relationship of a whole and its part. The mother that is the whole is a man and technology is a result of his thoughts and creative activity. According to the theory of the system, there is no technology without the man, as there are no parts without its whole. Everything is the continent of some parts and at the same time part of a continent. Applied knowledge of the tools, equipment and weapons are used in order to transform the organizational inputs faster and better through transformation processes into outputs meaning products and services. The commercial success of an organization depends on the way to harmonize these three elements.

Based on the above one should bear in mind that technology is not only made of tools, equipment and instruments, but it can also occur in the abstract aspect, such as tables, calculations, formulas. For example it works with items, formulas and static data in building construction or in the production of medicines, detergents, production of alcoholic and non-alcoholic beverages, cosmetics, etc. Techniques and technology are management as well as the specific technology that uses knowledge of many other sciences, entrepreneurship, leadership, etc. Technology set in this way creates a greater potential for the considering objective facts in their functioning. According to all stated above we will often give preference to the man, or technology, which best demonstrates that the relationship between man and technology is not sufficiently trained, especially in conditions of high computerization and digitization, when many functions of the man take modern technology.

There is the question why did not we investigate the reason for neglecting the man in the organization in more serious form? We can partly find the reasons in the following facts:

- Many believe that we are all humans by nature and there is no need to talk about it,
- In theory and in management practice, there is still a lot of presence of classical organization and management, which was dominant in the last century, where material resources were in the forefront,
- IT has taken and it takes many more functions of the man including functions of the nervous system so we should pay to new technologies,
- The number of organizations that are laying off workers and replacing them with techniques and technologies, in order to rationalize the business is increasing,
- The technology is “neutral”, it does not create tension and dissatisfaction, while this is not the case with humans.

In formulating its views on the primacy of human or technological factors different arguments are used which can be seen relatively well from the following:

<table>
<thead>
<tr>
<th>The arguments about the primacy of man</th>
<th>Arguments about the primacy of technology</th>
</tr>
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<tbody>
<tr>
<td>Man creates and changes technology</td>
<td>Technology has taken many functions of the man</td>
</tr>
<tr>
<td>A man creates a new value</td>
<td>Technology has a decisive impact on profit</td>
</tr>
<tr>
<td>Man is the only one that gives ideas</td>
<td>Today there are smart or intelligent machines</td>
</tr>
</tbody>
</table>
Man is the only creature that learns

There are machines that can be programmed

The man is indispensable in the organization

Organizations can function without people

People are the greatest potential of the organization

New technologies are creating a competitive advantage

A more detailed analysis of the previous arguments shows that the relationship between man and technology is not simple nor one-way and that different expert give priority to one or the other factors of the organization. Engineers or computer scientists will give priority to new technologies by all means and tend to transfer numerous brain functions onto techniques, such as to store knowledge in software packages, in order not to disturb the brain. On the other hand, theorists of human resources will give priority to people, as beings who create and produce.

Regardless of the above, all studies show and demonstrate that primacy should be given to a man, as the only reasonable and intelligent being, who creates, changes, modifies and improves existing technologies. So a man designs technical and technological solutions through mental construction and in the next step, again through the thoughtful process of implementing the ideas, the same is transformed into equipment and tools. For example, Ford constructed a continuous conveyor belt, as a technique for improvement of his automobile empire, but he was upgrading technological process constantly, which is a result of human thinking and imagination, that, as it Einstein claims, is more important than knowledge. He condemned the educational institutions that do not participate in developing of imagination and creativity. In other words, technology is subordinated to a man and it has lower level of hierarchy, as it is case between consciousness and subconsciousness where subconsciousness does anything what consciousness wants. The human mind functions in harmony with physical and economic lows and principles. Nobody in the world needs to help you manage your own mind and ask it to function in the manner you want. We control our mind.

However, no matter how intelligent man was, technology manifests a significant influence on him as a feedback. Ford’s continuous conveyor belt controled dynamics of the performance of certain operations, so the worker near it was programmed to operate at speed dictated by the conveyor belt, and he was allowed to leave the position only when it stops. This impact is often neglected and it produces positive and often undesirable results. There is well-known statement of English journalist, Bent Revis, who while visiting automobile factory wrote: “Out of the thousand workers that I observed, I did not notice smile but only blunt expression of the tired face.” However, generally speaking, technologies produce mostly positive effects on man, or organization, which is natural, otherwise, man wouldn’t create it.

It is obvious that technologies, especially information technologies, significantly changed individuals’ life and work and radically influenced the redesign of classical organizations. Although information technologies and their establishment do not represent a strategic change, as it was case with the invention of internal combustion engine or the discover of

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A MAN IN HIGHLY DEVELOPED TECHNOLOGICAL SOCIETY

ery of electricity, yet the information technologies had the gratest impact on man and his change of the way of work and the way of life and behavior. Thanks to this, nowadays every apartment can be policlinic, every house can be university, under condition that there is the Internet and the ability to connect to a lecture at the world’s elite universities and to observe surgery in the most prestigious clinics.

It is clear that technology takes over routine and executive operations and activities while modern technology also includes numerous intelectual activities. This is confirmed by IT experts, who used terms, such as: neural networks, intelligent systems, smart computers, expert systems, etc… Anatomy and physiology of man, including relationship between central and neuro system or peripheral, ie. executive part, are often compared with the relationship between software and hardware. So, the software, or chip, is the brain, while the hardware is the body, which means that the body will do anything ordered by software. However, man's role and importance in modern, as well as, in a future organization is irreplaceable. That can be seen in the next chart; 

<table>
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<th>Work structure</th>
<th>Manuell</th>
<th>Mechanical</th>
<th>Automated</th>
<th>Computerized</th>
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<tr>
<td>Ideas creating</td>
<td>Man</td>
<td>Man</td>
<td>Man</td>
<td>Man</td>
</tr>
<tr>
<td>Planning</td>
<td>Man</td>
<td>Man</td>
<td>Man</td>
<td>Tools</td>
</tr>
<tr>
<td>Control</td>
<td>Man</td>
<td>Tools</td>
<td>Tools</td>
<td>Tools</td>
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<tr>
<td>Implementation</td>
<td>Man</td>
<td>Tools</td>
<td>Tools</td>
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This chart shows that man in manual organization, performed all the functions of the work structure, or management. He gave ideas, planned, executed and controlled, since there was no technical equipment which would be used in performing of duties and tasks, or there was, but its application did not influence greater work success. The physical strength had the greatest impact, so, a man, or a slave is often used to pull the plough, to turn the wheel for irrigation of land and to pull the carriage. The initiation of animals that pull the carriage and carry out work in the field, represented great innovation. The man in manual organization was valued according to physical strength, ie. according to muscles and endurance degree. Therefore, slave's price was formed according to his physical structure and strength, ie. energy that slave could have spent in performing duties imposed by his owner, or vilikus.

In mechanised organization, such as manufactures and original workshops, or facilities, human introduced accessories, tools, and instruments, which enable saving his physical strength and muscles and tranferring of certain tasks to mechanisms. It is well-known saying: “Give me a lever to tip over the world.” This wisdom in the best way shows and proves that utilization of primitive technologies at least, increases success of a man and manufacturing outlets or workshops. So, in the mechanised organization, man routine labor functions tranfers to the more sophisticated tools, such as mechanical loom, te wheel with mechanical function, metal instead of wooden plough. *

In the management structure of work, such as control, man introduces mechanisms such as sound and light signals which stop continuous conveyor belt when error occurs and continue further production only when the error is corrected. It is clear that in this way,

greater success in work is achieved and higher humanuty as well, because when it comes to control of work process sensors are now more reliable than it was man. Obviously, the man in every new time dimension sought to extend his power by using new technologies which made socio-economic formations differ according to how something was produced not when it was produced. Of course, releasing the man to do physical and executive jobs, or to control and transfer control functions to mechanisms and machines, bigger capacities are created, capacities that enable man or people use their creative potentials in other more complaxed functions, in the structure of labor and management.

Man's constant thinking about improvement of the existing tools caused automatized organization in different modalities of development, which lead to the new legality, ie. that every higher or perfectly created work modality is based on the previous business method. Therefore, handheld loom was transformed into mechanical, animal-drawn tillage was replaced with tractors and mechanical tools in industrial production were replaced with machines and robots. During this period of organisation development, man is partially and in some phases completely released of planning, and this activity, or element of work structure was transferred to the tools and techniques, such as: network planning, programming, other organisation techniques etc. These and other techniques of planning, thanks to the software emprovement and modern IT technology, can be fully transferred to computers, can be modified during the work process, etc.

The only section in structure of labor or management, which remained under the jurisdiction of man, is the giving and sharing of ideas. So, ideas born ideas, creating synergies and new cheapest, ie. free energy. Only man is able to invent and design new concepts and to develop new project solutions in his imagination, including the way of its implementation or use in the work process. It has always been under the jurisdiction of man, as the only sensible and intelligent being. That function can not be taken by any mechanisms, machines, robots, computers, no matter how perfect they are. Ideas are the result of man's imagination, and no other tool, even the most advanced computers, have ability to create them and to think about their potential implementation in practice. Information technology and computers are functioning in the manner designed by man. When a man wants to change its basis of functioning, such as dimensions, capacity (memory), design, speed, reliability, price, etc. It must be occurred in the human brain, as it thought Tesla: "Every mu invention was just like I imagined it in my head. When I wanted to change it, or upgrade it, it was necessary to create it in my head first." Therefore, technologies, including modern information technologies, are the man's result, the result of his imagination and knowledge, which means that there is a high level of correlation between man's knowledge, skills and abilities and technology development level.

In the future, as long as there is the world, the significance of man in the society and organization will be increasing. This conclusion is logical, because there is also interdependence in the natural and social order which is increasing and becomes more complex, so it is very important to give high quality solutions to solve the problems. This especially refers to the direction of joint work toward specific goals, which is the duty of professional and super-professional management. One of the Nobel laureates warns of this statement, claiming that: "We must deal with complicated structures and greater number of independent variables and with more variability, less uniformity and greater difficulty of isolating each factor separately."

7 D. Pizano: Conversations with the great economists, Mate, Zagreb, 2015. pp 7.
4. WHAT TO DO NEXT AND HOW?

The technology, more or less, was changing human nature as man was changing and adjusting technologies to his needs, which points at the necessity of exploring this relationship, especially regarding man. This is considered to be necessary, because as Einstein noted once: “It has become frighteningly obvious that our technology has exceeded our nature,” and that there are increasing number of people on the Earth, but decreasing number of people in terms of values that man provides nowadays.

Discovering and exploring the relationship between man and technology, it is made a solid basis for the projection of perspective in further research and development of foundations underlying modern society and business. Knowing that the technology receives all impulses and orders from man and that it functions in the way imagined by man, there is no place for any doubt regarding what is primary and what is secondary when it comes to the greater personal and organization success. According to this, one should bear in mind that man’s knowledge is determined by the perfection of technology and that man will never make perfect technology because the potential of the human brain is unlimited. If man could achieve this impossible mission, he would be in a hopeless situation.

It is evident that technological power will gain in importance in the future. In other words, there is decreasing military and economic power and its role takes over technology, especially information technology. It increases economic power in sophisticated manner, because technology leaders improve their economic power through lower costs and sale price, which creates a competitive advantage.

According to the above, it is indicated and proved that in a permanent technical and technological and other discoveries, special attention should be paid to the human factor and within it to the brain as the most complex computer created by nature. Given that human abilities are unlimited, under condition that are not limited in one’s own head, it is important to bring management to a higher level. In other words, it is important to empower employees, which means, “to allow them to use their own brain and their own knowledge, experience and motivation in order to achieve triple bottom line. Managers of the leading companies know that employees’ empowerment brings positive results which are not possible when whole authority is conceptualized in the technology, or in the top of hierarchical pyramid.”

As it is case with brain power, and mentality can be increased by using new technologies and motivational techniques. Due to insufficient presence and implementation of motivational theories and techniques, productivity and creativity, as the greatest human potential, are unutilized. In regard to the above, famous British theoritician T. Charfield in response to the question of future realtionship between technology and man, claims: “Meaningful cooperation between humans and machines, must not undermine human creativity, feelings and questioning using the speed, profits and efficiency.” P. Drucker claims that the managers pay much more attention to the empowerment than to the motivation of employees to act in accordance with the requirements of the organization.

In this context, man must be considered reasonable but as a human being of inter-

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est. Interest, interest and interest again. This is the healthiest cohesive tissue that connects people, but also motivates improvement of efforts and revealing the secrets that improve success. So, if a person, or people, don’t see their personal or indirect interest while doing certain job, they will not make an effort or sacrifice to explore new manners, techniques and technologies, in order to perform certain operation, or job in the better way. Managers and other executives should understand interest of every man and to find motivation tools in order to activate their mental energy, which, as electric energy, also consists of two poles: motivational and emotional pole. Connection of these poles provides creation of mental energy which produces mental process. If only one pole is missing, it is not possible to produce mental process that initiates activities. So far, in practice of management science, motivation has been processed as well as motivational techniques, except a source of motivation. This is the reason why motivation has not been connected to emotions, which causes lack of more complete understanding of these relationships and their interdependency.

It is important to say that desires, as a result of emotional energy in the science of management and organization, were disregarded. But, that is not all. Both in theory and practice, there are cases of emotions’ denial. The organization was considered as interest and technical system where is no place for feelings and emotions. Any sort of insistence on respect for people’s emotions was often condemned inside the organization, and the protagonists of this idea were declared dangerous for organizational success. There is no need to explain how is this attitude pointless and wrong, because if you take away sensibility of a man, he becomes a robot, or slave. Therefore, a higher level of respect for these components of human being would significantly improve personal, as well as organizational success.

Bearing in mind previous statement, today we talk not only about emotional energy and intelligence, but about emotional maturity as well, which turned into some kind of a low. This characteristic is supposed to be owned by the leaders, and it means that in diagnosing and troubleshooting they show calmness and composure, even when there are difficulties and troubles. It means that individuals or leaders manage themselves, especially when it comes to changes which are usually the main cause of stress. Desires are atypical, related to the individual and unlimited as such, because while producing desires, we also achieve other desires, so the whole life is imbued with the creation and achievement of desires. So, there is no activities in creating desire or will that might be produced by motivational energy is null and void and has no influence on man’s activities, unless there is desire. Therefore, the management has the task to develop employee’s desire, because the desire is dead without will and will makes desire real. It turns out that man by creating more desires has increasing inner unrest and vice versa. Great desires produce chaos, which converts into invention or ideas creation.

Motivational energy represents second pole of the mental energy. In the past, it was taken as a basis for improvement of success because it was proved that there is high level of correlation between motive and success. So, different motivational energies were developed, without searching for their source, i.e. who creates motivation and where it comes from. Therefore, motivational energy creates man’s will to achieve created desire and it influences competitive behavior when it comes to manner and quality of desire achievement. This is confirmed by Aristotelian statement: “The starting point of decision is will and the reason why we want something. Therefore, there is no decision without reasoning or logos and
reasonable judgement and independently of the moral attitude. There is no good or bad performance without reason and character. Nothing can be moved using operation of thinking, only practical thinking guided by certain goal has that kind of power.

There is something that Aristotle and other philosophers and scientists overlooked, and that is a source of energy, difference between emotional and motivational energy and necessity of their simultaneous operation, or inclusion. This energy can produce effect only when both emotional and motivational poles are included. Exception of one of the poles, prevents creating of desire or will. In this case, there are no impulses that would encourage a man to perform certain duties, which causes lack of activity and effect. This rule also applies to electrical energy. Although no one can define exact meaning of the energy, and electricity as well, yet it is known that when including only one, positive or negative pole of electrical circuit, energy cannot be established, nor electricity in the form of light.

Motivational energy is focused on rational and competitive behavior of man. Rational conduct implies that man through rational activities provides basic goals, including longer lifetime and better life standard, with the least consumption of energy. Competitive behavior refers to man’s tendency to spread his influence and domination on other people or environment, striving to represent his abilities or influence greater comparing to competitor’s. Rational thinking is the result of man’s reason, while speed of reaction is determined by the speed of receiving impulses and knowledge within human brain.

Everything mentioned, imposes the need for paying special attention to the mental energy in modern business, instead of the traditional approach where attention is paid to the physical component of man and employees. Mental energy is unlimited, and the current level of its use ranges from 3-5%, which is insufficient. It seems that it is one of the rare resources which is rarely used and it is wonder how man survives with such a small degree of use of his mental potentials. Imagine what would happen with the organization where tools or raw and materials are used by 5% of its potentials. Such organization would not be able to survive, i.e. it is doomed to failure. So, the action or activity in the future should be directed to man and to his brain where lie the largest reserves regarding increase of personal and organizational success. It is because the brain has ability to transform mental energy and enable people “to create visualization plays and mental constructions which they attend to achieve and that is manifested through the imagination. The diversity and an abundance of imagination provides possibilities for production of different visualization forms, including more complete and high-quality mental images or mental maps, which have a crucial influence on management decision making.

When it comes to the brain, the right hemisphere will be progressing in the future. It has capacity of creating, improvising and intuition, which are the most important for business success. Right side of the brain starts from the whole which is primary, then it is being formed and after that it is divided into parts. It turns out that individuals whose right hemisphere is dominating, must predict an outcome they want before starting certain business. They are able to do more than one job at a time, they often late and do not respect the deadlines. Individuals whose right hemisphere is more developed, are more resourceful trying to observe certain issue in a broader context. Therefore, world’s elite business schools while selecting students use brain scans, in order to determine number and speed of neurons.
since they dictate the intellectual strength and individual’s talent. Brain scanning serves to develop less dominant part, aiming their balance.

In order to develop right cerebral hemisphere, it is possible to use certain techniques and trainings, as it did Tesla once. Although in the past was popular medical view which implied that managers with developed right hemisphere are more capable, the latest medical research in the USA has confirmed that super-managers’ brain balance between left and right cerebral hemisphere. This is natural, because managers do not move and think linearly. When they need it, they use their creations and intuition, but they also must use left cerebral hemisphere and to think logically and linearly. Generally speaking, left and right hemisphere process information in different manners and it depends on the dominance of the left and the right hemisphere, how certain information will be handled by individuals. It is important to emphasize that the process of thinking and learning is better and faster, when both hemispheres are activated.13

It should be added one more alpha plus ie, modern or information technologies. By using these technologies man can improve his intellectual power in every segment of his life and work. Their constant presence in modern conditions is best explained by the fact that successful medicine can’t be imagined without use of modern diagnostic, therapist and other techniques. Manager’s power also can be improved by using information techniques and expert systems in bringing strategic and less important decisions. There are increasing interest in virtual companies, electronic management and management of companies at the distance.

5. SUMMARY

This study shows relation between man and technology. The tools, or techniques and technologies refer to applied knowledge that man uses while striving to transfer certain functions to the mechanisms, tools, robots and computers in order to perform certain activities in faster, more quality and efficient way. Implementation of advanced technologies has changed the classical organization and management by “tracing the third road”, or by finding a way for accomplishment of business success. The concept of technology in contemporary conditions should be expended, so the technology also involves science as the best quality tool, ie. new productive labor power. The tools can be abstract, such as formulas, concepts, schemes and software sketches, algorithms, etc. Managing as a contemporary modality of management is a technology that has its algorithms, scientific and technical bases, and which is changed in accordance with the environment.

It is evident that man is primary and the most important factor in business and that is impossible to imagine any job or business without him. He managed to retain this characteristic in time of technological revolution, as the technology is created, changed and improved by man. Man implements new techniques and technologies and eliminates outdated and economically unacceptable technologies and tools. Therefore, it is claimed that in spite of certain level of robotisation and computerisation, man will not lose his position in the future, and his importance will keep growing, because the tools and technologies are his products.

By transferring operational, including intellectual activities in contemporary conditions, man improves his power in the parts and the activities that are typical for him, as a conscious and intelligent being. He will be less involved in executive, operational and routine activities, because they are performed in the better, faster and more reliable way by the tools which man constructed and applied in his work. Man improves his creative potential releasing the physical work, i.e. he will be more involved in creating, giving, thinking and implementation of ideas which are the most valuable resource of any organization. Creation of ideas is invention produced in human brain, which is the most valuable man’s tool. Due to releasing of small, repetitive, routine and operational tasks, man do not waste his physical and mental energy on minor activities and he can direct it to the imagination, cleverness i.e. creation of ideas including production of new techniques and technologies.

Man, or people are also influenced by technologies in a feedback. In spite of the fact, that the Internet is not strategic tool, radical changes are made and everything changed by implementing information and other techniques. Therefore, new technologies create new labor rules and impose new models in organizational behavior and business culture. However, this feedback influence is supervised by man and it can improve behavior and organizational climate inside the organization by modifying technologies and tools. According to the above, we are optimists. It is considered that technology will be progressive in the future and that it will prolong and advance people's life instead destroying it.

6. LITERATURE:

THE FUTURE OF MANAGEMENT IN A HIGH-TECHNOLOGY ENVIRONMENT

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Abstract: With the development of new technologies, there is a reasonable question about the destiny of management as a science. It should be taken into mind that management is a technology, highly sophisticated one and the technology that manages mutual work in order to achieve defined goals. The question is whether the management is going to withdraw from the new, and before all information technology and in what measure. This question is not baseless, because the new technologies multiply prospered, and management, with small cosmetic changes and advancement stayed at the level as it had been decades ago.

Maybe the biggest problem with the relationship between management and technology is in adequate understanding of this relationship, namely, technology should not manage people, but people should manage technology. Maybe the word “should” can be replaced with the word “must”, as an imperative, so a man and his intellect, intelligence, can be preserved. Undoubtedly, as long as a man, using intelligence, creates a code of conduct for technology, there is no danger to everything that is present in technological dynamic environment.

The authors endeavour to point out some dilemmas and controversies regarding management, primarily with its point of view in technological dynamic conditions, and also organizational environment, that is more and more changeable and uncertain. This paper can also be a reliable basis for perceiving changes in management.

Keywords: the future of management, dynamic environment, technological environment

THE FUTURE OF MANAGEMENT AS TECHNOLOGY AND CONCEPT

There is a high level of interdependence between management and technology. Management is also one of the most complex technologies, with which a man can deal with,
because, first of all, this technology is directed towards a man as a conscious and reasonable being. This technology gave birth to two kinds of managers: managers who know the things they do not manage and managers who manage the things they do not know. It represents the mode for managing mutual work that appeared to be one of the most successful during the last five and more decades. It originated in the industrial society as a historical category, when it led to management revolution in which owners devolved their empires upon people out of their own tribe, which led to separation of the function of property and the function of management. In a broader context, directing, or managing mutual work in human civilization went to leadership, through entrepreneurship and administration in different modes (guidance, management). Each of the listed modes had its own lifespan and the longest was the one related to hunting gatherings, the one related to entrepreneurship was shorter, and management as a dominant mode of managing will not survive one century according to all estimations. Since its first form, management has evolved from management based on compulsion and centralization, through democratic and liberal management, which for its base uses decentralization and leadership as a version of professional managing based on coaxing employees into accepting and conducting the ideas of the leaders.

The fact is that technology had a significant upturn and fundamentally changed the world during the last few years. Expeditious and reliable computers were introduces, that can process a large number of data in short time. Time in digital era is measured in nano seconds, that created new paradigms, and the speed got new dimensions, that were inconceivable during the last decades. Internet enabled the connection and globalization. Digitalization achieved a great success, so people can remotely study using information technology, use health care services from their homes, get public and other kinds of documents using one click of the computer mouse, etc. Electronic trading and banking, managing technical systems remotely, internet marketing, etc., have the right of citizenship and it would be hard to imagine a life without these innovations.

The undisputed fact is that all types of technology advanced to an inconceivable level. Many people have an opinion that this progress was not proportional, and some think that with the advancement of technology man regressed at the same time.

Observing the relationship between technology and management, there is the same constatation. Technology prospered, but management, as a science and profession, remained at the same level as it was few decades ago. Because it is impossible to make simultaneous progress with technology, first of all with information technology, a man more or less loses his intellectual and emotional capacities. If one of the famous super managers of the previous century got up and saw how an organization is managed, he would be stunned by the fact that it is done as it was done in the second half of the previous century. Although management in the first half of the 20th century reached the top of a mountain, today this technology is on a level of one hill. “Just like gasoline engine, a model of management from industrial era, that classical practitioners, born in the 19th century, designed, decays in the end of S-curve and it could come to a point when further improvement is not possible.”

The constatation is clear. Minimal changes happened within management as a technology of managing and directing mutual work, although the changes in management had to follow the changes in environment. Paradoxically, even the organizations changed more quickly, starting with the managing structures of chief management, in technical, technological and also in organizational sense. This is contrary to the claim of the father of man-

agement P. Drucker who stated that the administration has to change more quickly than the organization. Simply, people got stuck in organizational model that functioned in 19th century.

Classical management, created in industrial organization fifty years ago, today becomes a limiting factor for further efficacy, especially when it comes to introduction of new concepts in one organization, attitude towards people, etc. It is already shown that introduction of new, informational technologies does not change organizational design which would be a natural thing. Informational technology is capable of breaking traditional organization, modernizing it and breaking obdurate bastions of departments, sections and operations. However, it is not happening, because in the conditions of classical management and organization, technological power decreases and it is not capable of giving planned effects.

On the other side, technology facilitates performance of numerous jobs in an organization, but it led to degrading man as a thinking and emotional being. It is not far from the truth that in organizations with high organic composition of capital, in other words in the organizations where the processes are automatized and robotized, man loses relationship with other people, with management, and also with himself. The presence of it in modern working conditions can be seen in everyday life, in highly developed and technologically prosperous countries. So, the changes in technological sense impose the needs and changes in management.

SOME OF THE CAUSES OF THIS CONDITION

Outdated educational system of managers at well-known business colleges in the world, including Harvard, the most prestigious university for business management, had a dominant influence on this kind of condition of management and it still has. The programs of these universities are still based on classical management from the 19th century. Determinism, hierarchy of power and authority, and the presence of mechanistic approach to management dominate these universities, with subordinate role of man. Work with people and participation of humanities and social sciences in education of future managers are minimally present, and extensive commercialization of management collages neglected education of great managing experts.  

The other side of the previous problem refers to education of managers in the present, not in the future. An average super manager of large multinational and transnational companies is now about 50 years old, he is educated in conditions of incremental, small and gradual changes, trained for managing resources in relatively stable and invariable working conditions.

The world and business have changed dramatically, so that modern business is compared to war effects, and the market is compared to battlefield, where the competition conflicts, many disappear in competitive battle, and the new participants appear. In the listed circumstances, management, educated for normal times, is not capable of responding to new challenges in every dimension, time and space, and it becomes more and more complex and uncertain. It turns out that one kind of management rules are valid for normal, and the other for “war” times, and the successful generals in peaceful times are usually unsuccessful.

2 More details in: Ž. Radosavljević: Business Collages as the Cause of the Crisis, LEMIMA, Belgrade, 2011
in “war times”. The time of crisis requires higher level of practicality and improvisations in positive sense, while normal times require gradualism, analyticity, prudence, etc. The concept of education for future managers should focus on the future and times of crisis, because these times will happen more often with more destructive effect.

The tendency is that management, as a concept and technology, will not change in the following period, which will necessarily lead to its disappearance, because natural order shows that everything that does not change and does not follow the changes will eventually disappear. Precise analysis about theoretical basis of management show that management practice changed very little over the last few decades, and at the best-case scenario some cosmetic changes happened and they do not substantially change the previous constata-
tions. Simply, management as technology is in an outdated phase. Considering the theory of lifetime of products and organization, it is necessary to put great effort into its recon-
struction in this phase, in terms of implementation its functional performance, especially the introduction of the facts and evidential instruments, as was the case with natural and technical sciences.3

Society with informatics and high technology naturally requires a new type, or new technology and philosophy of management, because with the introduction of the technique of informatics and technology, it is considered as a radical change, that has to be followed by electronic management. Generally, it means that the structure of managers, the manage-
ment team, should consider how to do something and not to work by themselves, or to oper-
ate. Logically, robots can do some jobs much better than man, but robots, and computers too, can not think and design how to do a job in a more efficient and effective way. It always was and it will be the job for a man. So, computers and robots are more powerful, faster and more efficient than man, because man constructed them to be in such manner, otherwise there would not be a practical purpose of their existence. However, computers are so stupid, they are not even capable of making any kind of mistakes.

Regardless of various understandings and a bit delayed development of this science, there is indisputable fact that management, as a technology, will be more significant, because not only great turbulence and uncertainty, but also bigger interdependence and inter-
action between individuals within the organization, between parts of the organization, and between the organization and environment in which it functions, will be expected. Manage-
ment as a science and skill will set the quality of an organization, and not its operative and tactical part, that gives reports and carries out the strategy that formulates its presence at the top of hierarchical pyramid.4

Although the computers are dull, as P. Drucker said, management has to use informa-
tion technology for performing routine and other jobs more than ever, primarily for col-
lecting, selecting, storing and distributing of information and knowledge on horizontal and vertical levels of the organization. The key role of information technology is storing and distributing, changing knowledge and experience, and because of that, employees should be equipped with computers. Then, they will be able to find the ways for doing their jobs and tasks more efficiently and more effectively, that will partly reduce engagement of manage-
ment. Then, unexpected results can be obtained. Of course, it requires training, that is not a big problem, because many times practice showed that it is easier to teach computer studies 

to creative people, than teach a programmer how to make money in business.

THE NECESSITY FOR THE INTRODUCTION OF SCIENTIFIC (DOCUMENTARY) MANAGEMENT

Management is a recent science, skill and profession. The main task of management is to increase efficacy of organizations, especially to achieve defined goals with the smallest number of economic casualties. It acquired the status of a science, because it has an investigation and research subject, methodology and scientific laws that can not be disputed. These legitimacies were confirmed by practices conducted over several decades in various activities and organizations, an the father of the classical management, Taylor, also pointed it out with the statement: “I believe that management could be a real science, that as a foundation it could have clearly defined laws, rules and principles.” In his opinion, and also in the opinion of other theorists of management, the key role of increasing the economy of business in management system should be pursued. The solution to increasing economy in a classic organization, that Weber gave, is based on:

- Division of labour and responsibility based on precise description of workplaces,
- Hierarchy and respect for positional authority,
- Selection of employees for some workplaces based on education and technical skills,
- Precise rules of controlling.

The precise analysis shows that these principles are still applied in modern organizations and they are usually considered as a basis for increasing business efficacy. Weber died a century ago, but his principles are still being applied, and apparently it will last in future, which is very important thing. So, we live in a society composed of knowledge and informatics, and we apply bureaucratic rules from the previous century. The management literature often exalts bureaucracy, so, more or less we are all members of bureaucratic class. It is clear that this kind of action can not lead to satisfactory effect, because it is known that applying these outdated concepts to new working conditions, often leads to a failure.

The listed above demands radical changes in the concept of management more than ever and introduction of factual management, or management based on the facts, files and information, scientifically approved and accepted in the management practice. This is easy to say, but difficult to carry out, because postulates of classic management are deeply set and they converted into gospels or anthems of the companies, difficult to eliminate and marginalize. Taylor himself was aware of it, saying that changes in management demand big intellectual leap. But the revolution has to begin from the foremen to the highest level of hierarchical pyramid. Yet one must start, because the old proverb says: “Even the longest trips begin with the first step”.

Every science is based on facts, or scientifically valid information, that are experimentally confirmed. This constatation refers to natural and technical sciences and represents its basis. As it is known, the engineers during designing, building and other activities, have to document certain project, or decision, that is to prove that everything was done, and deci-

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sions were made, using only scientifically proved facts, for example videos, calculations, drafts, drawings, etc. So, engineers have to prove, using documents, that their solutions are supported by profession and science. It is common practice that every project, or making strategic decision, is revised, and checked whether everything is done by the rules of profession and whether the calculations and other provable material can also endure a logical matrix of certain solution. If there are any mistakes, the new calculations and analysis are done, in order to harmonize the solutions with vocationally acknowledged standards and solutions.

The similar situation is also present in medical studies. If a doctor wants to make a decision, he has to have a documentary basis that is based on analysis, laboratory tests, X-ray and other videos, reports of medical specialists that are important for a certain problem. So, the entire process of doctor’s work is monitored by scientifically and experimentally confirmed and valid procedure, and there are big chances to make the right decision in medical process. Thanks to the listed facts, there is a big chance, based on symptoms and medical reports, that doctors, in different parts of the world, might make the same diagnosis and the same treatment procedure. If a medical problem happens, the diagnosis will be revised whether it was made correctly, whether the right medicines and therapy were used, what was the value of the provable material, etc. If the standards and procedures were not followed, a doctor, or some other medical expert could be responsible for this, to the extent of losing his working licence, and even they could have criminal liability.

In management science, the things are not the same as in technical and natural sciences and professions. There are no exactly, expertly, and scientifically valid rules in doing jobs, and primarily in determination of the condition of economic structure, clear criteria for making the right diagnosis, and also there are no exact medicines with which the illness can be treated. To a great extent, this raises doubts about whether management is a science at all, or a skill, or experience. Because of that, there is a question in modern management how to raise scholarship and verification of primarily strategic and then operations management, especially in conditions of increasing influence of politics and general, social movement on business.

Doubts about management scholarship are not baseless. The practice shows that making managing decisions, followed by a level of subjectivity, and decisions and acts of management are not based on scientific and expert facts, but on improvisations dominated by experience, intuition, etc. According to the above mentioned, for the same situation one can make different types of decisions, that will produce different effects. So, different problems can be solved by the same strategies, or the same problems can be solved by different strategies and tactics, and that is impossible in natural and technical sciences. For example, lateness for fork and violation of working hours, can be solved by sanctioning employees who are late, or rewarding employees who observe working hours. The first or the second solution can be differently modelled.

The problem of management as a science is managing of organizational systems that are conditioned by individual elements, for example: business surrounding, organizational culture and behaviour, organic composition of capital, up to habits, tradition, etc. Consequently, the situation of one and the same strategy appears in various cultural and sociological zones, and it produces various effects, or various strategies produce the same effects.

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which is almost impossible to see in natural and technological sciences.

However, management as a profession and science has to raise its scholarship in order to respond to more complex challenges occurring in business fields, considering:

- The use of mathematical-statistics, quantitative and qualitative and other types of science in diagnosing and making managing decisions. In some functional managements, such as optimization, planning, controlling, extrapolation, etc., it is possible to objectify making decisions, that is, to exclude subjectivism and influence of the environment. In financial, and also in technical and commercial management, the techniques and models, than can be mathematically quantified and used in making strategic and managing decisions, are fixed.
- Accounting, as a subsystem of information system, can be used for making decisions, through the analysis of balance and some balance sheet positions, calculating financial leverage, capital turnover ratio, profitability ratio, return on capital employed, etc. According to the listed above, we can have a relatively good estimation of the financial flow of an organization and we can undertake appropriate measures.
- It is useful to apply analogies in management, or to use analogue events or procedures from technical and natural sciences. For example, modelling of synergy in organizations is possible to carry out using animal science, or observing a flock of birds, a swarm of ants, a swarm of bees, etc. It can be seen that this is useful because airplanes were constructed following the example of birds, and management or leadership was taken from the leaders in animal world.
- Introducing informatics and expert systems, making managing decisions can be objectified, considering the fact that there are already software programs, that can give specific solutions.
- In order to lower subjectivity, it is useful to remove stereotypes, because they present the biggest problem in management of organizational systems. This is a situation in which decisions are made, where people do things in a way the environment consider appropriate, or how they did the things in the past, and not according to adequate documents and facts. Because of this, strategic management decisions are followed by high level of subjectivity, they depend on the personal perceptions of every manager.
- Making strategic decisions should be also followed by experimental research techniques, that should be practically checked, because forming a strategic decision in an office is not the same as put it into practice on the field. As it is known, the experience of technical science and industrial organization can be applied here. For example, prototyping tools in industrial production aims at checking the constructional and functional conditions of a specific machine and determining its good and bad sides using exploitation, in order to correct the mistakes of the bad side and strengthen the good sides in assembly line production or in mass production, and remove any doubts about functional characteristics. The same practice can be applied in the organization and management both, in which a specific model of organizing could be tested. For example, testing and simulation of introduction of decentralized methods of designing organizations in some activities, instead of hitherto decentralized method. Such experiment was established in 1960s, when a self-governing organization was introduced in former Yugoslavia, and a model of self-governing organizing and managing had been tested in a large number of companies from former republics of Yugoslavia. In this way, the possible errors in designing, building, keeping and managing
organizations are eliminated, and conditions for testing the theoretical model are made, in order to improve it.

- Experience of factual medicine can be relatively used in management science also, especially if medical and biological concept of management is accepted, where the organization is observed as any living thing, that has its brain, and in management it is general manager, that has extremities (legs and arms), in organization they are executive managers of functional or operational level.

The listed above indicates and proves that managing is a complex job, and management is one of the most complex professions. Because of that, it is necessary to introduce documents, or traceability of making management decisions and traceability in realization of the decisions. This would raise scholarship of management and increase the quality of managing at the same time. So, Organizations from the third millennium run away from the grasp of amateurism, intuition and superficiality in management, and it was objectively present in the previous century and it is present now in considerably large amounts.

Factual management supported by information technology in the high-technology environment would lead to management, whose qualities would be determined according to results. P. Drucker also warned us about this fact: "Managers must be responsible for the results, and that’s it. They are not paid to be philosophers. They are not even paid for their knowledge. They are paid for their results. Management is not a branch of thinking, but acting.

**SUMMARY**

Analysis has shown that the future of management is certain. And not only that. Management will get more significance. This constatation is logical, because the interdependence between some subjects will increase more and more, that will adjust the functioning of organization on macro, mezo, or micro level. Therefore, the existence of management as a science is necessary, but also a high level of competence of managing elite. Without management and management experts in various fields, it is impossible to imagine the efficacy of any country, or organization, because mutual work embodied in organizations implies a manager, or water, that will direct mutual work toward achieving defined goals.

It is necessary to introduce traceability in the future management, and factually making strategic managing decisions. In other words, management profession, even though there are tertiary institutions, is not based on traceable and factually substantiated information. So, it is necessary to change the rules, standard and procedures from natural and technological sciences, to use only the same medicines for the same diagnosis, in order to maintain the organization in the condition of “eternal youth”. We should take into consideration that it is difficult to accomplish, but possible, because the efficacy of management is conditioned by social, sociological, political, economical, and especially culturological impacts. Hence, the practice shows that strategies that were successful in one culturological zone, are totally unsuccessful. Introducing and promoting of traceable management, management scholar-

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ship would enhance, and also its efficacy and effectiveness.

Putting man, as the only conscious and reasonable being, in the focus of attention will be more evident in the future, because everything created on Earth is the result of human intellect. It will happen also in the future. Because of that, insisting on human intellect and connection between emotional and motivational natures, that create wishes and needs in humans, or creating a will to fulfil the wishes, demands a different kind of managing model compared to the past. The new model will probably be medical and biological concept oriented towards human brain, towards its right hemisphere capable of creating and improvising. This concept, supported by information and other technologies, can give satisfactory results.

LITERATURE:

THE APPLICATION OF NEW TECHNOLOGIES IN ECOLOGY

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Abstract: In ecology, it is important to know the name of species and where they are found. However, for the conservation purposes, to be able to interpret species distribution, the scientists also need to know about the environmental characteristics of the area such are climate features, soil structure, human population density and many others. Using new technologies such are satellite coverage, molecular techniques, modern computing and modelling, ecologists are obtaining a rich supply of information and gaining the ability to monitor how different regions are changing in terms of biodiversity. Automation of data collection and data analyses are still critical technical challenges that with the development of new-sophisticated technologies will need to be improved during the 21st century. Furthermore, increased use of modern technologies in ecology will help environmental managers in planning strategies and generating governmental policies and procedures critical for saving our environment and preserving biodiversity.

Keywords: ecology, technology, innovation, biodiversity

1. INTRODUCTION

The name of the scientific field of Ecology comes from the Greek word “oikos” meaning “home” or “place to live” and -logia meaning “study of”. Ecology is a multidisciplinary field that includes the fields of biology, geography and earth science and more specifically includes the biological disciplines of genetics, evolution, physiology and behaviour [1]. In ecology scientists are exploring organisms, their environment, interactions among organisms and interactions of organisms with abiotic components of the environment. Abiotic factors include non-living chemical and physical parts of the environment such are water, light, radiation, temperature and land. In ecology, the characteristics of population are investigated on the levels of distribution, diversity, and distribution. Population is described as a group of organisms from the same species that live on the same geographical region and can reproduce. Ecologist are exploring the characteristics of an ecosystem that
presents a community of living organisms called producers, consumers, and decomposers. For example, in marine environment, coral reef ecosystems are the most diverse marine ecosystems, which provide habitat for approximately 25% of all marine species (Figure 1) [2]. Within the foundation of this ecosystem, reef-building corals form mutualistic symbioses with unicellular photosynthetic dinoflagellates of the genus *Symbiodinium*. Break down of symbiosis (*Symbiodinium* algae leave coral host) due to changes in environment such as global warming and ocean acidification leads to coral bleaching. Currently, the worst mass bleaching event (2016) is endangering the wellbeing of one of Australia’s most important natural assets, the Great Barrier Reef (GBR) with over 1,000 km of GBR being affected. Monitoring features of the ecosystems and changes happening are greatly improved using modern technologies. A number of new technologies such as molecular biology techniques, satellite remote sensing and modelling, are used to explore the characteristics of ecosystems, population and abiotic components of the environment. In this paper, we will provide an overview of some of the most important technologies currently used by modern ecologists.

Figure 1. Coral reef ecosystem: the most diverse marine ecosystem providing habitat for hundreds thousands marine species.

2. TECHNOLOGY IN ECOLOGY

Why do ecologists use technology? A principal interest of ecologists is to locate where organisms are found, to report how many occurred at the particular location and to explain why [1]. New technologies are trying to provide more answers to these fundamental ecological
questions and the requirement for improvement in technologies allowing automated data
collection and punctual monitoring are constantly rising. A list of major novel technologies
used by ecologists and their importance in modern ecology is provided below.

2.1 Molecular techniques in ecology

Numerous molecular techniques have been used by ecologists including DNA
fingerprinting, a use of gene markers such as micro-satellites and more recently a use of
next-generation sequencing technologies. Using molecular biology techniques allowed the
scientific analyses of even ancient DNA, provided new interpretation of the evolutionary
events, and at the same time gave new insights into changes happening within populations
[3]. Molecular genetic techniques are also providing understandings of population habits,
nutrition, and reproduction patterns. Understanding populations and their interactions are
allowing us to also better understand current changes in the environment and helping with
the development of management strategies critical in saving and managing our natural
resources.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Sequencing method</th>
<th>Major advantages for studies of non-model organisms</th>
<th>Major disadvantages for studies of non-model organisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roche 454</td>
<td>Pyrosequencing</td>
<td>Relatively long reads enables assembly of contigs even in the absence of a reference genome</td>
<td>Relatively few reads results in shallower coverage of sequencing; High error rate</td>
</tr>
<tr>
<td>Illumina/Solexa</td>
<td>Sequencing by synthesis</td>
<td>Very deep coverage because of large number of reads gives accurate measurements of gene expression levels</td>
<td>Short read length means that a reference genome is desirable for assembly</td>
</tr>
<tr>
<td>ABI SOLiD</td>
<td>Sequencing by ligation</td>
<td>Large number of reads and very deep coverage. Low error rate because of duplicate sequencing of each base pair</td>
<td>Short read length means that a reference genome is desirable for assembly. Data in colour space complicates downstream</td>
</tr>
<tr>
<td>Helicos tSMS</td>
<td>Single-molecule sequencing</td>
<td>Sequencing of single molecules means that no amplification step is needed, reducing bias in studies of expression levels or allele frequencies</td>
<td>New and still untested in studies of non-model organisms</td>
</tr>
</tbody>
</table>

Abbreviation: NGS, next generation sequencing.

Table 1. Currently available NGS technologies and their characteristics (adapted from [4]).
In the 21st century, advances in next-generation sequencing technologies have transformed biological science (Table 1; [4]). In ecological and environmental research, the analysis of environmental DNA with specific gene markers (e.g. species-specific DNA barcodes) has been done via the application of next-generation sequencing technologies (Figure 2). Access to massive amounts of sequencing data is leading to a better understanding of population diversity and adaptability to environmental changes.

**Next-generation DNA sequencing**

1. Library preparation
2. Clonal amplification
3. Cyclic array sequencing

![Diagram of next-generation DNA sequencing techniques](image)

**Figure 2.** The overview of NGS techniques (adapted from A.S. University of Barcelona).

### 2.2 Satellite remote sensing

Biological diversity is in decline due to habitat loss, overexploitation of natural recourse and climate change. Monitoring biodiversity and the impacts of changes happening in the environment are important for developing effective mitigation strategies that can be used to prevent potential loss of biological diversity. Satellite remote sensing (SRS) in ecology is used for monitoring abiotic conditions (e.g. temperature, rainfall) offering long-term data important for biodiversity [5] and the distribution, structure, composition of ecosystems (Figure 3; [6]). Information obtained using SRS about trends happening in the environment have significant influence on management plans and also on the development of an integrated management approaches to preserve natural diversity.
Figure 3. The example of use of SRS in lake ecology [6].

Figure 3 is representing information about the ecological state of alkaline-saline lakes that are extremely remote lakes. The data presented in this study had an accuracy of 77% and consequently demonstrate a huge potential of SRS for application in ecology [6].

2.3 Modelling and simulation

Stimulation of the environmental events using the computer-generated models can allow ecologists to better understand the ecosystems, connectivity and predict changes. These computer models are influencing ecological theory and helping in solving the ecological problems. Computer stimulations have been used for the stimulation of experiments that would never be done in real time and space. Subsequently, this type of experimental stimulation is allowing improved understanding of interactions happening in the environment and their affects on the dynamics in ecosystems [7]. The computer-generated models are so valuable basis of scientifically based predictions that can be used by conservation managers to underpin conservation and management strategies and decisions in the future.
3. CONCLUSION

Ecologists together with environmental managers are facing many challenges due to growing environmental problems and climate change. Using modern technologies such as molecular techniques, SRS, modelling and stimulation are helping in predictions of future ecological events, and better understanding species biodiversity and connectivity. Consequently, new technologies are allowing scientists to meet current challenges by providing enormous amount of data in ecological projects that would otherwise remain too costly and time-consuming. The future of ecology and the future of our environment will be determined by efficient implementation of new technologies in ecological projects and appropriate use of research findings by managers for the development of timely and punctual governmental policies and legislations critical for preserving biodiversity of our planet.

REFERENCES

SOFTWARE PIRACY AS A SHADY E-COMMERCE MARKETING VEHICLE

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Abstract: Faced with the persisting phenomena of software and data content piracy industry and legislators are actively engaged in resolving this alleged plague of the modern technological era powered by the digital computing and communications. In the work of which we present only a part of, we take more optimistic point of view of the general piracy, focusing specifically at the software piracy. Our position stated in this paper is that software piracy plays major positive role in the cyber space revolution and in particular in the evolution of e-commerce, namely, e-commerce applied to illegal trading of software may have some legal and positive attributes, i.e., parameters, which we address here. We introduce novel classification of the e-commerce participants and expand the definition of the e-market to the market that covers legal as well as illegal sales transactions where some illegal transaction may have overall positive effects on the profit line of the original software developers, producers and vendors.

Keywords: Software piracy, copyright, counterfeit software, e-commerce, shady e-commerce, implicit e-commerce, marketing, commerce model.

1. INTRODUCTION

More than half of personal computers (PCs) globally, contain installed software by illegal means. In countries like China, Nigeria or Vietnam over 80 percent of all PC programs are installed without proper license [1]. Although software manufacturers may find these figures alarming, we take the opposing point of view and try to better model this allegedly totally negative phenomena. In fact we try to discover positive parameters that work in favor of original software manufacturers.

According to reports from Business Software Alliance (BSA), a Washington industry
study group [2] [3], in absolute figures, the value of illegally used software worldwide rose to the levels exceeding 60 billion dollars (See Figure 1).

We find that reported estimates of the commercial value of all unlicensed PC software installations and the revenue losses totaling $62.7 billion in 2013 are not fair and are based on the relatively incomplete models of sales, profits and losses. Although not precise and based on various methods of market parameter estimation, these reports clearly outline certain acceptable measures and indicate gigantic dimensions of the illegal software use phenomena. Based on our research we conclude that the major reasons for such astonishing growth of what we call software shady market, are:

- The growth of legal software market itself,
- Expansion of the Internet and e-commerce as trading friendly platforms,
- The growth of the user knowledge of how to counter technical software protections, and
- Very likely consciences software vendor compliance with the software piracy.

In this work, we do not present arguments in favor of the first three above mentioned points and focus only at the last one. Under developed countries like Ex Soviet republic Georgia, Zimbabwe, Yemen, Bangladesh and Moldova are at the top of the list of countries with the highest rates of illegal software use. This fact was one of the major reasons why our approach to the phenomena of the so called software piracy is fundamentally different from the approaches reported so far in the relevant literature.

![Figure 1: Rise of pirated software through the years, (Courtesy of BSA [4]).](image)

Our work complements and contributes to the work performed by others on the relatively hot topic of software piracy and counterfeiting of software by not resisting this, in some cases, useful phenomena. In other words, the trend illustrated in Figure 1 of rising use of pirated software globally brings positive news to software manufacturers and distributors.
2. SOFTWARE LICENSE AGREEMENT

Systems software status alert message report shown in Figure 2, is frequent event on the PCs used in the countries of the under-developed world or used in poor neighborhoods in the cities of the Western developed world. The report shown in Figure 2, warns the user that software patches will not be provided to illegally installed systems. Apparently, Microsoft is applying software patch policy to their efforts to minimize their software use without proper license.

Software Licensure Agreement (SLA) is a document presented to the end user when acquiring and installing software via e-commerce and Internet or via physical commerce (p-commerce) using portable physical storage media such as CD/DVD or Flash RAM stick. End software users are expected to agree with all explicit terms and conditions itemized in the SLA before proceeding with the software use. Some of these terms and conditions prohibit:

- Replicating software and using it on more than allowed number of host computers.
- Replicating software more times than specified in the SLA and passing copies to family members, friends or passing copies to coworkers to be used in the place of business.
- Uploading software via social networks and sharing it without explicit permission which is not commonly found in a typical SLA.

![Optional update delivery is not working](image)

**Figure 2.** An example of the illegal license detection interrupt triggered alert program form.

Before proceeding with the discussions of explicit and implicit use of the SAL we are making several definitions.

**Definition 1.** Software license is a certification type of a document issued by the original software vendor, presented to, and accepted by, the software end user as a proof of compliance with the software use conditions itemized in the software use agreement.

As a certificate, a typical software license is issued upon legitimate software purchase to the user. By the acquired license, user is certified as a legitimate or authorized user. To better
understand software license it is good to consider the following definition of the specific SLA issued to end users and supported by the specific contractual agreement.

**Definition 2:** An End User License Agreement (EULA) is a legally enforceable contract between a software owner (e.g., software developer, publisher, reseller, etc.) and the user of that software.

The very nature of the EULA as a binding contractual document justifies involvement of the judicial and law enforcement government agencies in all cases when license agreements are violated. Different contractual documents are created between the original software producer or Intellectual Property (IP) owner and software distributor or reseller, which apparently are not end users.

Depending upon the financial compensation requirements, software licenses typically are either:
- Proprietary and for sale,
- Open source free, where certain open source rules apply, or
- Trivially free of charge without any limitations or preconditions of use.

The EULA sometimes wrongly used for “software license,” appears as lease or rental agreement; where users agree to pay for the license, i.e., for the right to use the software, and promise not to share software or perform any act explicitly not permitted by the EULA document. When purchased via e-commerce software EULA user agreement is followed by a simple check box that signifies user acceptance of the EULA document content.

As a rule, rare users read the EULA agreements which, as a common practice, may cause some realistic problems in the common law based legal systems such as systems found in the USA or Great Britain. In the common law based systems judges are at liberty to apply common sense and their understanding of justice when making their decisions [5].

When software is purchased in the physical market (p-market), EULA acceptance is demonstrated by the user when opening the shrink wrap of the software physical package, when breaking the seal on the CD/DVD media case, when sending a warrantee card back to the software publisher, when installing the software and entering the license number or code, when downloading license patches or other patches or by simply starting to use the software.

Typical EULA allows fair reproduction of the licensed copy for original media backup and disaster recovery purposes without obtaining explicit permission and at no extra cost. Purposes permitting the application of fair use generally include:
- **Academic use:**
  - Instructing and teaching,
  - Scholarly research.
- **Commercial use:**
  - Pre sales product testing-out and review, or
  - Marketing relevant product review and technical news reporting,

Interesting case of illegal software license use is acquiring academic or other discount-
ed and restricted software license to use it for an unqualified purpose such as home business.

The authors would like to add to the above list of fair use one implicit case that could expand the formulation of the “fair software use”. The case in question is that any unpaid use of proprietary software for self-training and self-education should be considered fair. Third author of this work has repeatedly made public statements [6] that computing should not be exclusive privilege of wealthy, i.e., that any use of software license for self training and self education does not have necessarily to go through the rigid and time consuming appropriate licensing procedure.

3. SOFTWARE PIRACY

Common definition of software piracy found in the relevant literature is all inclusive that we summarize as follows:

**Definition 3.** Software piracy represents any act of unlicensed use of software.

However, in our classification, software piracy refers to the specific way of use of unlicensed software, i.e., it refers to the unlicensed software reproduction for distribution free of charge or for profit.

Unlicensed software use can be classified as:
- Trivial illegal personal use and reproduction by private individuals or business establishments,
- Pirating use for unlicensed distribution, free of charge or for profit, and
- Counterfeit use for unlicensed media production, packaging, sale and misrepresentation of the product original label.

What we refer to trivial illegal personal (TIP) use is better known as End-User Piracy (EUP), sometimes referred to as Soft-Lifting Copying (SLP). TIP/EUP/SLP is prevalent in the corporate workplace, where one copy of software has been licensed and that same copy of software is installed on multiple computing platforms without the proper multiple host licensure. In some cases, people would also install that same software on their home PCs.

One specific case of TIP use is where user believing that the purchased license is legitimate becomes an unknowing victim of end-user piracy by using illegal license. Fortunately for such users, laws against knowing or unknowing “fencing stolen property” are rarely applied. According to laws of this sort [7] notified user of “stolen property” must stop using and must surrender "stolen property" immediately. Severe penalties are applicable for knowing users of “stolen property” [8].

E-commerce driven piracy is rapidly becoming the fastest growing sort of piracy. Many businesses allow employees to purchase at unrealistic discounts, (frequently free of charge), and download software via the Internet. The use of Internet apparently simplifies software acquisition procedure. However, such simple and time saving e-commerce driven procedures enhance piracy. Typical e-commerce driven illegal software purchase may take place over the popular auction sites such as ebay.com or craigslist.org. Numerous new explicit and implicit e-commerce sites are appearing daily. Smaller sites with shorter time to live (TTL) may be used to promote what we may call a “shady e-and implicit commerce.” Shady e-commerce is harder to track and supervise and as such may provide convenient business
platform to software pirates and counterfeit software distributors. Implicit e-commerce sites have, by definition, non-commercial purpose, but offer features that can be used for trading, (e.g., various blogs and social networks may be used to connect sellers and buyers).

The most frequent software piracy law violators are engaged in some sort of business of assembly and sale of personal computers loaded with illegal versions of Microsoft operating systems and office suite programs. Such violators are bundling their hardware with illegal software to enhance hardware sale. Since such violators mainly keep buyers in illusion that their systems and application software installed is legitimate, we may consider illegal bundling of hardware with the unlicensed software a counterfeit software distribution. No less frequent are the cases of business use of one host computer license on multiple computers loaded with the replicated single purchased software copy.

As a rule, legal procedures against software license violators are initiated by the disgruntled employee who is looking for the ransom award to be paid by the original software manufacturer, in most cases by the local Microsoft dealership. An exemplary legal case against one such software license violator reported and handled by Majmudar & Co. [9] serves as a good illustration of real world obstacles faced when violators are hard to identify, hard to arrest and even harder to punish financially. Under Indian law, as well as laws of most of the nations, a copyright holder is entitled to the compensation for damages and account of profits against an infringer. However, such compensations are frequently hard to realize. In the particular case reported [9] instead of the imprisonment and nominal compensation of $46,500.00, the court has decided to award Microsoft only amount of $1,037.00. Seemingly very low sum of just $1,037.00 was estimated by the court as the only sum that realistically could be collected and large enough to serve as a relative warning and a sort of a deterrent to potential violators of the same law after the court decision would be publicized in the media. Indian court decision points to the fact that in general, legal systems are facing true difficulties when trying to effectively enforce anti-piracy laws, especially in the countries of the third world or in the communities of financially unprivileged users.

There is no country where the law enforcement agencies can easily search each private residence or business facilities looking for illegal copies of copyrighted software. In countries such as Russia, India or China, with large populations and large segments of their societies financially not capable to purchase legal software copies, effective enforcement of anti-piracy laws is almost impossible. Our findings are that their legal systems are less to blame than the wide spread poverty. Following this argument, back in 1986 [6], third author has explicitly made very clear statement that users of software without proper license which cannot possibly afford to pay for it should not be prosecuted. Placing software license violations in the same plane with other crimes is not fair and should be avoided. The very nature of the software as a product that without a computer as implementation engine has no value whatsoever, the fact that software use requires sophisticated training, and that software replica has marginal cost when compared to other physical product replicas, should be taken into account when judging software license violation crimes.

Illegally traded software can be classified into the following groups:

• Pirated software, and
• Counterfeit software.

Both pirated and counterfeit software are illegally distributed with subtle distinction,
namely we may refer to counterfeit software as “value added pirated software.” Pirated software can be offered:

- Openly, as illegally copied and distributed, or
- Covertly, mis-represented as genuine when in fact it is not.

Counterfeit software is pirated software that could be delivered with minor changes and that is commonly mis-represented as licensed and genuine.

4. E-COMMERCE AND SOFTWARE PROTECTION

In the common business jargon e-commerce refers simply to buying and selling goods and products over Internet.

Marketing activities are frequently not recognized as a part of this common understanding of e-commerce and neither are all pre sale and post sale activities that truly are elements of what is considered as a commerce. We look at sales as the central point of commerce, and consequently of the e-commerce too. However, we recognize that sales are impossible without any pre sales activities. Following up on this view of sales, demonstrating software as a part of marketing effort is quite hard when software is well protected from easy or unauthorized use.

Software protection can be implemented through:

- Technical means using dedicated hardware and software,
- Legal means based on the well defined, clear, fair and enforceable laws. and
- Marketing and sales means.

The scope of this report does not allow us to elaborate on numerous technical and legal means of unlicensed software protection. Instead, we focus on the last implementation of software protection from illegal use, i.e., we pay particular attention to marketing and sales means.

Legal means are without a doubt very effective with business users. The major motivator not to use pirated software exists primarily in business communities which is capable of responding financially to possible court decisions with regard to unlicensed software use. The primary motivator is potential financial loss which can be significant when business organizations are SLA violators. Businesses being audited by the law enforcement authorities for use of unlicensed software results in:

- High penalties which are typically hundreds of times higher than the costs of licenses,
- Business operation disruption which may last not only during the auditing but may be extended until the licenses are purchased and fines paid, and
- Reduction of the customer base caused by the loss of the reputation, (Temporary loss of business services availability caused by the software audit and published news of business noncompliance with the law have negative marketing effects on the business market profile and position).

In situations described above, we state that individual end users should not be prose-
cuted whenever their financial capacity would not realistically make possible fine collection and alleged loss compensations. This should be a default rule when legal costs could exceed all realistic compensations. We are confident that impossible sales to realize with customers that are not capable of paying for the legal software license, are not sales at all and that alleged lost sales due to unlicensed software use in financially under privileged communities are not losses at all, but marketing expenses that as such could be applied against yearly income tax balance sheets as costs of doing business. We have numerous indicators that industry leaders such as Microsoft, Adobe and Apple allow use of their pirated software. The rational is that in order to expand the base of self trained future customers software licenses should be gifted to all willing to train themselves in using given software package. The larger number of self trained users would translate into the larger number of word-of-mouth software promoters at the place of their future employment. Users typically glorify those software packages that they may be the most familiar with. Our current investigations are oriented towards quantifying piracy as innovative marketing vehicle based on preplanned policy not to use strong technical means to prevent piracy.

5. CONCLUDING REMARKS

Software is one of the easiest products to “steal,” reproduce and distribute for profit using e-commerce infrastructure. However, besides profiting from selling pirated software, numerous such software distributors tend to use modified pirated software to launch various cyber attacks. Cyber attacks launched by software pirates probably constitute the main deterrent against illegal software end use. According to the BSA study [10] the main reason why individual users avoid unlicensed software are potential security threats from malicious programs that may be installed with the illegally acquired software. As an extension of [10], our current study that will be presented elsewhere is dealing with the malware as software piracy prevention tool and as possible marketing vehicle used to promote new versions of extra exposed to cyber attacks current versions of software. Our preliminary evaluations point at Microsoft as the leader in exotic marketing practices such as piracy tolerance and benefiting from the cyber crime escalation to promote new products sales. It is indicative that any government attempt to mandate by law various piracy protection mechanisms was faced with the industry split and even open disagreements [11].

We are in agreement with the mentioned pro-piracy exotic marketing practices, in our notation labeled as shady marketing practices. To be more specific, counter piracy solutions that we propose are of a marketing type. We have very strong indicators of the validity of such solutions and their use by the leading companies in the software industrial complex, such as Microsoft, Adobe or Apple corporations.

Based on our findings the most effective solutions of the software piracy problem should be based on the marketing and presales policies. To mention just a few of the existing solutions and the solutions that we value, let us consider counter software piracy:

- Lower cost and larger market using customer friendly e-commerce. Potentially large market that Internet infrastructure facilitates provides an opportunity to sell and to educate much larger number of future users than it was possible before.
- Temporary licensing with further reduction of the software price by eliminating
permanent software license (“ownership license”), and replacing it by the per-use license and per-use pricing, i.e., by the introduction of charges in installments. e.g., with per month use charges. For instance, Microsoft charges as little as $5.00 for their Office product temporary monthly license, [12].

- Free license issued to all individual users from the third world country or poor neighborhoods tracked and identified by the GPS and statistical income level research.

REFERENCE


THE ASIAN BELL CURVE: IQ, EDUCATIONS AND INEQUALITY

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Abstract: In famous book, “The Bell Curve” from Richard Herrnstein and Charles Murray [1] was showed that in the United States there is a socioeconomic hierarchy of race and intelligence. They showed that whites are at the top of this hierarchy with the highest average IQ (103) and the highest socioeconomic status and earnings. Hispanics come next with an average IQ of 89 and intermediate socioeconomic status and earnings. Blacks come last with the lowest average IQ of 85 and the lowest socioeconomic status and earnings. They argued that the racial socioeconomic hierarchy is largely determined by differences in intelligence. IQ was consequence of education and will to be successful. Inequality is also link between educations and will to be successful. This paper present link between tree parameters: will, education and GDP.

Keywords: Asian countries, Education, Flynn effect, GDP per capita, IQ, IQ of nations

INTRODUCTION

The first attempt to measure the intelligence of man dating back to the late 19th century. Alfred Binet and Theodore Simon had several attempts of making an intelligence test - a success arrived in 1905. From this time, many methods are changed - lot of different tests for the assessment of intelligence and emotion were produced.

In the USA more than fifty years exist hypothesis that all races what living on her territory are not equally intelligent. After few trials, an idea that intelligence depends of social conditions (chryses, financial instability of countries) was born. In 1994, American psychologist Herrnstein and political scientist Murray published cult edition of the book with the title: “The Bell Curve”. [1] Its central argument is that human intelligence is substantially influenced by both inherited and environmental factors and is a better predictor of many personal dynamics, including financial income, job performance, chance of unwanted pregnancy, and involvement in crime than are an individual’s parental socioeconomic status, or education level. The book also argues that those with high intelligence, the “cognitive elite”,
are becoming separated from those of average and below-average intelligence, and that this is a dangerous social trend with the United States moving toward a more divided society similar to that in Latin America.

This book was base for further works. [2] [3] [4]. The book “The Bell Curve” was controversial, especially where the authors wrote about racial differences in intelligence and discussed the implications of those differences. The authors were reported throughout the popular press as arguing that these IQ differences are genetic. They wrote in chapter 13: “It seems highly likely to us that both genes and the environment have something to do with racial differences.” The introduction to the chapter more cautiously states, “The debate about whether and how much genes and environment have to do with ethnic differences remains unresolved.”

The book’s title comes from the bell-shaped normal distribution of intelligence quotient (IQ) scores in a population. Shortly after publication, many people rallied both in criticism and in defense of the book. A number of critical texts were written in response to the book. Book argues that: (i) Intelligence exists and is accurately measurable across racial, language, and national boundaries. Intelligence is one of, if not the most, important factors correlated to economic, social, and overall success in the United States, and its importance is increasing. (ii) Intelligence is largely (40% to 80%) heritable, (iii) No one has so far been able to manipulate IQ to a significant degree through changes in environmental factors—except for child adoption and that they conclude is not large in the long term—and in light of these failures, such approaches are becoming less promising (iv) The United States has been in denial of these facts. A better public understanding of the nature of intelligence and its social correlates is necessary to guide future policy decisions.

2. CLASSES OF IQ SCORES

Their evidence comes from an analysis of data compiled in the National Longitudinal Study of Youth (NLSY), a study conducted by the United States Department of Labor’s Bureau of Labor Statistics tracking thousands of Americans starting in the 1980s. All participants in the NLSY took the Armed Services Vocational Aptitude Battery (ASVAB), a battery of ten tests taken by all who apply for entry into the armed services. (Some had taken an IQ test in high school, and the median correlation of the Armed Forces Qualification Test (AFQT) scores and those IQ test scores was .81.) Participants were later evaluated for social and economic outcomes. In general, IQ/AFQT scores were a better predictor of life outcomes than social class background. Similarly, after statistically controlling for differences in IQ, many outcome differences between racial-ethnic groups disappeared. Therefore, basic categories are:

- Those who did not finish any school have IQ 40 and less
- Three years of finished school - IQ 50
- Four-seven years of finished school - IQ 60
- Eight years of finished school - IQ 75
- Twelve years of finished school - IQ 90
- Fifteen years of finished school - IQ 110
- Sixteen and more years of finished school - IQ 125
We know that none of us foes have financial support to finish high schools, but they have high IQ. However, opposite is also truth: many graduated students do not have IQ mentioned in previous paragraph.

As conclusion for this part:
- For calculation of IQ of nations we watching educational structure of citizens
- All countries does not have the same system of educations and census – so we have to recalculate system and to normalize to the mentioned parameterization UNESCO in his publication identify fifty educational systems around the globe, but they recalculated all fifty to eight - on upper list they add tree year school and post-highs school education which exists in many countries.

3. BASIC CRITERIA OF STUDY

In this study author take criteria what Herrnstein and Murray describe in their study, as well as other researchers. Data from Asian countries are shown. Basic characteristics of this research are:
- Not all Asian countries have results for year 2015. So results for 2012-2014 are used, and in some cases for 2011 and 2010.
- All education systems has to be modeled to equal schema proposed by UNESCO [5]
- It was noted that 31% of the population has completed eight grades of elementary school.
- With high school, we have up to 46.7% of the population.

In Table 1 are shown data for every mentioned category of population and calculated IQ coefficient.

4. RESULT OF IQ ANALYSIS OF NATIONS

In Lynn and Vatanen study from 2006 [4] there are few criteria for measuring and calculation of IQ of the nations. Only 119 countries are shown as one where IQ of nation is measured, and the rest are estimated using calculation on the base of three neighbor countries. In addition, results from PISA test and all other relevant tests are included.

We will compare our results with results in Table 4.1, chapter 4. Only 38 countries have better scores than fifteen measured in Table 1 in Asian countries, what represents 32.2%. Our 44 countries represent 37.25%. Practically, Asian countries are in second third of the world countries (this does not mean population because of 2.7 billion of citizens of China and India).

Second, countries with smaller number of citizens (10 million and less) can change their IQ of nation in 5-10 years, what is not possible in countries with larger number of citizens. Implication of this is that variation of +/- of 2 IQ points can be changed rapidly.
**Table 1.** Table of IQ of nations for Asian countries. (For Russian and Turkey are shown data for whole country)

<table>
<thead>
<tr>
<th>Country</th>
<th>No classes</th>
<th>1-3 education</th>
<th>4-7 education</th>
<th>8 yrs of education</th>
</tr>
</thead>
<tbody>
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<td>Bahrain [12]</td>
<td>66,636</td>
<td></td>
<td>102,573</td>
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</tr>
<tr>
<td>Cambodia [16]</td>
<td>3,487,853</td>
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<td>1,767,432</td>
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</tr>
<tr>
<td>China [17]</td>
<td>65,402,260</td>
<td>328,934,000</td>
<td>455,002,000</td>
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<tr>
<td>Cyprus [18]</td>
<td>14,677</td>
<td></td>
<td>137,114</td>
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<tr>
<td>Georgia [19]</td>
<td>13,472</td>
<td></td>
<td>950,256</td>
<td></td>
</tr>
<tr>
<td>Hong Kong [20]</td>
<td>459,654</td>
<td></td>
<td>1,028,248</td>
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<tr>
<td>India [21]</td>
<td>317,821,952</td>
<td>180,259,630</td>
<td>413,403,235</td>
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<tr>
<td>Indonesia [22]</td>
<td>17,447,472</td>
<td>14,583,991</td>
<td>106,286,045</td>
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<tr>
<td>Iran [23]</td>
<td>10,343,990</td>
<td>15,955,777</td>
<td>24,891,012</td>
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<tr>
<td>Iraq [24]</td>
<td>6,467,670</td>
<td>3,545,623</td>
<td>10,326,280</td>
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<td>Israel [25]</td>
<td>119,700</td>
<td>64,200</td>
<td>526,600</td>
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<tr>
<td>Japan [26]</td>
<td>3,198,033</td>
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<td>Jordan [27]</td>
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<td>322,322</td>
<td>862,857</td>
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<td>Kazakhstan [28]</td>
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<td>9,969,400</td>
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<td>Kuwait [31]</td>
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<td>442,936</td>
<td>136,842</td>
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</table>
### Table 1. Table of IQ of nations for Asian countries. (For Russian and Turkey are shown data for whole country)

<table>
<thead>
<tr>
<th></th>
<th>12 yrs of education</th>
<th>15 yrs of education</th>
<th>16 yrs of education</th>
<th>Total</th>
<th>Total number of citizens</th>
<th>IQ of nation</th>
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<td>5,903</td>
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<td>1,350,000</td>
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<td>2,817,861</td>
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<tr>
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<td>9,912</td>
<td>32,224</td>
<td>556,000</td>
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</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Country</th>
<th>No classes</th>
<th>1-3 education</th>
<th>4-7 education</th>
<th>8 yrs of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia [36]</td>
<td>1,991,271</td>
<td>248,957</td>
<td>352,150</td>
<td>14,958,703</td>
</tr>
<tr>
<td>Maldives [37]</td>
<td>3,202</td>
<td>25,800</td>
<td>37,438</td>
<td>3,909</td>
</tr>
<tr>
<td>Mongolia [38]</td>
<td>72,696</td>
<td>23,158</td>
<td>165,817</td>
<td>482,869</td>
</tr>
<tr>
<td>Myanmar [39]</td>
<td>3,528,601</td>
<td>8,181,613</td>
<td>5,718,948</td>
<td>13,280,879</td>
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<td>1,042,289</td>
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<td>7,469,052</td>
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</tbody>
</table>
Table 1. Table of IQ of nations for Asian countries. (For Russian and Turkey are shown data for whole country)

<table>
<thead>
<tr>
<th>Country No classes</th>
<th>12 yrs of education</th>
<th>15 yrs of education</th>
<th>16 yrs of education</th>
<th>Unknown</th>
<th>Total</th>
<th>Total number of citizens</th>
<th>IQ of nation</th>
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<tr>
<td>Malaysia [36]</td>
<td>1,991,271</td>
<td>248,957</td>
<td>352,150</td>
<td>14,958,703</td>
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<td>Maldives [37]</td>
<td>3,202</td>
<td>25,800</td>
<td>37,438</td>
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<td>Mongolia [38]</td>
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5. IQ AND GDP OF NATIONS

Asia is full of contrasts. We have countries rich with natural resources (such are petrol and gas) in Middle East, with and without touristic resources (Dubai, Malaysia), industrial resources (China, Israel, Japan, South Korea). Table 2 showing this link between GDP (PPP) and IQ of the nations.

6. CONCLUSION

Based on the research in this paper conclusion is:
- Education is important element of wealth of nations, as well as natural resources
- Battle for illiterate people in each country is concept of prosperity
- Concept of secondary and higher education is extremely important for Asian countries. Third and Fourth industrial revolutions and IT society will be just a dream in the mind of most of the Asian people on they will travel to other developed countries to work in ICT sector for example
- School system in all level of education has to be changed. Theory without practice in early life is less accepted in developing countries and largest multinational companies.
- Lynn and Vatennen showing that developed countries increasing the level of IQ over the years, partly because of evolution in education system [4] [3] [2]
LITERATURE


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COMPUTER NETWORK SECURITY AND ITS FUTURE

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Abstract: Since computer network of an organization connects to other networks via the Internet, network security is one of the most important factors which must be taken into consideration because an attack on any organization network can be undertaken both from inside and from outside the organization. That is the reason that computer network security is very important to prevent and protect the organization from attacks. The purpose of this research is to predict the future of computer network security for the period of next 5 years (2015-2020) with the use of Delphi technique, a widely used and accepted method for achieving convergence of opinion regarding real-world knowledge from experts in this field. The research result can be used to improve and develop computer network security including staff, hardware, software and privacy system.

Keywords: Network, Security, Trend, Delphi technique

1. CURRENT SITUATION OF OUR COMPUTER NETWORK SECURITY

1.1. The idea of a computer network security

The computer network security of which we are talking about is actually network security, significant data in the system of network and the structural components of the network. Achieving security of computer network actually means protecting user data and computer systems from attacks and data theft out of computer network. People who work on protection of computer networks are engineers of technical and material safety analysis of computer system. They protect the system of the network from problems related to computer security that could affect computer’s security of individual users, such as theft, crash or interfere with the operation of the system and so on.
1.2. Current situation regarding to the development of computer network security

Today, computers are popularized and represent necessary part of life of every man. People use the technology of communication through computer networks to communicate with their friends, in order to complete certain tasks in order to learn something new, or simply to have fun. The development of computer technology is changing the way people live and improves their quality of life. Yet, the security of the computer system still worries people. For China and the rest of the world it represents a serious problem. There are many experts in security of computer systems that implement serious research of security of computer system. They conduct special research for maintenance, destruction and repair of the security system of computer networks. Based on these studies, experts have built PPDRR model of computer network security.

Designing the security of computer networks involves in itself a wide range of specialties. Any profession which implies knowledge of computers could participate in this. For example, the creation and development of computer software, control and maintenance of software, could benefit from the protection afforded by the security of computer networks. Protection of security of computer networks can provide protection for developed technology and prevent economic losses. Therefore, many experts in the field of security computer system work on the creation, protection and research in the field of computer security system of computer networks, hoping to find an effective way of ensuring the security of computer networks or a way that would help to investigate and discover the striker of system computer network. Through numerous studies, experts have proposed a new method of analysis of security networks - “tree invader.” Experts integrate information on past attacks and expresses them using mathematical formulas. This type of method is called “the tree of the attackers.” However, this method still has some flaws and there are disagreements related to integrating and explaining the “sheets”. Therefore, certain researchers have suggested so called. “graph privilege”, a method of analysis which should improve all the previous methods and analysis of security of computer networks. The development of technology has led to constant innovation in the field of analysis method of computer network security. Building a computer network security system was also constantly developing. However, there was no specific method of analysis and model that could solve all the problems related to the security of computer networks. But scientific research in this field continues. People are still working on a model of computer network security.

In the last few years, most of the organizations have built a computer network they use every day. This is called local network which provides access service to members of the organization. Significant application that in this network is used is the Internet that connects all users within organization who can work together on that way. Moreover, the schedule of work within a team, called the Working Group, plays a very important role; each team has its own information system and server that contains important information. Work on the level of working group has goal to bring together specific groups such as, for example, team for sales, accounting, manufacturing, finance, etc. Intranet, or internal network includes all these groups together as an organization’s private network used for sharing and exchange of information, something we call the online process work. However, the scope of the network is not limited only to the organization. Almost all organizations connect their internal network to the Internet so they would be able to cooperate with other organizations which
represent a way of improving the impact speed and convenience of work. Many organizations have their own websites in order to promote their products and services. Orders and providing services after sales will receive and send directly over the network.

Currently, many computer users erroneously believe that wall protection (so-called “firewall”) can 100% protect network system, but, in fact it is not sufficient. [1]. For example, the administrator puts or sets the “rules of the firewall” to block access to web servers by allowing connection on port 80. This can prevent a problem on the network when hackers try to attack the ports 139 or 445. But if a hacker tries to attack a web application using port 80, and there is so-called vulnerability, he can attack the web server and wall protection or “firewall” would not receive any warning that is displayed to users. Therefore, SOU (Intrusion Detection System) is proposed as a kind of alarm. It will display a warning when it detects an attempt of attack on computer network. Other SOU called SOSU (system for intrusion detection and prevention attacks) or OSU (detection and prevention attacks) is a device used for the simultaneous detection of multiple attacks on computer networks by monitoring and analyzing network traffic. This study uses the Delphi technique [2-7], the scientific method for collecting information from the group of experts, which many people are trying to study and analyze the collected knowledge so they could predict the future in different areas, especially in science. Science and technology are constantly changing. Research by using the Delphi technique is considered to be the future science (Futurism), by putting emphasis on detailed research in order to gain a better knowledge and understanding of the future. In addition, it can alert the user to unpredictable things that can happen in the future.

The purpose of the research is to predict the expected future and to seek ways to prevent, control and improve so that we could be able to respond to future needs appropriately. In this paper, the Delphi technique was used to predict future trends in the areas of security network of the organization over the next 5 years (2015-2020). This research uses the questionnaire in order to investigate the opinions of experts in the field of computer network security organization.

2. RESEARCH METHODOLOGY

Steps in the methodology of the survey are shown in Picture 1. Delphi technique was used to explore the security of computer network of the organization over the next 5 years. We started by examining and gathering information about the safety of computer network of organization and of the Delphi technique too. Next step is implemented in a manner which is described in following text.

2.1. Research procedure

This research focuses on future trends in the field of computer network security organization in the next 5 years (2015-2020) using the Delphi technique. Future trend involves collecting thoughts of experts in the field of computer network security organizations using statistical approaches. The research methodology uses the Delphi technique presenting a form of research, to explore future trends together with experts that can provide worthy and reliable information. Three sets of the questionnaire were carried out in the way described in part 2.2.
Qualifications of experts - these people has knowledge, they are known and have experience of at least five years in the area of security of computer networks. Each expert will respond individually to 3 sets of questionnaires. We selected 17 experts in field of computer network security organizations, as a sample and they are divided into two groups:
1. Eight experts from government agencies and state enterprises
2. Nine experts from private companies

Picture. 1. Research procedure.

2.2. Questionnaires

In this section we develop a questionnaires that was used as a research tool and they are divided into the following three steps: In the first questionnaire which is open type, it has been opened the issue of security of computer network of the organization for a period
of 5 years (2015-2020). The questionnaire was divided into two parts, the first part of the question is about the problem of computer network security organizations in today’s market, and in the second is the question of security of computer network of the organizations over the next 5 years (2015-2020). Next, we take the data from the first series of questionnaires by assessing direction of response of every individual expert on the questions from task so that we can evaluate whether their answers are moving in the same direction. If we have right answer, the question from the questionnaire would be included in the questionnaire of closed type. Then, the experts respond to individual sentences from the questionnaire with one of five possible answers or stands: 5: “strongly agree”, 4: “I agree”, 3: “I’m not sure,” 2: “I do not agree” and 1 “in general I do not agree”, so that we could discover their views.

Then we calculate the middle value and ranges between quarters. After that, the third series of questionnaires will also be in the form of closed questionnaires in order to select those answers of experts that are designated with five points where the definition is the same as in the previous survey but middle values and medium ranges between quarters are added. The purpose of this is that groups of experts compare and validate their positions from the questionnaires given in the second series. Processing of these data give us a range between the quarters 0-1, indicating the accuracy of results which led to the final processing of data in order to obtain the final results.

SURVEY RESULTS

The research results can be summarized as follows:

3.1. Security of computer networks in the organization today

Today, every organization focuses on technology rather than on process or network security policy management within the organization. The result is that network security is not efficient. Most of organizations are careless when it comes to personnel responsible for the security of the computer network of the organization. Therefore, the employees in the organization do not comply with safety rules completely. Therefore, the security of computer networks in the organization is ineffective and inefficient. The security of computer networks can prevent at a certain level, but insufficient, the emergence of damage and that should be improved in the future and in many parts. The price of the equipment used for the safety of computer networks is too high. Therefore, it is difficult to reconcile the budget and resource estimation. Some managers will hesitate to install safety devices for computer networks, regardless of whether the security of computer networks is their focus or not. Each organization will often focus on pre operation and effect of the computer network in the organization than on its security. The real picture of computer network security depends on the ability of the staff responsible for the network in the organization. There is no dedicated staff working only on the security of computer network in an organization. Segregation of duties, understanding and making decisions of staff are really confusing. The result of all this is the fact that the security of computer networks in the organization today is ineffective.
3.2. Future of security of computer network in the organization over the next 5 years

Security of computer network in the organization should have a clear policy and sanctions. Moreover, all personnel in the organization should be strictly observed with that. The fact that there is widely accepted standard can be used to check and validating the security of computer networks. Persons who works on the security of computer networks in an organization should be experts knowing how to perform their duties and they should have the appropriate certificates of knowledge related to computer network security in the organization, which would be gained with exam of the appropriate test in front of an organization responsible for the global standard in the field of security. Devices that are used in computer network security in an organization should be of high quality having a high level of performance, and reasonable prices too. Besides that, they should be supporting the centralization of management so that they can be controlled and that they can be managed centrally, which includes an overview in real-time and efficient compatibility with other devices. They should also check that unusual movements in real-time in terms of access or text on a variety of systems or equipment, and to provide support for any security protocol related to the security of the computer network of the organization.

The software or program that is in a function of the security of computer networks in the organization and software which is used in the network should be able to check their operations and to be support of security of computer networks in an organization compatible with any other devices or software which serve the security of computer networks. They should be also supportive of the central management system and they should always increase efficiency on a high level being modern too. Besides, the price of hardware or equipment should be reasonable. Policy effectiveness of system in the organization should include a login (JP) and it should be at a high level, stable, fast and safe. Last but not least, is that at any moment it must comply with applicable laws of computers and being modern and not outdated.

4. CONCLUSION

In this study, we use the Delphi technique in order to predict the future of security of computer networks for the period of next 5 years (2015-2020). Questionnaires were three series including open and closed questionnaire, which was used to collect the opinions and stands of a group of experts. Results show the security of computer networks of today and for the next 5 years (2015-2020). In conclusion, the results showed the importance of staff, hardware, software and privacy, which is all significant to anyone who is concerned about network security. This will allow managing and control of important aspects for contentment of future needs and security problems related to the computer network of the organization.
5. REFERENCES


ANALYSIS OF THE STRUCTURE OF FOREIGN TRADE IN GOODS BY TENOR OF TECHNOLOGY, THE CASE OF ODESSA REGION, UKRAINE

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Abstract: The analysis of gross regional product of Odessa region (Ukraine) for 2007–2014 is made by current and fixed prices, the structure of the region’s foreign trade is studied by amount, tenor of technology and selected commodity codes. Peculiarities in the dynamics of change in the export-import ratio are revealed for the whole nomenclature of goods and for products manufactured in industries classified in 3rd, 4th and 5th tenor of technology. Measures to intensify investment- and innovation-based development of the regional economy are proposed, for industry optimization and effective restructuring of the regional economy and foreign trade in industrial goods.

Keywords: globalization, foreign trade, structural change in exports and imports, economic restructuring, investment- and innovation-based development, tenor of technology, export-import ratio, regional economy.

Problem setting. The global economy at the current phase of its development features globalization challenges, intensified transformation of knowledge, advanced R&D and technologies in products and services with high added value, the striving to gain competitive advantages at global markets, the enhancing competition at country and company level and the increasing scopes of international trade in goods.

The abovementioned raises the importance of methodological elaborations and improvements for analyzing export capacities in regions, dynamics and shares of exports and imports of goods by type and tenor of technology (TT), import substitution to attain positive trade balance, and use of these methodologies in studies of foreign economic activities in regions and their contribution in the international trade of the respective countries.

Literature review. Scopes and problems of foreign trade in high tech products have been subject to comprehensive studies by Ukrainian researchers. It a latest one [1] it is argued that innovation and investment policy needs to focus on the model of “leading development”, whereas the enhancement of the effectiveness of foreign trade transactions in
Ukraine is conditional on structural transformations in the economy, which, apart from legal, organizational and institutional framework, would require adequate amount of investment.

Analysis of the Ukrainian foreign trade, made in [2], reveals low competitiveness of the Ukrainian manufacturers at global markets, which prevents Ukraine from being an equal and fair partner in global trade. Also, the goods that are highly demanded at external markets, such as selected categories of goods manufactured in the metallurgy sector, fail to conform to the international standards. The structure of economy and high tech exports in Ukraine and Serbia in comparison with other countries is studied in [3]. Structural analysis of the Ukrainian exports in 2007–2011 is made by TT. It is shown that elaboration and implementation of strategies focused at building and development of regional innovation clusters should be an important step aiming to intensify structural change in the economy and the industry of transitional countries.

**Objective** of the article is to analyze the gross regional product (GRP) of Odessa region in 2007–2014 by current and fixed prices, to study the dynamics of change in the foreign trade in goods by TT, with defining export and import quotas and export-import ratios by TT, to compare exports in Odessa and Kharkov regions, and to formulate regional policy measures promoting the advanced structure of exports and enhancing the export capacity of the region.

**Results.** Odessa region is a highly developed region of Ukraine with heavy industrial and R&D capacities, effective agrarian sector, good potentials for the sustained economic growth and enhancement of living standards. The GRP in reported prices grew in 2007–2013 from 33116 million UAH to 69760 million UAH (or 2.11 times), which may seem an evidence of a positive economic trend in the region. Yet, once GRP is re-estimated in fixed prices of 2005 with use of deflation index for GRP, another trend occurs. In 2013, GRP amounted to only 23315 million UAH, being even slightly lower than in 2007 (23503.3 million UAH), which is an evidence of deep and chronic stagnation rather than stability of reproduction processes in the regional economy. Change did not occur in 2014, as GRP in Odessa region, according to our estimations, made 23641.9 million UAH in fixed prices, corresponding to the figure of 2007.

In 2013, Odessa region, with the total population of 2395.2 thousand and 5.1% of economically active population in Ukraine, accounted for 4.6% of the national GRP, which was lower than in 2010 (5.0%), and for 2.2% of industrial sales, which was lower than in 2010 (2.9%). The region has enterprises in mechanical engineering and metal work, chemical products and oil refinery, foods and beverages, consumer goods and other industries. As of 2013, the regional industry employed 94.4 thousand persons or 9% of the total regional employment, which was lower than in 2011 (106.5 thousand or 10.2%).

The best developed sector within mechanical engineering is machine-tools, with enterprises manufacturing metal cutting tools, blacksmith and press equipment, and road construction machinery. Other manufacturers in the region are instrument-making enterprises, of which the major ones are open joint stock companies “Electronmash” and “Tochmash”, factories “Kinap” and “Ukrkabel”. Although many enterprises do not work on full capacity now due to the crisis, production capacities in nearly all of them could nevertheless be preserved.

In 2013, sales of innovation products that were new for market made 551.55 million
UAH, which was 10.7% higher than in 2012 (498.13 million UAH). Yet, exports of such products made only 114.47 million UAH, which was 17.5% lower than in 2012 (158.646 million UAH).

To estimate exports and imports of the products classified in the 5th TT, 4th TT and 3rd TT, we used recommendations given in [4] on harmonization of the classification of technological capacity of commodities by OECD methodology for manufacturing with data of the Ukrainian Classification of Commodities for Foreign Trade Activities. As a result, 5th TT (the first level of technological capacity) includes the commodity groups with the following codes: 85 – Electric machines and equipment; 90 – Devices and apparatus; 30 – Pharmaceutical products; 88 – Space navigation devices; 91 – Watches; 37 – Goods for Photography and Filming; 92 – music instruments. 3rd TT includes commodities originating from the industries with medium and low technologies: basic metals and products made thereof, mineral fuels, ores, non-organic chemical products, rubber products etc.; and the commodities originating from the industries with low technologies: crops, fruits of oil plants, fats and oils, foods, alcoholic and non-alcoholic drinks, wood and products made thereof, paper, cardboard etc. The estimated data for the regional exports are shown in Table 1.

### Table 1. Exports from Odessa region and structure of exports by TT

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRP, million UAH, current prices</td>
<td>33116</td>
<td>46994</td>
<td>48647</td>
<td>53878</td>
<td>61499</td>
<td>64743</td>
<td>69760</td>
</tr>
<tr>
<td>GRP share in the total, %</td>
<td>4.6</td>
<td>5.0</td>
<td>5.3</td>
<td>5.0</td>
<td>4.7</td>
<td>4.4</td>
<td>4.6</td>
</tr>
<tr>
<td>GRP, million UAH (prices of 2005)</td>
<td>23503.3</td>
<td>25949.2</td>
<td>23765.0</td>
<td>23153.4</td>
<td>23315.3</td>
<td>22574.3</td>
<td>233155</td>
</tr>
<tr>
<td>Exports of goods, million USD</td>
<td>1098.5</td>
<td>2314.9</td>
<td>1445.2</td>
<td>1684.4</td>
<td>1541.1</td>
<td>1804.3</td>
<td>1628.4</td>
</tr>
<tr>
<td>Share of exports in the total Ukrainian exports, %</td>
<td>2.234</td>
<td>3.457</td>
<td>3.641</td>
<td>3.277</td>
<td>2.253</td>
<td>2.593</td>
<td>2.572</td>
</tr>
<tr>
<td>Export quota of the region, %</td>
<td>16.79</td>
<td>26.83</td>
<td>23.16</td>
<td>24.81</td>
<td>19.93</td>
<td>22.03</td>
<td>18.66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exports structure by TT, %</th>
<th>3rd TT</th>
<th>4th TT</th>
<th>5th TT</th>
<th>4th TT and 5th TT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd TT</td>
<td>65.5</td>
<td>28.30</td>
<td>6.20</td>
<td>34.5</td>
</tr>
<tr>
<td>4th TT</td>
<td>76.74</td>
<td>20.69</td>
<td>2.57</td>
<td>23.26</td>
</tr>
<tr>
<td>5th TT</td>
<td>80.64</td>
<td>17.09</td>
<td>2.27</td>
<td>19.36</td>
</tr>
<tr>
<td>4th TT and 5th TT</td>
<td>81.51</td>
<td>15.63</td>
<td>2.86</td>
<td>18.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exports per 10,000 population, for 4th and 5th TT, USD</th>
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<tbody>
<tr>
<td>4th TT</td>
</tr>
<tr>
<td>5th TT</td>
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<tr>
<td>4th TT and 5th TT</td>
</tr>
</tbody>
</table>

Source: estimated by data of the Ukrainian State Statistics Service
Basically, the analysis for 2007–2014 shows the upward tendency in exports of goods, from 1101.4 million USD in 2007 to 1628.4 million USD in 2013 (1.48 times growth), and to 1780.1 million USD in 2014. The reduction in exports in 2010 compared with 2010 was caused by the stoppage of “Lukoil – Odessa NPZ” refinery company. At the same time, the share of regional exports in the total commodity exports of Ukraine featured minor change from 2.234% in 2007 to 2.572% in 2013. In the period of financial and economic crisis (2009 and 2010), exports of goods from Odessa region fell by 1.6 and 1.37 times, respectively, in comparison with 2008. In 2013, exports from the region fell by 8.8% compared with 2012. The regional tendency follows the national one: reduction of exports from 68.8 billion USD in 2012 to 63.32 billion USD in 2013, or by 8.1%. The measure of export quota has been constantly down since 2008, being an indication of the shrinking demand for products manufactured in Odessa region and the worsening conditions for exports-related activities in the region.

The largest exports of goods in the region and their essential growth are found for the products classified in 3rd TT. In the period under study, their sales increased from 721.41 million USD in 2007 to 1288.4 million USD in 2013 (or nearly 1.79 times) in parallel with their reducing share in the total regional exports (from 20.69% to 17.07%). However, exports of the products classified in 4th TT tended to fall from 478.99 million USD in 2008 to 277.91 million USD in 2013 (1.73 fold) in parallel with their reducing share in the total regional exports from 17.0% to 15.8%. The most considerable reduction in exports of the products classified in 4th TT was recorded in time of the financial and economic crisis, in 2009 (247.04 million USD), which is 1.94 times lower than in 2008 (478.99 million USD). Yet, the share of the products classified in 4th TT in the regional exports made 17.09% in 2009, which is 3.6% lower than in the previous year.

In 3rd TT, the top position by the amount of exports is taken by the products with code 31 (plastics, polymers), and the second position – by the products with code 84 (nuclear reactors, boilers, machines). From 2007 to 2017, exports of the former group grew 1.4 times, from 237.08 million USD to 332.1 million USD, whereas exports of the latter group fell from 47.66 million USD to 43.71 million USD.

In 2013, exports of goods classified in 5th TT made 61.95 million USD, which is 1.1 times less than in 2007 (68.27 million USD). The share of high tech exports in 2013 was only 3.8% compared with 6.2% in 2007. The largest share of exports in 5th TT was accounted for by the products with code 85 (electric machinery) and code 88 (aircraft). From 2007 to 2013, exports of the former category of goods were gradually up from 40.08 million USD to 46.15 million USD, whereas exports of the latter category, consisting of the advanced high tech products, fell 1.89 times, from 11.71 million USD to 6.2 million USD. Also, large exports of products with code 90 (optical and photography devices) and code 30 (pharmaceutical products) should be mentioned.

Cumulative exports of the goods classified in 4th and 5th TT grew from 379.99 million USD in 2007 to 475.92 million USD in 2012 (1.25 times), largely due to the growth in exports classified in 4th TT. The total regional exports grew by 9.3% in 2014 compared to the previous year, and made 1780.1 million USD.

An important criterion of the established favorable conditions for foreign economic activities, of the effective export capacities and the effective measures for enhancing exports at regional or country level can be exports of goods per 10.000 of population, which is used to
measure the effectiveness of exports-related activities in a region. In Odessa region, cumulative exports of goods classified in 4th and 5th TT per 10.000 of population made 1586.5 USD in 2007, which is 1.39 times lower than in Kharkov region (2227.9 USD per 10.000 of population) [5]. This gap between Odessa and Kharkov regions increased to 2.27 times in 2013.

Imports are important as a tool for finding solutions related with restructuring of national and regional economies, through closures of outdated production facilities and reallocating resources to more effective ones, and as a factor for enhancing competitiveness and stimuli for domestic manufacturers to upgrade the quality of products. In 2007–2013, regional imports grew from 2543.9 million USD to 3438.7 million USD (1.35 times). The share of regional imports in the total Ukrainian imports changed from 4.193% in 2007 to 4.467% in 2013, with the highest share of 5.795% recorded in 2010. In 2013, regional imports fell by 866.2 million USD compared with 2012; in 2014 they made 2078.6 million USD, which is 39.5% lower than in 2013. Hence, in 2014 Odessa region had the lowest imports over the period under study, even lower than in the crisis year of 2009 with imports worth 2600.8 million USD (Table 2).

| Table 2. Imports of goods in Odessa region and imports structure by TT |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|
| Indicator                | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   |
| Imports of goods in the region, million USD | 2543.9 | 4762.8 | 2600.8 | 3520.3 | 3145.4 | 4304.9 | 3438.7 |
| Share of the region’s imports in the total Ukrainian imports,% | 4.193  | 5.568  | 5.724  | 5.795  | 3.808  | 5.081  | 4.467  |
| Import quota of the region,% | 38.795 | 55.195 | 41.669 | 51.846 | 40.681 | 53.134 | 39.400 |
| Imports structure by TT,% |        |        |        |        |        |        |        |
| 3rd TT                   | 1481.64| 3051.45| 1840.13| 2595.6 | 2249.84| 2740.99| 2555.49|
| 4th TT                   | 857.33 | 1417.62| 559.39 | 683.32 | 653.95 | 640.72 | 682.58 |
| 5th TT                   | 204.93 | 293.73 | 201.29 | 241.38 | 241.6  | 923.19 | 200.62 |
| 4th TT and 5th TT        | 1062.26| 1711.35| 760.67 | 924.7  | 895.56 | 1563.91| 883.21 |
| Imports structure by TT,% |        |        |        |        |        |        |        |
| 3rd TT                   | 58.24  | 64.07  | 70.75  | 73.73  | 71.53  | 63.67  | 74.32  |
| 4th TT                   | 33.7   | 29.76  | 21.51  | 19.41  | 20.79  | 14.88  | 19.85  |
| 5th TT                   | 8.06   | 6.17   | 7.74   | 6.86   | 7.68   | 21.45  | 5.83   |
| 4th TT and 5th TT        | 41.76  | 35.93  | 29.25  | 26.27  | 28.47  | 36.33  | 25.68  |
| Imports of goods classified in 4th and 5th TT, per 10.000 of population |        |        |        |        |        |        |        |
| 4th TT                   | 3579.5 | 5923.0 | 2339.0 | 2859.3 | 2737.9 | 2678.9 | 2849.0 |
| 5th TT                   | 855.6  | 1227.2 | 841.6 | 1010.1 | 1011.5 | 3859.9 | 837.4  |
| 4th TT and 5th TT        | 4435.1 | 7150.2 | 3180.6 | 3869.4 | 3749.4 | 6538.8 | 3686.4 |

Source: estimated by data of the Ukrainian State Statistics Service
Annual regional imports of goods classified in 3rd TT, which made 1481.64 million USD in 2007 or 58.24 % of the total regional imports, grew only 1.72 times in 2013. Yet, their share in the imports of goods grew up to 74.32%. Imports of goods classified in 4th TT reduced from 857.33 million USD in 2007 to 682.58 million USD in 2013 (1.26 times), with their share reduced from 33.7% to 19.85%.

Of the imports classified in 4th TT, the top position by the amount of imports was with goods with code 87 (land transport vehicles, except for railway ones): 318.47 million USD in 2007; 170.77 million USD in 2012; and 157.78 million USD in 2013. The second position was with the goods with code 84 (nuclear reactors, boilers, machines): imports of these goods were gradually decreasing and made 313.81 million USD in 2007 and 230.59 million USD in 2013. The third position was with goods with code 39 (plastics, polymers), with the imports amounting to 152.41 million USD in 2007 and 142.39 million USD in 2013.

At the same time, imports of goods classified in 5th TT, which amounted to 204.93 million USD in 2007 and 200.62 million USD in 2013, underwent minor change, but the share of imports in this TT in the total imports fell from 8.06% to 5.83%. This evidences of inadequate use of the progressive mission of the imports of goods classified in 5th TT as a factor boosting the overall effectiveness of industrial production. In 2007, the cumulative share of imports of goods classified in 4th and 5th TT made 41.76%, being much higher than in 2013 due to reduced imports of goods classified in 4th TT.

The comparison of imports of goods per 10.000 of population in Odessa and Kharkov regions shows that the imports to Odessa region are much higher than to Kharkov region. For Odessa region, the cumulative imports of products classified in 4th and 5th TT made 4435.1 USD per 10.000 of population in 2007, which is 3.75 times higher than for Kharkov region with the imports worth 1183.25 USD per 10.000 of population. In 2013, the imports were 3.84 higher for Odessa region than for Kharkov region.

The analysis of change in exports-imports ratio (EIR) is shown in Table 3.

Table 3. Exports-imports ratio for the whole nomenclature of goods and by TT, 2007–2013

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
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<td>0.49</td>
<td>0.56</td>
<td>0.48</td>
<td>0.49</td>
<td>0.41</td>
<td>0.47</td>
</tr>
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<td>0.49</td>
<td>0.58</td>
<td>0.63</td>
<td>0.53</td>
<td>0.47</td>
<td>0.48</td>
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<td>0.62</td>
<td>0.41</td>
</tr>
<tr>
<td>5th TT</td>
<td>0.33</td>
<td>0.20</td>
<td>0.16</td>
<td>0.19</td>
<td>0.21</td>
<td>0.09</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Source: estimated by data of the Ukrainian State Statistics Service

For the products classified in 3rd TT EIR is higher than for the ones classified in 4th and 5th TT, which is an evidence of higher significance of foreign trade for attaining the region’s self-sufficiency on the commodity groups classified in 3rd TT. EIR for Odessa region is far lower than for Kharkov region, which equaled 0.74 in 2002 and 0.87 in 2013 for the whole nomenclature. The decreasing level of EIR for higher TTs is an evidence of weak attention paid in Odessa region to formation and development of technologies and industries classified in 4th and 5th TT.
The analyzed change in exports and imports of goods by TT, change of EIR and the considerable decrease in the ratios of exports of goods from Odessa region compared with Kharkov region shows that Odessa region tends to preserve the structure of exports dominated by goods with low added value and has obvious barriers for innovating and innovations. As a result, Odessa region has limited capacities to solve the problems related with industry optimization and essential growth of industrial output that would be competitive at domestic and global markets, diversification of the regional economy through enhancing exports of goods classified in 4th and 5th TT or launching manufacturing and exports of products classified in 6th TT.

It should be mentioned that Odessa region has already elaborated program documents on social and economic development in the region. The draft Strategy for economic and social development of Odessa region till 2015 includes the section “Industry Modernization. Development of High Technology Industries” aiming at “building up the integral ‘industry – science – technology’ complex capable to develop and support internal needs, manufacture competitive goods for exports and increase the output of high tech industrial products” [6]. The analysis shows that the aim is unlikely to be achieved. According to “Strategy of Economic and Social Development of the Odessa City till 2022”, intensive development of economic activities based on innovation, comprehensive modernization of fixed assets at innovating enterprises and gradual transition of the industry to the new technological level is envisaged not earlier than at the third phase of the Strategy implementation (2019–2022) [7]. We, however, believe that manufacturing of products classified in 5th and 6th TT needs to be boosted just now. Also, a report of the director of Public Enterprise “Ukrpromzovnish-expertyza” comes to mind, where the priorities of Odessa region ranked as follows: agriculture, food industry and processing of agricultural products, sea ports, chemical industry, mechanical engineering, tourism and resorts [8]. We believe that the top priority needs to be assigned to development of mechanical engineering and industries classified in 5th and 6th TT.

Growth in exports-related activities is conditional on intensification of innovating at industrial enterprises of Odessa region. Unfortunately, by innovating Odessa region lags behind more advanced regions of Ukraine. In 2013, innovating enterprises in the region numbered 69 (17.6% of the total), which is higher than in 2014 (67 enterprises or 16.8%). In Ukraine, the share of innovating enterprises was 16.8% in 2013 and 16.1% in 2014. Their innovation-related expenditures amounted to 323.9 million UAH, including 321.5 million UAH (99.3% of the total expenditures) spent for purchase of machinery, equipment and software, 960.6 thousand UAH (0.3%) for internal and external R&D, 1.5 million UAH (0.5%) for other purposes.

Unfortunately, the main investors in innovation are enterprises themselves, with 320.6 million UAH of investment (99.0% of the total expenditures for innovation). Due to limited investment in 2014, innovations were being introduced at only 39 innovating enterprises (9.8% of the total number). During 2014, the new technological processes introduced in the region numbered 30, including 11 resource saving or alternative technologies; 82 types of innovation products were launched.

The revealed tendencies and structure of foreign trade in Odessa region give evidence on inadequate use of direct and indirect methods of the regional policy aiming at creating favorable conditions for investment- and innovation-driven development of the region, at
building up the effective structure of industry and exports of goods, enhancement of labor productivity in the region.

The issue of economic restructuring and restructuring of exports and imports of goods at national and regional level has been even more urging due to the following reasons: economic degradation in Ukraine in 2014 (nearly 7% decline in GDP, 10.1% decline in industrial production, nearly 20% decline in exports of goods and services); mass-scale troubles in the economy in 2015 due to warfare in the East and the related negative factors; enforcement, on April 24, 2014, of EU preferences enabling Ukrainian producers to export to EU countries without paying custom duties; rapid shrinkage of exports to Russia. The main methods of structural policy in Ukraine and is regions should be: abandonment of development strategies relying on extracting and low technology sectors, state targeted programs and investment, accelerated development of high tech industries, institutional transformations, introduction of resource saving technologies, diversification of exports and leading growth in exports of goods classified in 5th and 6th TT.

Conclusions. The effective structural change in exports and imports of goods in Odessa region can occur once reforms and programs are implemented with respect to building regional infrastructure and regional innovation clusters, enhancement of investment attractiveness of the region, implementation of public procurement policy for high tech products, setting up public and private partnerships in innovative industries, motivation of business sector towards innovating through optimization of taxation policy to have tax burden relieved at all the phases of innovation process. It is important to elaborate and implement measures aiming at interactions between public research organizations and public HEEs, on the one hand, and industrial enterprises, on the other, for promoting advanced technologies to industry, establishing national and regional innovation funds by raising government and business investment on parity basis, implementation of advanced mechanisms for venture investment, more extensive participation of transnational high tech companies in the regional economy etc. Setting up and implementation of the state policy of structural change at national and regional level are important drivers of the effective restructuring of exports in Odessa region.

REFERENCES:


FACTORS OF THE POPULATION DYNAMICS OF THE RUSSIAN NORTH*

Viktor Fauzer

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Abstract: The main source of the population of the Russian North until the end of the 1980 was the influx of the population migration. Young migrants composition provides a high natural population growth. Two positive components given rapid population growth of almost all regions of the Russian North. However, the 1990 the situation changed radically. The population began to leave their homes and go to their "ethnic" homeland. At the same time at the state level are discussed issues of further development of natural resources of the Russian North. This was especially true with the introduction of our country against economic sanctions. It is understood that the implementation of the strategic objectives is not possible without the effective use of human resources of the territory and bringing the works are new resources. The subject of this article is the ability to change the migration situation for the better are and attraction of new resources of work. The work was based on the data of current statistics and population censuses. It has done the basic conclusion that the Russian North needs economically reasonable state social policy directed to attraction and fixing of the population in northern subjects of Russia. Efficiency of migration policy will depend on that, how actively regional authorities and business community will take part in development of the territories.

Keywords: migration, population, Russian northern regions.

INTRODUCTION

The Russian North is responsible for 11 million sq. km of 17,1 million sq. km of Russia's area (or about 2/3 of the whole territory). Ten million and five thousand people, or 6,8% of the Russia's population live there. The area of the territory which is fully attributable to the Far North and areas equated to them is 7,6 million sq. km, or 44,5% of Russia's area. Seven million and 874 thousand people, or 5,4% of the population of Russia live there. The population density of the Russian North is 1 person per sq. km, of the European North – 2,59, and of the Asian North – 0,70.
The territory of North concentrates 80% of all stocks of Russia’s minerals, including 93% of gas, 90% of diamonds and platinum, 83% of silver, 72% of oil and gas condensate, 63% of gold, 43% of coal. It is produces more than 20% of GDP, 18% of electricity, 25% of forest products, more than 90% of the natural gas, 75% of oil, 80% of gold and 90% of nickel copper, almost all diamonds, cobalt, platinum group metals, apatite concentrate [2, p. 19-25]. The share of income from the use of the mineral resource base of the North in federal budget is more than 40% and the share of foreign exchange earnings - 80%.

In order to maintain the contribution of the North in the country’s economy at a proper level, it is necessary to have a sufficient population. In recent decades, the number was determined more than ever before, migration processes.

In the dynamics of socio-economic development the special role belongs to migration. In the beginning of the XXI century the concept of migration had many definitions. In Russia some scientists believe that migration should be a kind of territorial movement, i.e. resettlement. People should move between different localities and their movements necessarily accompanied by a change of place of residence.

There is also an extended interpretation of migration: «any territorial movement that takes place between the various localities of one or more administrative-territorial units, irrespective of the duration, regularity and targeting» [1, p. 26].

In sociology and demography, most scientists identified three types of population movement: social, natural and migrational. Each type of population movement deserves its consideration. Based on the purpose of the article, we consider only the migratory movement, applying a narrow approach.

It should be noted, however, that since the early 1990s the extent and intensity of the internal migration in all directions had been decreased. There has been a more than twofold reduction of internal migrations. With the reduction of the intensity of internal migration in the country as a whole, in the northern regions it has increased. This led to the fact that from the northern regions the population began to move in the middle and southern part of the country (in 1990 the share of the northern regions within the Russian Federation was 6,6% in 2015 – 5,5%) .

In terms of governance of northern regions it was suggested that according to the resettlement program from the North will leave only the population that has reached its workforce, or has health problems and according to doctors’ recommendations should live in the best climatic conditions. But practice has shown negative results. For example, if in 1989 the share of persons of retirement age in the northern regions was 8,9%, in 2010 already 15,9%. In Russia this indicator was respectively 18.5% and 22.2%. As you can see, aging in the northern regions is more rapid than in the country as a whole.

DEMOGRAPHIC POTENTIAL OF THE NORTHERN REGIONS OF RUSSIA

There is no doubt that in the north of the country it is necessary to have the demographic and labor potential to provide the necessary level of development of regional economies to satisfy the needs of the country in the strategic resources, such as hydrocarbon feedstock, gold, diamonds and others [2, p. 25]. North must have the number of the population that provides the minimum population and population density, which does not allow neighboring states to claim his territory (population density, persons per 1 sq km is on Russia – 8,5
and in the North – 1,0). In the period under review (1990-2015) the population of the Russian Arctic has decreased from 9731 to 7874 thousand people (Table 1).

**Table 1. Population of the northern Russian regions in 1990-2015, thousand people**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<td>314</td>
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<td>96</td>
<td>61</td>
<td>52</td>
<td>51</td>
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</table>

The population of the northern regions is organically linked with the processes of birth and death rates. During the 1990-2014 in the North was born 2.6 million children, including the European North – 1.1 million children and the Asian North – 1.5 million children. During the same period the number of deaths amounted to 2.3 million people, including the European North – 1.3 million people and the Asian North – 1.0 million people. The increase in fertility and decline in mortality provided in generally positive natural increase in 299 thousand people, including the Asian North – 575 thousand people. While in the European North excess of deaths over births secured him the natural decrease in 276 thousand people.

However, the determining factor in the formation of the population of the northern territories are migrations (Table 2).
Table 2. Increase (decrease) of the population of the northern regions of Russia in 1991-2014, persons*

<table>
<thead>
<tr>
<th>Regions</th>
<th>Period</th>
<th>Increase (decrease)</th>
<th>The average annual increase (decrease)</th>
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<td></td>
<td>2011-2014</td>
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</table>

* - without Crimean federal district

European and Asian North are characterized by a negative migration dynamics. In 1991-2014 all regions of the European North had natural and migratory population decline. With the exception of the Yamal-Nenets Autonomous Area, which had a positive natural growth. In 2011-2014, in the Komi Republic and the Murmansk Region there were growth in the number of births and a reduction in the number of deaths. It was affected that in fertile age there were numerous generations of women which were born in 1980s and also introduction of new measures of the state support of families with children. All regions of the Asian North, in addition to the Khanty-Mansi Autonomous Area had a negative mechanical growth (Table. 3).
Table 3. Increase (decrease) of the components of the population change of the northern regions, in 1991-2014, persons

<table>
<thead>
<tr>
<th>Regions</th>
<th>Increase (decrease)</th>
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The Russian North, having a negative migration balance with almost all regions of Russia, began to have a positive migration increase with countries near and far abroad (in total) since 2005. A special place in migration growth occupy the countries of Central Asia and the Caucasus. With them, the Russian North has a positive growth since 2004. The situation began to change in 2012. So if the migration gain in 2011 was 17503 persons, in 2012 already – 13077 persons. This is partly explained by the fact that Russia has become less attractive in terms of migration for some countries.

Despite of negative dynamic, migrations contribute on the North young age structure (Table 4).
Table 4. The age structure of migrants of northern regions of Russia in 2005 and 2014,

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CONCLUSION

The following material convinces us that the northern territory of Russia needs special social and economic policy. First of all it is necessary to solve the problem of migration outflow adapted to the harsh northern conditions. Those elements should offer encouragement that will make the North attractive to young people and people of working age. It is necessary to find ways of demographic policy, which will stimulate the families to have two or three children.

By reducing their own demographic base providing expanded reproduction of the population, it is necessary to consider the mechanism of substitution of the retired population. We can offer shift method, as a tool to address the issues of staffing organizations located
in areas of the North and the Arctic. The only thing on that should pay attention is a shift method, which should become an indispensable element in the northern state policy. Also it is necessary to revise cooperation with the states of the northern regions of Central Asia and the Caucasus.

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REFERENCES:

BUSINESS SUCCESS INDICATORS IN BANKING
THE CASE OF RAFFEISEN BANK INTERNATIONAL (RBI)

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Abstract: For the international economy one of the basic assumptions of the organization and the business success is the existence of financial institutions i.e. presence of banks which allows for confrontation of supply and demand in the sphere of finance. Banks collect and place funds, perform payment transactions within the country and between the various operators in other countries, provide guarantees, provide loans, carry out various forms of financing by stimulating exports, determine exchange rates, provide the level and extent of liquidity with foreign countries and carry out many other important affairs. The main objective of this paper is to show the net balance-sheet assets, the net profit before tax and return on equity.

Keywords: net balance sheet assets, net income, rate of return, credit and debit cards, electronic banking.

1. BASIC BUSINESS SUCCESS INDICATORS IN BANKING

Net balance sheet assets are things that banks own and one of the main indicators of the size of the bank. Balance sheet assets (CNN Money, 2013) are:
- Due and undue short-term and long-term loans;
- Deposits with banks;
- Interest and fees;
- Long-term and short-term securities held to maturity and securities available for sale;
- Participation of the bank in other legal entities;
- Assets acquired through collection of receivables;
- Cash in hand, funds in bank accounts, gold and other precious metals;
- Receivables from states and central banks, territorial autonomy and local self-government, public administration bodies, international development banks and international organizations;
- Fixed assets, investment property and intangible assets;
- Unpaid subscribed share capital;
- Supplies;
- Other balance sheet assets.

The main indicator of the operating performance of banks is net profit as the difference between profit before tax and profit tax. This is the indicator of operating performance of the bank. It should be borne in mind that net profit is the absolute indicator which does not take account of the size and scope of the bank’s capital employed. For this reason, it is difficult to use this indicator to make comparisons of performance of banks of different sizes, as shown in the tables (Semi-annual report on the operations of the RBI, 2015) - Ranking of banks by net assets and profit before tax:

Based on the above, we make the following comment:
- At the end of the second quarter of 2015, Raiffeisen Bank achieved a market share of 7.7% of the total assets of the banking sector and holds fourth position. Compared to the same period of the previous year, the Bank realized a profit of RSD 0.2 billion and holds second place in the overall banking sector.
- The position of Raiffeisen Bank - compared to the rest of the banking sector on the basis of the report for the second quarter of 2015, the Bank ranked second by net placements and fourth place in terms of the amount of total deposits.

Often for the comparison of performance between banks we use the rate of return on assets (ROA - return on asset). ROA represents return on invested capital which is obtained when as the numerator we use some of the variables that reflect the return, such as net and gross earnings, and divide it by the value of total assets. ROA is an indicator of the profitability of the property, where the ROA ratio below 0.5% is the low profitability of bank assets, i.e. it suggests that the bank is inefficient.

ROA indicator in the range of:
- 0.5% to 1% shows average profitability of a bank’s assets
- 1% to 2% shows profitable assets of the bank
- 2% to 2.5% means highly profitable assets of banks
- Over 2.5% represents cartelization of banking market: high-risk portfolio of the bank, or some special event, e.g. sale of a building owned by the bank.

Although ROA provides useful information about the profitability of banks, we have already seen that this was not what interests owners. They are more interested in profits realized by their capital, which is shown by the rate of return on equity (ROE). ROE = (PROFIT (LOSS)) / NET ASSETS.
2. SHORT REVIEW OF RAFFEISEN BANK INTERNATIONAL

The headquarters of Raiffeisen Bank International are in Vienna, Austria. Raiffeisen Bank International AG (RBI) is one of the most important institutions that offers commercial and investment banking services in Austria and a leading universal bank in Central and Eastern Europe. It was established as the result of the merging of separate business branches of Raiffeisen Zentralbank Österreich AG (RZB) with Raiffeisen International Bank-Holding AG. The transaction was legally completed in October 2010. RBI is a fully-consolidated subsidiary of RZB, holding 78.5% of the common shares of the Bank. The remainder is in free float, the shares are listed on the Vienna Stock Exchange.
In Western Europe and the US, RBI manages its branch in London and representative offices in Brussels, Frankfurt, Madrid, Milan, Paris, Stockholm and New York. A finance company in New York (with representative offices in Chicago and Houston) and a branch bank in Malta complement the scope of the bank’s presence. In Asia, the second geographical area of focus, RBI operates branches in Beijing (with representative offices in Ho Chi Minh City, Hong Kong, Mumbai and Seoul). Such a strong presence clearly underlines the Group’s orientation towards emerging markets.

In addition to its banking operations, RBI operates several specialist companies in CE Europe that offer solutions in a wide range of areas, including mergers and acquisitions, investments in equity securities, real estate development, project management and asset management.

RBI is a subsidiary of RZB Vienna. Founded in 1927, RZB is the steering holding of the entire RZB Group and the central institution of the Austrian Raiffeisen Banking Group (RBG), the largest banking group in the country. Raiffeisen Bank International includes many finance leasing companies (including one in Kazakhstan and one in Moldova) and a number of other companies that offer financial services.

RBG represents approximately a quarter of the entire banking business in Austria and includes the largest banking network in the country, with more than 550 independent banks and 1,700 branches. At the end of 2009, the consolidated balance sheet total of RBG amounted to 260 billion euros. RBG’s three-level structure consists of Raiffeisen Banks on the local level, Regional Raiffeisen Banks on the provincial level and RZB as the central institution.

Raiffeisen Bank are private credit institutions - cooperatives, which operate as banks with general services for individuals. Raiffeisen banks each province are the respective owners of Regional Raiffeisen banks, which in their possession have about 88% of RZB’s ordinary shares.

The idea of co-operatives, which the organization of Raiffeisen Group is based on and reflects the principles and work of the German social reformer Friedrich Wilhelm Raiffeisen (Friedrich Wilhelm Raiffeisen, 1818-1888).

3. **RAIFFEISEN BANKS’ FINANCIAL INNOVATION**

Financial innovation can be classified into two main groups, namely (www.raiffeisen-bank.rs) innovations linked to the changes on the supply and innovation related to the changes on the demand side.

1. **Innovations related to changes on the supply side.** Large fluctuations in interest rates led to an increase in interest rate risk. This risk motivated financial institutions to find a specific solution, which would some way amortize the high interest rate risk. One of the financial innovations that proved successful are mortgage loans with variable interest rates. With this loan, the interest rate during the repayment period adjusts to the market rate of interest. In this way financial institutions manage to absorb the possible increase in market interest rates, which will in this case even be welcome because of larger profit through the increase in interest on the loan. With a mortgage loan with fixed interest rate any increase in market interest rates could be only noted by banks, with sadness, as missed profit. For this reason, banks are often willing to provide mortgage loans with variable interest rate with the initial fixed rate that is lower than the interest rates on mortgage loans with a fixed rate.
2. Innovations related to changes on demand side. The largest source of changes on the demand side is the development of computer technology and telecommunications. Banks and other financial institutions have developed new products and financial instruments based on this technology, primarily credit cards and electronic banking.

A complete list of Raiffeisen bank payment cards includes: DinaCard payment cards, MasterCard revolving payment card (Standard and Gold) VISA, VISA revolving payment card (Classic and Gold) VISA Electron, Piraeus Bank European Youth payment card, VISA photo card Piraeus Part by Part, Card-to-card service, SMS Recharge via payment cards, Reception of money from abroad via DinaCard card, Online Request for credit card, payment cards - Your passport for the world of discounts, SMS and e-mail notifications on credit cards.

a) Credit and debit cards appeared before World War II. The conditions for mass use of cards were created no sooner than the end of the 60s. Unlike paper money, which ceases to bear interest at the moment when taken from the account, electronic money can make interest until spent. Credit cards can be used for on-line transactions, but due to the fact that the Internet is an open network and that a third party can trace and misuse credit cards, a whole series of competing protocols and methods has been developed that guarantees security of the transaction. The first successful attempt of this kind was a program initiated by Bank of America, and continues with independent organization called VISA, followed by the program Master Charge card, now known as MasterCard. The programs have become incredibly successful, resulting in the creation of a new financial innovation - debit card (Bodiroža M., S. Petković, G. Eric-Bodiroža, 2012). By appearance and usage in paying these cards are very similar to credit cards. The difference compared to credit cards is that, unlike them, debit cards do not offer the possibility of lending to consumers, but the amount charged by debit card is immediately charged to its owner.

Example of MasterCard business - Raiffeisen bank’s Web Card:
- request submitted directly at the point of sale without going to the bank;
- credit card for payment of goods and services and cash withdrawals at ATMs and banks in the country and abroad;
- Payment via the Internet and MOTO transactions (orders by phone or mail);
- The amount of credit limit from EUR 100 to EUR 5,000 (in dinars);
- Approved limit per card is the amount of product purchased rounded to the first thousand more (e.g. LCD TV purchased in the amount of 35,458.59 RSD, approved limit per card RSD 36,000.00);
- No deposit or draft bill;
- type of goods does not condition the repayment period;
- Once a month client receives statement showing matured obligations or minimum payment amount;
- Minimum monthly repayment amounts to only 5% of the limit (initially 5% of the amount of purchased goods);
- payment of outstanding liabilities with 21 day grace period from the date of statement to due date;
- payment of monthly installments releases credit card limit for the re-purchase and withdrawal of cash at any point of sale where there is a MasterCard sign.
Additional benefits:

Raiffeisen Bank gives a free monthly fee for its maintenance to all its holders of MasterCard Web Revolving credit cards for a period of three months after activation. Its credit card users are also users of the prepaid number of any mobile operator in the country (MTS, Telenor, VIP Mobile) allowing to supplement credit by sending SMS messages. By using the said service you can supplement the mobile phone of any other person in the same network. This service can be used at any time, from anywhere, at home or abroad, and the registration and use of Payment Card Mobile Service (PCMS) is free. Raiffeisen Bank informs the MasterCard Revolving web credit cards holders via SMS on each transaction conducted with information on the amount of the transaction, whether the user is withdrawing money from an ATM, paying for the goods and services or makes payments on his credit card. Thirty days before the expiry of the card the customer is notified by SMS that his card will expire and that he should take a new card in the office in which he submitted a request for the issuance of cards. Once a month the user gets SMS and a mini-statement, and this SMS notification is free.

Example of Maestro debit card business in Raiffeisen bank:

Maestro debit card (primary and one additional) can be used to withdraw cash and pay for goods and services, home and abroad, pay for goods and services via the Internet. Most importantly each payment of goods and services in the country in the amount from 3,000 RSD upwards will be divided into 3 equal monthly installments without interest. Maestro debit card is part of the Comfort product package of Raiffeisen Bank, and the cost of keeping the package is 300 RSD per month. Raiffeisen Bank Comfort package includes: Maestro debit card, the dinar current account, the possibility of free use of borrowings for an amount in the use of up to 10,000 RSD, foreign currency account deposits, Visa Electron card (basic and one extra), Visa Virtuon card, Payment Card Mobile Service (supplements the mobile phone and pays postpaid bills), telephone banking, electronic banking (RaiffeisenOnLine, SMS, phone), standing order, simple savings - savings plan, MinMax savings. Raiffeisen Bank delivers monthly account statement for the previous month, and in that way we have a review of all payments made and always know how we spend the money, and that the situation on our account is electronically checked on every transaction. The card is replaced in the following cases: when the user changes personal data, when physically damaged, when entered (printed) are technically incorrect, with forgotten or lost PIN.

b) Electronic banking means the ability of clients to communicate with the bank via electronic devices. One of the most important forms of electronic banking is the ATM. This device can provide services to customers for cash withdrawal, payment of deposits, transferring of funds from one account to another, and to check account balances. The great advantage of these devices is their 24-hour availability, as well as the possibility of easier and better coverage of the territory. Further, an important form of electronic banking is the home banking. This term includes the possibility that transactions such as transferring money to another account, paying bills, checking status, etc. you as a client can perform from your own home via personal computer and internet connection. The next significant step in the development of electronic banking has been made with the promotion of on-line banking, which is a combination of the characteristics of the program for personal finance and e-payment account. On-line Banking (Stankić R., 2013) is carrying out banking transactions direct link customer and the bank with the help of specialized software. So, you need special
software installed on the client computer and only from there you can carry out transactions and include information about changes.

Example of business through Raiffeisen bank’s electronic banking:
- Obtaining the necessary information about your accounts via the Internet. All you need is a computer and internet connection.
- Telephone banking (call center services) by calling the call center Raiffeisen Bank dostupanog 24 hours, you have the ability to conduct financial transactions and to obtain all necessary information on your accounts by phone.
- Telephone Banking (IVR) status after the account opened in Raiffeisen Bank you can easily get through a fixed phone calling, which is available 24 hours.
- Telephone banking (SMS) at any time, find your balance by sending an SMS message.
- Contact Center - all in one place. Information and support, available 24 hours a day throughout the year.

CONCLUSION

Based on the above, we conclude that Raiffeisen Bank offers commercial and investment banking to Austrian and international companies, diversified banking and leasing network in Central and Eastern Europe, both for clients from industry and individuals, as well as services and investment banking services in Asia and in the world’s most important financial centers.

The latest trend in the banking business is characterized by electronic banking, through the introduction of mobile banking. Mobile Banking allows you to execute transactions via portable computers, digital organizer and mobile phone. The latest generation of mobile phones has the capability of connecting to the Internet, which means that users can access their financial institution, in this case Raiffeisen bank using a mobile phone and perform the desired transaction. Mobile banking is experiencing an expansion that is stronger than Internet banking even.

Taking into account the general business environment, we conclude that the macroeconomic trends continued in 2015 too which is primarily reflected in higher market share and exchange rate stability. The high capital adequacy and stability of the deposit base contributed to the fact that the Bank in the first six months of this year achieved profit before tax of 0.02 billion dinars while maintaining a stable market position, on the one hand, and the preservation of value for shareholders and customers, on the other.

In the growing phase of the development of electronic money and electronic banking, the bank must pay special attention to risk management in line with the strategic orientation and the constant presence of an increased risk of credit default. In this regard, the Bank has established a reliable system of risk management as an integral part of the overall organization, through all business activities and all levels of management. Special emphasis is placed on monitoring the quality of the loan portfolio for early identification of increased risk of collectibility of loans. With the spread of the Internet economy, the bank can approve loans to consumers in the form of electronic money, which will come to the creation of new money so that the total amount of electronic money deposited exceed the amount of real money.

If the process of creating new money continues, it can increase the risk of bankruptcy
of banks, which in turn can cause a chain reaction and lead to financial crisis. It is therefore necessary to regulate Internet banks and oversee them like ordinary banks, so that the public can develop more confidence in such banks.

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THE HARMONIZATION OF LEGISLATION OF REPUBLIC OF SRPSKA AND THE EUROPEAN UNION LEGISLATION

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Abstract: One of the important tasks of the National Assembly of the Republic of Srpska is harmonization of legislation of the Republic of Srpska and EU legislation. The task of the Assembly is to develop additional parliamentary instruments in order to provide strategic supervision of the process of harmonization of legislation and more effective and regular performance of parliamentary tasks related to harmonization of legislation. In this process the cooperation of the Government and the National Assembly of the Republic of Srpska is necessary. The Government takes the main initiative and the leading role, and the Assembly makes laws necessary for the introduction of EU regulations and practices. The National Assembly should ensure strong political work over the activities of legislative harmonization carried out by governmental entities.

Keywords: harmonization, legislation, the National Assembly, the Government, the European Union.

INTRODUCTION

Legal norms, adopted by the European Union authorities, are valid over the whole EU territory, but they exist parallel to the norms adopted by member states for their own territories and population.

So, there are two parallel legal systems.

Since the EU is not a state, it is considered that agreed behaviour of certain sovereign rights on community authorities is the basis. The holders of sovereign authorities are member states, but they willingly, or by contract, transferred certain authorizations to the Union authorities, or the Union itself. The truth is that the EU does not have the monopoly of coercive enforcement in order to achieve the realization of legal norms, but the guarantee of realization of legal norms is under the unlimited jurisdiction of European Court of Justice that interprets the EU law, ensuring its realization by performing a judicial function.
The overall EU law is divided into primary and secondary, and the primary one has the primacy over the secondary one, which means that the secondary one has to comply with the primary one, and in this regard it is a subject of the European Court assessment. Primary law means the law that the member states created by themselves, immediately concluding appropriate international contracts (usually founding contracts and their amendments).

Secondary law is created by the Union authorities, as a result of standardization of the Union authorities, and those are: regulations, directives, decisions, recommendations, and opinion (a multitude of other types of legal acts).

In case of collision, national law is applied, which excludes the liability of the state for failure to fulfil its obligations that derive from the membership.¹

The process of harmonization of domestic law regulations and the EU regulations is complicated, and it must be constantly performed and it should be performed by the Parliamentary Committees of Bosnia and Herzegovina. It is the responsibility of the Government of Republic of Srpska and the National Assembly. The first committee is the Ministry of Economic Relations and Regional Cooperation, and then the Government of Republic of Srpska. The second committee is the Committee for European Integration and Regional Cooperation of National Assembly.

THE ORIGIN AND THE SIGNIFICANCE OF THE EUROPEAN UNION

The European Union was formed in order to end wars and make peace in Europe. It was created by the European Coal and Steel Community, formed in 1951 by six countries, Belgium, France, Netherlands, Italy, Luxembourg and Germany, and today it has 28 member countries (included in six enlargement processes (in 2004 and 2007, it is considered as one process), and those are: Denmark, Ireland, United Kingdom – in 1973, Greece in 1981, Spain and Portugal in 1986, Austria, Finland and Sweden in 1995, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia in 2004, Bulgaria and Romania in 2007, and Croatia in 2013.²

There are also disagreements among members about the enlargement of the EU, the stumbling block is Great Britain, because it is a proponent of international cooperation, and its population is both for staying in the EU and leaving the EU.³

The EU Council acknowledged BIH as a potential candidate for membership in 2000, and in 2003, the study on the endurance capacity of BIH for the implementation of Stabilization Agreement was published, whereas in 2005 the negotiations began, and in 2008, Visa Facilitations Agreement entered into force, and on June 16th 2008, Stabilization and Association Agreement was signed. In January 2015, BIH Presidency signed a written commitment of BIH, and national Parliament gave support, on June 1st 2015, the Stabilization and Association Agreement entered into force.

¹ Stevanović, Z., (2008), Pravo evropske unije (The European Union Law), Službeni list, Belgrade, p. 167-168
² Golijan, D., Lavrić, R., (2016), Uloga Parlamentarne skupštine BiH u procesu pristupanja EU (The role of the Parliamentary Assembly of BiH in the process of accession to the EU), Zbornik radova, ANTIM, Belgrade, p. 396
The BIH Presidency submitted an application – the application for the EU membership on February 15th, 2016, which is followed by the initial estimates, and then the European Commission will carry out a thorough inspection of the legal system in BIH, as well as it should be harmonized and modified with the rights and obligations.\(^4\)

**THE HARMONIZATION OF LEGISLATION IN REPUBLIC OF SRPSKA**

There are several legal norms that regulate the process of harmonization of legislation in Republic of Srpska.

Legal acts relevant to the harmonization of legal system in Republic of Srpska and the EU legislation are:

- Decision on the process of harmonization of legislation in Republic of Srpska and the EU acquis and the legal acts of the European Council (Sluzbeni glasnik RS, no. 46/11), that also contains the methodology of harmonization.
- Decision on achieving coordination of republican administration committes in the field of European integration (Sluzbeni glasnik RS, no.46/13)
- Document that has the force of an act entitled “Rules for drafting laws and other regulations prescribed in Republic of Srpska”, and they are related to the rules for drafting legislation, adopted by National Assembly of Republic of Srpska. It provides the same rules for all legislative proposals. Additionally, the rules contain specific provisions related to the harmonization of legal system in Republic of Srpska and the EU acquis.

The source of the obligation to harmonize the legal system in Republic of Srpska and the EU legislation can be also found in the Acts 73 and 193 of the Rules of Prodecure of National Assembly of Republic of Srpska. In the Act 77 of the Rules of Prodecure of National Assembly of Republic of Srpska, it is said that Committee for European Integration and Regional Cooperation considers, *inter alia*, the following questions related to:

- Monitoring and harmonization of the legal system in Republic of Srpska and EU legal system
- Consideration of legislative proposals through which the harmonization of legal system of Republic of Srpska and legal system of European Union is performed in accordance with the obligations of Bosnia and Herzegovina and Republic of Srpska related to the process of joining the European Union.
- Consideration of comparative review of harmonization of legislative proposals and the EU ecquis, and opinion of the Government of Republic of Srpska on the degree of harmonization of legislative proposals and the EU ecquis.

In the Act 193 of the Rules and Procedures of National Assembly of Republic of Srpska, it is said that the legislative proposal, apart from the text of the law, also contains the Decla-

\(^4\) Golijan, D., Lavrić, R., (2016), *Uloga Parlamentarne skupštine BiH u procesu pristupanja EU* (The role of the Parliamentary Assembly of BiH in the process of accession to the EU), Zbornik radova, ANTIM, Belgrade, p. 396
ration of Conformity with the EU regulations. However, the existing system of harmonization of laws of legislation and the EU regulations does not include the required verification of harmonization of parliamentary amendments and the EU regulations.

The Government of Republic of Srpska does not have any database of the EU legal acts where the harmonization of legislation has already been done, nor the the database of the EU legal acts translated into official languages in Bosnia and Herzegovina. The Department for Harmonization of Legislation in Republic of Srpska and the EU legal acts within the Ministry of Economic Relations and Regional Cooperation has some sort of database. However, this database is in Excel format and it can not be put on the Internet.

**PLANNING AND PRIORITIES OF PROCESS OF HARMONIZATION OF LEGISLATION**

The Government of Republic of Srpska prepares an annual plan for harmonization of legislation in Republic of Srpska and EU legislation (in fact, the plan is the part of the general legislative plan of the Government of Republic of Srpska), but it is not delivered to National Assembly of Republic of Srpska. This plan of harmonization of legislation is not based on any strategic document, but it is partly prepared on an ad hoc basis. If the legal act, that was planned by a certain ministry, included the questions governed by the EU regulations, then it would be included in the harmonization plan. Separately planning a certain legal act for the purpose of implementing the concrete EU legal acts is a very rare situation.5

The lack of a well-prepared plan of harmonization of legislation sometimes leads to the situation where the legal acts of Republic of Srpska are fully compliant with the EU legislation but they can not be implemented due to lack of capacity at the entity level.

The Act 287 of the Rules and Procedures of National Assembly of Republic of Srpska obliges the Government of Republic of Srpska to submit a report about its activities. Such reports contain information related to the process of harmonization of legislation. However, these reports are presented to National Assembly of Republic of Srpska only if it asks for them or at the initiative of the Government itself. There is no legal obligation for regular preparation of such reports that may weaken the effectiveness of the control of the National Assembly of Republic of Srpska and the Government of Republic of Srpska in this field.

**PARTICIPANTS IN THE PROCESS OF HARMONIZATION OF LEGISLATION INSIDE AND OUTSIDE OF THE NATIONAL ASSEMBLY OF REPUBLIC OF SRPSKA**

There are two entities included in the proces of harmonization of legislation, together with the departments and sections for the EU, established within the relevant ministries and they deal with the matters related to the EU. One entity is located within the Government Administration and the other is in the parliametary structure. The first entity is the Ministry of Economic Relations and Regional Cooperation, especially the Department for Harmonization of Legislation in Republic of Srpska and the EU

regulations. It is composed of three permanent experts and two temporary experts. The Department cooperates with the contact points on the EU matters in other ministries.  

The second entity is the Committee for European Integration and Regional Cooperation of National Assembly. The Committee is composed of nine members: the President, the Vice President, and seven members. The President, the Vice President and five members are selected among Members of Parliament in National Assembly of Republic of Srpska. In accordance with the Rules of Procedure, there are also external members who are not the Members of Parliament (Act 76, The Rules of Procedure of National Assembly of Republic of Srpska). National Assembly of Republic of Srpska recently established the Department for the EU, appointed the director of the Department and performed the internal relocation of two employees into this Department. Neither the Ministry of Economic Relations and Regional Cooperation nor the Committee for European Integration and Regional Cooperation have enough staff and they need more legal officers specialized for EU law.

THE PROCEDURE AND PRACTICE OF HARMONIZATION OF LEGISLATION

The vast majority of legislative proposals is drafted by the Government of Republic of Srpska. Legislative proposals are drafted by ministries that cooperate with the Department for Harmonization of Legislation of Republic of Srpska and the EU regulations which are located in the Ministry of Economic Relations and Regional Cooperation. This department plays an important role in the Government of Republic of Srpska as one of the EU centres. The ministries are in charge of making comparative surveys of harmonization of legislation and EU legislation. They act in accordance with the instruction how to fill out the comparative surveys on harmonization of draft/proposed legislation and the EU acquis and the legal acts of the European Council and the Ministry of Economic Relations and Regional Cooperation.

In accordance with the Rules and Procedures of National Assembly of Republic of Srpska, any legislative proposal, whether the Government proposed it or not, should contain the statement of harmonization. The Committee for European Integration and Regional Cooperation gets the comparative survey of harmonization of legislation and the opinion of the Ministry of Economic Relations and Regional Cooperation on the degree of harmonization from the Government. Mentioned documents are considered in the Committee session.

In the National Assembly of Republic of Srpska, the Committee for European Integration and Regional Cooperation is the only industrious entity which has the responsibility for monitoring of harmonization of legislation in Republic of Srpska. All the acts of Republic of Srpska, which transpose the EU legal norms to the legal norms of Republic of Srpska, and which the National Assembly of Republic of Srpska is considering, require prior approval of the vast majority of the Committee.

At the moment, the amendments proposed during the parliamentary procedure do not consider their compatibility with the EU legislation. However, the Government of Republic of Srpska has the right to give its opinion of any amendment. These opinions can include harmonization of legislation too.

In Republic of Srpska, the coordination of processes of European integration is regul-

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6 Stevanović, Z., (2008), _Pravo evropske unije_ (The European Union Law), Službeni list, Belgrade, p. 168-178
lated by the decision on accomplishment of coordination of the authorities in implementing activities in the field of European integration and international cooperation (*Sluzbeni glasnik RS, no. 47/13*). This decision was made by the Government of Republic of Srpska.

The officials of the Committee for European Integrations and Regional Cooperation, the Department for EU of the National Assembly of Republic of Srpska, and the Ministry of Economic Relations and Regional Cooperation, maintain regular communication in the context of the preparation of materials for the meeting of the Committee.

The entire process of harmonization of legislation should be regulated in order to be effective, from the planning phase to the adopting of legislative acts. The process of harmonization of legislation should include all relevant participants, their rights and obligations, including vertical and horizontal coordination. It is also important to mention that the entire process of approximation of legislation can be regulated by one or several legislative acts.

The centralized database of translated legal acts of EU should be established, which should be available to all government institutions of Republic of Srpska and National Assembly of Republic of Srpska and the general public, too. The database should contain translations in all languages officially used in Bosnia and Herzegovina. The appropriate system of harmonization of legislation should ensure the access to all necessary documents, and also the use of systematic method for harmonization of legislation. In order to achieve the goal, all legal acts of EU should be translated into local languages and put in one database. Otherwise, there is a risk of wasting time, effort and money on duplicating the same tasks, and risking that the important part of the acquis remains unfair. Members of Parliament, employed in National Assembly of Republic of Srpska, the citizens, and the other participants should be able to read the texts of EU legal acts which are built into law of Republic of Srpska in languages officially used in Bosnia and Herzegovina, so they could judge whether a particular proposal is in compliance with an EU legal act or not. This electronic database should be available in whole country, have the same format, and follow the same methodology like the databases at the country and entity level, which would enable a creation of a unified database for the whole country and avoid duplication of translations. Under ideal conditions, one coordinate entity should govern this electronic database in whole country, in order to reduce to a minimum the duplicating of tasks and ensure consistency.

In this context, the database of legal acts of Republic of Srpska, equivalent to corresponding EU legal acts, should be established, and vice versa. A list of already harmonized legal acts of EU could be a good source for future legislative activities and it could provide useful information for all citizens, business entities and other participants. The database should contain two parts: EU legal acts with which the legal system of Republic of Srpska was harmonized, and the legal acts of Republic of Srpska with which the legal system of Republic of Srpska was harmonized with EU legislation. The database should be a part of Unified State Database.

**PLANNING AND PRIORITIES OF HARMONIZATION OF LEGISLATION**

A prerequisite for an efficient procedure of harmonization of legislation is a well-prepared plan for harmonization of legislation. Therefore, the Government of Republic of Srpska should prepare a multi-year plan for harmonization of legislation for the whole entity and it should update the plan regularly. Planning of harmonization of legislation should
be linked to Republic of Srpska's budget planning. Although there is the annual plan of legislative activities in National Assembly of Republic of Srpska, it does not contain concrete references for harmonization with EU legislation, so it would be advisable to adopt a special, elaborate plan for this specific purpose. It should consider all the laws of EU, in all areas of their operation and all their responsibilities. Every part of EU legislation should have prescribed deadlines for partial or full harmonization. The plan should also determine competent entities for harmonization of specific laws, but it should also consider the possibilities and the needs of the entity. Harmonization of legislation very often requires certain financial costs to ensure the implementation of harmonized legal regulations, including the requirements in terms of construction and development of human potential. Therefore, the planning of harmonization of legislation should be also linked to the budget planning. The Government of Republic of Srpska should be in charge of drafting the plan of harmonization of legislation, but National Assembly of Republic of Srpska should supervise the drafting and implementing of the plan. Such supervisory activities of National Assembly of Republic of Srpska would not only inform the Members of Parliament and employees about the plan of harmonization of legislation of Republic of Srpska, but it should also include the discussion about the activities from last year. Nevertheless, the plan of harmonization of legislation of Republic of Srpska and its implementation should be also coordinated with the similar plans, adopted in Bosnia and Herzegovina. Brcko District and in the whole country. The multi-year plan could provide a clear map of the division of responsibilities and competences, based on constitutional order of Bosnia and Herzegovina. The goal of this kind of planning is to increase efficiency and transparency of efforts to harmonize legislation. In order to achieve this goal, it is very important that the planning process is under the supervision of National Assembly of Republic of Srpska and to be synchronised with similar plans at other levels of government.

CONCLUSION

National Assembly of Republic of Srpska should give all necessary documents (to all Members of Parliament) when they consider draft laws which are used for harmonization of legislation of Republic of Srpska and EU legislation, not only the comparative review of harmonization and statement of harmonization but also the translated versions of corresponding acts of EU. All documents, also including the relevant translations, should be delivered to the Members of Parliament of National Assembly of Republic of Srpska which would increase their capacity for performing the supervisory tasks over the Government of Republic of Srpska and help them in making informed decisions in the harmonization of legislation process.

Moreover, amendments to legislative proposals should be necessarily checked in terms of their harmonization with the EU legal regulations. The Government of Republic of Srpska in cooperation with the Department for EU in National Assembly of Republic of Srpska should carry out these checks. Although the Government of Republic of Srpska makes a great effort to check the harmonization of legislative proposals and EU regulations, this system does not take into account one important phase of legislative procedure – submitting amendments. Generally, it is known that parliamentary amendments can significantly change the legislative proposal which can influence the degree of harmonization of pro-
proposals and EU regulations. So, it is necessary to have a mandatory check of parliamentary amendments. At the moment, neither National Assembly of Republic of Srpska nor the Government of Republic of Srpska have enough human resources that could deal with it. Since the Government of Republic of Srpska regularly prepares opinion of harmonization of regulations, it is recommended that the Government of Republic of Srpska performs these checks too. Closer cooperation with National Assembly of Republic of Srpska’s Services and increasing number of professional staff in the Department for Harmonization of Legislation in Republic of Srpska and EU acquis (within the Ministry of Economic Relations and Regional Cooperation) will be necessary in order to perform tasks of checking the harmonization of amendments.

Nevertheless, more time to work on the legislative proposals, which are harmonized, should be given to the Committee for European Integration and Regional Cooperation during legislative procedure. This would help National Assembly of Republic of Srpska with the performance of its supervisory function and improvement of quality of regulations which are adjusted.

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STATE CORPORATE ENTERPRISES IN CHINA: LESSONS FROM MANAGEMENT AND COMPETITIVE ADVANTAGES

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Abstract: Although the state ownership on enterprises is densely criticized by classical economists as inefficient, nevertheless state-owned enterprises (SOEs) particularly in developing countries contribute to the creation of GDP, trade and capital flows. The system of their corporate governance is built in a bit different way than in the private sector: not only in the sphere of administrative power delegation, but also regarding the status of legal person, the rights of investors, transferability of their shares, as well as providing of competitive advantages. Lessons learned from the advantages and disadvantages of state company management in China, where they are most common, are in the focus of this article.

Keywords: state-owned enterprises, SOEs corporatization, competitive advantages, China.

INTRODUCTION

Despite the active processes of privatization, which dominated in the world during the late twentieth century, some of the assets in the economies of many countries are still in the possession or under the control of the state. Under the influence of macrocyclical fluctuations in the global economy, their volumes and role are changing not only in developing countries but also in developed countries, albeit at a slower pace.

That is why the theoretical thesis circulated in the days of the of the Washington consensus dominance about the need to reduce state ownership as low-productive and low-inefficient becomes insolvent. Although in the totality of public companies in different countries, the majority does not show good results, yet the noticeable part of them has transparent accounts, strict financial discipline and good corporate reputation, and some of them are in the list of the largest world companies.

These trends, coming into conflict with the dominant ideas, encourage the rethinking
of the place and role of state ownership in the economy, strengthening the mechanisms of return from them, the principles of their management and control. Corporate governance practices accumulated in the private sector through the establishment of appropriate institutional environment can be successfully extended to the public sector, helping to overcome the major drawbacks associated with non-accountability, voluntarism and corruption.

LITERATURE REVIEW

In the scientific literature, it is assumed that the globalization of world markets for several decades stimulates the convergence of national corporate governance models and unification of corporate legislation of different countries [1]. Other researchers on the contrary speak about preserving national differences in the models of corporate governance and domination of few national models in world’s scale: Anglo-Saxon, Continental and Islamic [2].

SETTING OBJECTIVES

Most studies relate to private companies, for state enterprises the mainstream offers univocal recipe - privatization [3]. However, there are examples of countries that ignore these perfunctory scientific conclusions and follow their own path successfully experimenting with hybrid forms of corporate governance. One of them is the Peoples Republic of China, where the companies, owned by the state, not only demonstrate high economic performance, but also make a significant contribution to rapid economic growth. This work is devoted to extracting of positive experience in corporate governance of public enterprises in China.

RESEARCH RESULTS

To assess the contribution of enterprises controlled by the State in the national and global economy reliably is rather problematic, since statistical records of their activity are complicated by incomplete database and differences in legislation between countries. In such circumstances, analysts are turning to indirect information sources.

Thus, Kowalski and other professionals OECD [4] used the method of sample analysis of the list of 2000 world largest companies, compiled by Forbes, to determine the structural features of the type of business ownership in economies around the world. Their approach, although has some flaws¹, yet allows to capture approximately the scale of state-owned enterprises in the global economy. In this way they identified 204 businesses that are directly controlled by government institutions in 37 countries, among which 70 were Chinese, 30 - Indian, 9 - Russian, other 9 were from the UAE, 8 from Malaysia, 7 from Brazil, while all from OECD countries, there were only 41 (6 from Switzerland and Poland, 5 in France, in

¹ For example, their study does not take into account the contribution of medium-sized state-owned enterprises, the number and effectiveness of which in some countries can be significant. Also, the study omits those public companies whose shares are not traded on the stock markets.
other countries - from 4 to 0). Thus, most of the large state-owned enterprises (= 60%) are currently concentrated in developing countries, while in developed countries their role in the economy is not low.

The combined sales of these 204 public companies in 2011 reached 3.6 trillion US$. (About 10% of that of all companies from the Forbes list or 6% of global GDP) and the level of their total capitalization was approaching to 11% [4, p. 20] of all listed companies value. This indicates their slightly higher value compared with assets of private firms on the background of proportionally identical results.

Based on Kowalski investigation, one should note some important facts concerning the performance of public enterprises: first, the low level of profitability, which suggests that the latter is not their primary objective; second, the low participation in international trade, indicating that their focus on the domestic market; third, comparability with the scale of the volume of global investment flows, which allows some countries to use state-owned enterprises as an alternative for the attraction of foreign investment.

Hence the difference between the roles and tasks performed by state-owned enterprises in developed countries and developing countries. In first they are not visible, concentrating in areas where it is necessary to remove market inefficiencies arising from asymmetric information or significant negative externalities of economic, social or environmental origin. Therefore, a high degree of state presence prevails in such specific areas as gas and power generation, refining, manufacture of tobacco products, storage and telecommunication services.

Another situation occurs with state enterprises in developing countries, particularly in BRIIKS (table 1). Profitability of these businesses in an average 6 times higher than in developed countries, contribution to a total product is 10 - 15%, and the value of assets controlled is close to 60% of GNI. These data suggests an important functional burden put on state-owned enterprises in developing countries: to support economic development, but not to ensure economic efficiency. Using them, the state can create growth poles in priority economic sectors or provide for the latest cheap raw materials. At the corporate level management decisions of SOEs can have long-term or strategic nature and do not aim at profit earning.

**Table 1:** Sales, profits, assets and market value of SOEs included in the Forbes list of 2000 largest companies, in percentage of the gross national income of the BRIIKS countries*

<table>
<thead>
<tr>
<th>Country</th>
<th>Sales</th>
<th>Profit</th>
<th>Assets</th>
<th>Market value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>12 %</td>
<td>1,7 %</td>
<td>51 %</td>
<td>18 %</td>
</tr>
<tr>
<td>China</td>
<td>26 %</td>
<td>2,9 %</td>
<td>145 %</td>
<td>44 %</td>
</tr>
<tr>
<td>India</td>
<td>16 %</td>
<td>4,3 %</td>
<td>75 %</td>
<td>22 %</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3 %</td>
<td>0,3 %</td>
<td>19 %</td>
<td>12 %</td>
</tr>
<tr>
<td>Russia</td>
<td>16 %</td>
<td>3,0 %</td>
<td>64 %</td>
<td>28 %</td>
</tr>
<tr>
<td>South Africa</td>
<td>2 %</td>
<td>1,7 %</td>
<td>3 %</td>
<td>1 %</td>
</tr>
</tbody>
</table>

* Source: [4, p. 21]

Thus, the activities of public companies are naturally integrated into the growth strategies of many developing countries. Lessons from state assets corporate management of most
successful among them - of PRC SOEs - can contribute with useful knowledge in the path of state companies’ reform at East European countries and in the development of business relationships with Chinese companies of this type.

The industrial complex of China (and many other countries) is very difficult to structure on public and private components by the type of property. More appropriate is to speak about 1) the pure state sector, represented by state-owned (100% of stake) and enterprises controlled by the state (controlling stock), the amount of which in 2012 was 1.93% of the total businesses entities, and 2) the non-state sector, which is represented, along with domestic private players, by foreign companies and companies with state participation (minority stake). To determine which of two sectors play a leading role in Chinese economy can also be rather arbitrary. OECD researchers rated the contribution of state enterprises in China’s GDP to 29.7% in 2006. US-China experts supervisory commission of economy and security are talking about 40% of GDP in 2009 [5, p. 11]. If we take into account the derivative parameters like number of employees, investments in fixed assets and the value added in industry, in our opinion, the proportions between public and private production in the country are close to the ratio of 1:2.

While analyzing the model of country’s corporate governance scientists pay attention to such options as 1) the particular acquisition of legal entity status, which reflects contracts participation responsibilities and property ownership, authority delegation and the resolving of disputes in a court; 2) transferability of shares that allows one to go out from a company, to sell one’s rights in it or to transmit them to others; 3) delegation of administrative functions, that clarify mechanisms of ownership and management separation; 4) the rights of investors for the company’s revenue [1]. We apply these settings to study the characteristics of SOEs corporate governance in China, adding another component - 5) created competitive advantages of the corporate form of business organization.

1. The status of legal entity Chinese state enterprises receive by the Law on state-owned assets in companies according to which the owners of such assets are “all people.” But de jure from the sake of people their management is carried out by specially created State-owned Assets Supervision and Administration Commission (SASAC) following its own circulars and rules. Among the Commission’s power are the appointment and dismissal of the CEO and his deputy, the head of the financial department, the head and members of the supervisory board, the offering of candidates to the board of directors in those companies where the state is a minority owner and others.

For the selection of management personnel to state companies SASAC uses a special competitive algorithm. The hierarchy of management and administrative positions is divided into 10 steps. Besides those people who at some moment occupy one of them, in the annals of the Commission there is a significant number potential applicants dossiers (“people waiting on the wings”). The success of existing and potential candidates for intermediate and senior management positions is annually monitored by Commission and evaluated with marks “A”, “B” or “C”. They are assigned according to job reports drawn up by the managers and anonymous survey of their peers. Top executive of state enterprise, who has received three times the low mark, is removed from his position.

Besides personnel management SASAC regulates investment decisions of largest state companies. The right to determine the main activity of these companies also belongs to
Commission and if the direction of SOE’s investment does not respond to its specialization it would require additional approval by the Commission. Its circular “On promotion of the state capital management and restructuring of state enterprises” distinguish a list of industries in the national economy where Chinese leaders regard the activities of state enterprises as a) strategic and b) pivotal for development.

By the decision of the Commission defense, power generation and distribution, oil and petrochemicals, telecommunications, coal, shipbuilding industry, and civil aviation are assigned to the strategic ones. The status of strategic industries means that the state aims to control at least 50% of the shares or assets of companies operating in it. Production of equipment, automobiles, information technologies, construction, ferrous and nonferrous metallurgy, chemical and geological exploration by the decision of the Commission are attributed to the pivotal sectors of the Chinese economy where the state requires its businesses to play a leading role.

The author’s analysis of revenues, consolidated by state corporations in pivotal and strategic sectors of Chinese economy shows that about 70% of them fallen the spheres of mining, processing and intermediary goods while only 30% of the production fall on the consumption goods.

2. Shares transferability of Chinese state companies is limited by the practice of their splitting on the openly exchanged on stock markets and artificially held (by the state or its representative), which are not the subject for trade. Such stock, however, may be in use out of the market through schemes of agreed sale, indirect ownership, free or by a court decision transfer or trust ownership. For a long time, the proportion of such shares held apart from direct circulation reached 2/3, which greatly hampered the market valuation of state companies. In turn, the shares traded in the stock markets of PRC, were divided into different classes depending on their availability for foreign players: class “A” stock was traded in Yuan for national operators in Shanghai and Shenzhen, class “B” was offered for the foreign investors in foreign currencies at the same yards, class “H” had the turnover on the Hong Kong Stock exchange according to separate rules [6, p. 26].

The practice of splitting and classification of shares should be regarded as deliberate government policy aimed, firstly, at maintenance of control over state assets, and secondly, on limitation of private Chinese companies access to listing that allows state companies to obtain additional resources from financial markets for cheap. To attract investors attention to SOEs securities Chinese regulators used a special method of their assets separation on the attractive with subsequent transfer to subsidiaries and toxic (often associated with social obligations), which remained in the possession of the parent organization. The shares issued by subsidiaries, which but kept the names of the parent companies, were traded on the stock markets. The use of such tactics among other allows Chinese officials to fend off Western criticism of excessive state control over their economies, substituting privatization of state assets by their corporatization or portfolio rationalization.

3. The delegation of administrative functions in Chinese state companies is characterized by the existence of two parallel structures that can influence on management. From
outside the corporate governance structure is based on a typical three-tier structure of the shareholders’ meeting, board of directors, often supplemented by the supervisory board and executive managers. But de facto decisions taken by SOEs management are influenced by party organization of the Communist Party of China, represented mandatory at a company with the party group or committee. Before making important decisions the board of directors and top management must “consult and take into account the views of the party organization,” and then to inform it on the results in a written form. These decisions, as researchers observations show, include enterprise development strategy, medium- and long-term plans, production and operating policies, annual financial budget, the restructuring of corporate accounts, preparation of internal rules and regulations and, of course, key appointments [7, p. 656].

The main goal of the party organizations is to uphold the ”party line” in the company, that is for in addition to the usual party committees under their control are also trade unions, youth leagues and to some extent workforce meetings. Every party member should vote according to the party line and thus express its “collective will”.

Approval of candidates for management positions in the top 50 state-owned companies3 is in the competence of the Organization Department of the CPC Central Committee, which directly appoints people to the three main posts of party secretary, chairman and CEO. On the important positions remained - vice presidents, deputy secretaries and others - the candidates are approved by SASAC in agreement with the Organizing Department. In general, the State-owned Assets Supervision and Administration Commission determine the entire management staffs in 70 other important for the country companies and their subsidiaries. If a state company plays a significant role only at the provincial level, the election of its management staff is the responsibility of the local branch of commission.

The organizing committee of the party constantly moves the party nomenclature between the highest positions in ministries, state companies, provinces, universities and the Academy of Sciences, the number of which is approximately 5000 positions [5, p. 75]. Thus, the Communist Party of China via pyramidal management structure and constant management rotation effectively controls many giant state-owned enterprises and through them impacts significantly on the national economy4.

4. The right of private investors to participate in the dividends of state companies is limited. By the mid-2000s in China it was generally common to reinvest earned profits fully into the production expansion. Although such way to use earnings often showed low efficiency, it allowed during a decade to increase significantly the industrial potential of the country. By some estimates, the profit savings in companies reached 75% of corporate investments and 20% of GDP [6, p. 35].

One should keep in mind that the bulk of state assets in the national economy is con-
centrated in basic industries that play intermediate economic and commercial role (electric power, metallurgy, fuel and energy complex, financial services). State enterprises, successfully operating there, based on their designated monopoly, economies of scale, entry barriers, artificially reduced prices for state loans and subsidies. Researchers found that from 2003 to 2011 public non-financial corporations showed an annual revenue growth on average by 17.6%, net profit - by 25.2% and taxes - by 19.4%, well above the rate of GDP growth in this period [7, p. 647]. The size of their profitability per employee, which is found in 2.58 times higher than private enterprises also evidences about high efficiency of SOEs activity indirectly. In fact, state enterprises, using their intersectoral economic position, collect monopoly rents from the private sector, which is engaged in manufacturing of final products.

Since the mid-2000s with the rise of state companies’ corporatization the need to distribute their profits among non-state shareholders increased. Chinese Ministry of Finance also demonstrated interest in excess profits of SOEs, considering them as an excellent source of replenishment. As a result of difficult and protracted negotiations between SASAC, Ministry of Finance and heads of state enterprises (antagonists of such offers) compromise was reached that 20 percent of companies year profits would be directed to the payment of dividends.

The spread of modern corporate governance practices into Chinese state-owned companies should not be considered solely in the context of their search for additional funding sources. The involvement of private capital to their disposal was also based on the assumption of the best elements of the global principles and standards of management, protection of property, providing a wide range of competitive advantages, all of which contributed to a positive image of these structures and the state as a whole.

5. Among the competitive advantages of China’s state-owned corporations one should highlight the financial and economic (virtually unlimited capital raising and its easy centralization and consolidation, economies of business scale, transactional savings associated with the possibility of cost savings when making multi-channel procedure of “horizontal” market relations - finding partners, negotiating, etc.), production and cooperative (advance ment through technology leadership, given the high degree of uncertainty and risk, mutual development and innovation projects of SOEs and state research institutes that allow to reduce the costs of the innovation process, the possibility of buying foreign companies at low prices with their technologies; implementation of advanced management methods, etc.), legal (perpetuity existence, low dependence on changes in the membership), organization and management (aggressive implementation of new information and communication technologies as well as equipment for data recognition and automation; experience exchanges among state enterprises, joint into corporation, on a regular basis; easy solve of the handle ability problem by distribution of executive and supervisory and control functions; artificial creation of additional competitive advantages by means of monopolistic influence on the market, demand creating and protectionist instruments use to counter competitors, etc.).

The experience gained gradually by Chinese managers as a result corporatization became useful in adaptation to strongly uncommon conditions prevailing in foreign markets. Namely, to it’s the active mastering Chinese state business is now moving.
CONCLUSIONS

The model of corporate governance, emerging at state enterprises in China, is significantly different from the samples that are common in the United States, Western Europe or Japan. If the core of American model is the shareholders interests, in European approach trade unions and institutions play an important role, the Japanese model large private banks dominate, for the Chinese design the interests of Communist Party are crucial. Corporatized state companies continue to perform its stated goal - maintaining stability and ensuring economic development. Although the model has few exclusive features, however it is actively replicated in other developing countries (Russia, Brazil, Vietnam, etc.).

Corporate control over Chinese state-owned enterprises is based on the adaptation of company law to political institutions, and not vice versa, as is customary in the West. It is also based on mixing of state property with private and foreign capital through the interpenetration and cross-shareholding, but under strict and unrelenting state supervision. Restriction of shareholders rights and private control over business strategy, delegation of management functions to the officials include high corruption risks and the background for the opportunistic staff behavior, but the integration of companies top-management into the hierarchical structure of the CPC allows to neutralize these negative effects. Moreover, their coordination with the state administrative institutions is simplified by the means of party channels, reducing transaction costs. State-owned enterprises play the role of HR forge for the upper strata of the party nomenclature, greatly enhancing the quality of country’s general government.

Direct government participation in business, of course, creates a powerful crowding out effect of the private sector in PRC, which is the subject of constant criticism in Western economic literature. However, the rejection of the policy of total privatization and maintenance of high share of assets under the state’s control and direction allow China not only to protect economic interests and national security, but also to implement wide scale infrastructure projects, industrial restructuring and expansive foreign trade and foreign policy.

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LEGAL ASPECTS OF AUTHORITY, CONTROL AND MONITORING OF PRIVATE SECURITY OFFICERS IN SERBIA

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Abstract: In parallel with the process of transition, which is accompanied by new investments in order Notwithstanding legitimate, and capital from the black market, private security in Serbia has developed as a result of the inability of the state to fully optimize each subject provide some level of security. The Republic of Serbia is among the last countries of South-East Europe legislated private security sector and thus the private security as one of its components, adoption of the Law on Private Security in late 2013, with full implementation was postponed to January 01, 2017. The aim of the rule is regulative solving current problems and dilemmas and introduce legality, inter alia, in the management, authorization, control and supervision of private security operators, and thus employed in private security. Legal regulation of private security is of special interest for general security and the development of society as a whole, given that water logging-contracting private security services are a result of the fact that public bodies cannot be the sole provider of security services, claimed by citizens and business organizations. The subject of this paper is to analyze the legal powers of private security, as well as the control of the same, with the aim of giving overriding answer whether private security entities have responsibilities, authority to provide the necessary level of safety of service users, particularly in a situation where private security operators take part assignments who had previously belonged solely to government services.

Keywords: private security, private security, power, control, security guard.

INTRODUCTION

The modern state, in seeing the need to delegate to its almost sacrosanct right to use force and coercion to other factors within the national security, allows free and economically justified choice of individuals or companies that enjoy a higher degree of security than the state provides all citizens.¹ It is evident that the contemporary social conditions, the needs

of the public and private sectors for private security services are constantly growing and have the character of a long-term trend, which can be derived statement today that private security as one of the components of private security, is a set of rule-based, interconnected and professionally organized business, activities and subjects of private security measures intended to protect certain public and private property primarily on commercially-contractual basis. In such a situation predicted character powers and control of private security officers have their own special place in the regulation of private security and especially in relation to human rights violations, as well as threatening phenomena that today bears new forms after some degree of risk to some extent overcome the dangers that have so far been known.  

Formal Law on Private Security represents the normative system and materially-legal basis for performing the duties of private security in Serbia, it is decorated like to legal entities, entrepreneurs and individuals who perform tasks in the field of private security, be sure to secured facilities, private security jobs, licenses for performing the duties of private security, the conditions for their licensing, the manner of work, authority of security officers, labeling and presentation, the protection of the personal data, records and exercising control over their work. The assumption is that the law should provide all necessary conditions for the full and effective cooperation between the public and the private security sector, which in society is a prerequisite for the highest possible level of security of society as a whole. The highest level of security of society is achieved when the power and jurisdiction, both private and public sector security balanced with the full coordination and cooperation. Finally, the law provides a regulatory framework for the professionalization, standardization and certification of a wide range of security services of private security undertakings, where the framework of democratic civilian control of public and private subjects of security, control and monitoring function performed statutory bodies and accredited organizations.

1. PRIVATE SECURITY CONCEPT AND BASIC FEATURES

In the literature and available scientific research on private security, there is no unified position in defining and determining the content of the same idea. Different approaches in the conceptual definition of private security is mostly explained by the existence of differences in the understanding of the structure and components which are part of the activities of private security. Some authors under the private security includes “all kinds of activities of private organizations and individuals that provide various types of services related to security, investigations, guard services, patrols, alarm services, fraud and armored transport of goods.” According to other authors, private security is an “act of providing protection against crime and other threats, such as accidents, errors, and other unethical practices.”


“Fig. Gazette of RS “, no. 104/2013.


However, in theory the most common definition of private security exists, which is closest to the joint, “Private Security is part of the private security industry, which provides services through the market, which is funded by fees charged to the chambers through contractual relations and whose employees generally do not have special powers”.6

In practice, private security is most often related to the kind of security services of the private security sector are ordered and paid for by individuals, companies, business organizations and public institutions for the improvement of their own level of security and protection of certain (key) values. In doing so, these security services are not under the jurisdiction and scope public of the national security system and are located outside the base level of security that is guaranteed to all natural and legal persons.

2. THE POWERS OF PRIVATE SECURITY OFFICERS-NORMATIVE ASPECTS

The performance of private security guards, security officers 7have certain powers8 that can be used only under the conditions and in the manner prescribed by law and other normative act,9 and only during the performance of their duties, in which those powers must be applied gradually and proportionately, according to the particular circumstances. The purpose of such behavior of security officers to neutralize the security-threatening occurrence with minimal adverse effects.

By its nature, the activity Legal Officer private security is achieved by preventive actions (detection, elimination, deterrence and prevention of various forms and carriers compromising)10 and repressive action (strictly take certain legal measures foreseen). 11In this regard, Chapter VI of the Law on Private Security regulates the general framework of the jurisdiction and powers of security officers, private security officers who do not have official status, although they have a large number of powers that are similar to the powers of the police, and that can:

1. verify the identity of persons entering or leaving a building or space that provides in the protected area;12

2. inspect persons or vehicles at the entrance and exits of buildings or premises, and in the protected area;13

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7 Article 3 of the Law on Private Security predicts that “the security officer physical entity, of both sexes, which performs the tasks of private security.”
8 Authorization is the right and duty of the authorized person to take a series of measures, actions, and to use appropriate anti-holders compromising security, but only in cases prescribed by law and in the manner prescribed by laws or by-laws. By: O. Stevanovic, Leadership in the police, Police Academy, Belgrade 2003, p. 133.
10 Prevention is the basic form of operation and the services of physical and technical protection in the private security sector. It is planned activity intended exercise of protective functions of buildings, property and persons in the company or other legal entity. By: G. Matic, Basic physical and technical security, Chamber of Commerce of Serbia, Belgrade 2006, p. 114th
11 Repression is a form of response services of physical and technical protection of the occurrence of crime and other deviant phenomena in a protected facility. Ibid, p. 115.
12 Checking the identity of the person made using ID cards or other identification cards.
13 Overview of persons and vehicles is done visually, a guaranteed he same fullness views, except
3. prohibiting unauthorized persons enter or exit the building or space that is provided;
4. order the person to be removed from the building or space that is provided, if the person is here without authorization;
5. alert the person whose behavior or omission of required actions can endanger their safety, the safety of others or cause damage and destruction of property;¹⁴
6. temporarily retain the person who found room in the house or in the exercise of criminal acts and serious violations of public order and peace, until the arrival of the police;¹⁵
7. Use the following coercive measures:¹⁶ binding agents,¹⁷ physical strength,¹⁸ especially trained dogs¹⁹ and firearms (under conditions established by the law ²⁰and the law governing the use of weapons by authorized police officers²¹).

The provisions of the Law on private security dictate that all those powers of private security are clearly stated in the contract of security²² which is concluded with the customer.

when it is necessary to confiscation of weapons. When viewing physically not being searched, but only carried outward examination of persons, baggage and opening of certain parts of the vehicle, but without the right to rummage items and their individual sightseeing. Namely, in such a situation, if there are grounds for suspicion that the person with him, in the vehicle or luggage he carries with him, has items that may serve as evidence in the misdemeanor or criminal proceedings, security guard summoned person to own the content featured clothing, items or group. Thus, if the grounds for suspicion or confirmation of a person referred to deduct, there is a need for the exercise of a search operation by the security officer cannot be applied against a person who is not employed in the protected object, but only if such a person may be temporarily withheld until the arrival of the police, and vice versa if you are happy about an employee in the protected object, then the security officer is entitled to take action and shaking.

¹⁴ Warnings are issued and voice in writing and must be understood.
¹⁵ It is obvious that the Law on Private Security does not provide for the use of electric stun guns, as well as significantly more human resources in relation to firearms. After the use of force, security guard first aid, inform the competent police department, and prepares a report to his superior, who, within 48 hours prepare a report to the police administration.
¹⁶ It is obvious that the Law on Private Security does not provide for the use of electric stun guns, as well as significantly more human resources in relation to firearms. After the use of force, security guard first aid, inform the competent police department, and prepares a report to his superior, who, within 48 hours prepare a report to the police administration.
¹⁷ The provisions of the Law on Private Security in connection with the use of coercive measures, require that the binding agents are used to prevent resistance, self-harm, and escape.
¹⁸ Under physical strength means using special martial arts - surgery, strokes and a combination of surgery and kicks to the extent that the person comply with orders or stop the attack or providing resistance. Physical strength is used to prevent an attack or damage to property.
¹⁹ The use of specially trained dogs permitted only in the case where the use of firearms, and only in compliance with the conditions cases “self-defense” and “extreme necessity” and in a way that does not disturb the citizens by a trained security officers with additional training.¹³
²⁰ The members 55 and 56 of the Law on Private Security Act prescribes the legal requirements and procedures for the use of firearms by private security officers, which, among other things, includes the identification and clear warning, as well as obligations upon the use of force, including the submission of reports the use of firearms and other means of coercion responsible person in the legal entity, which then submits the report with its opinion to the relevant police administration.
²¹ In accordance with the provisions of Article 124, 125 and 126 of the Police Act Republic Serbia, Official Gazette no. 6 of 28.01.2016., And exclusively in terms of “self-defense” and “extreme necessity”.
²² According to Article 20 of the Law on private security, private security jobs in Serbia can be
It also stipulates that when applying the measures no one shall be subjected to torture, inhuman or degrading treatment.

The Act provides for the limitation of these powers, so that the security officer may act only in the manner prescribed by the Law on private security and other regulations, so that the execution of the tasks accomplished with the least harmful consequences. If it is in relation to the circumstances allowed to apply several measures, shall apply the first one that you’ll at least be considered, and the application of measures must cease as soon as the reasons for which they were applied, or when it determines that the task in this way will not be able to perform.

Overall, the authority of security officers have similar powers of police officers, but the main difference consists in the fact that security officers can use their powers only in the zone of the protected object. However, exceptionally, during transport or transmission security money and other valuable shipments and Conducting personal security, authorization may be applied outside the premise, but also in public places, and on the basis of prior consent of MIA.

As police officers, private security officers perform authentication checking the ID card or other document with a photograph, except in private security in cases of refusal of identification, the only sequence, prevent the entry into the protected object.

Overview of persons, objects and means of transportation is also regulated similarly as in the conduct of police officers. However, unlike the police, security officers can switch only visually or using technical means, or cannot make the review of touching. It is anticipated that the review should be performed by a person of the same sex, which means that at the entrance to the protected object be required to be present for at least two security officers - male and female. The provision which stipulates that the security guard calling feature to automatically show the contents of clothing items that carries or vehicles entering or exiting the protected object, raises the question of what happens when a person refuses to call security - whether he will be like the refusal to identify prohibit entry into the protected facility or if you still leave the facility if the person previously identified. It is certain that the security officer cannot force anyone to display the contents of your clothes, objects or vehicles.

Article 46, paragraph 1, item 6 of the Law on Private Security stipulates that “the security officer is authorized to temporarily detain a person who is found in the house or room in offenses and serious offenses, disturbing the peace, until the arrival of the police.” in this connection, it is unjustified and wrong to expect from security officers to qualify what kind of disturbance of public peace and order occurred, so that depending on its assessments in the decision whether or not to detain the person until the police arrive.

made only on the basis and within the framework of the contract concluded in writing between the legal entity or entrepreneur to work private security and service users. The said contract, among other things, must include: clearly defined subject of the contract; method of carrying out contractual activities with the contracting authority of security officers, number and place of work; the type and quantity of weapons and engaged resources, during contractual services and the manner, type and degree of secrecy, the period of storage and use, as well as data protection measures resulting from the contracts.
3. SUPERVISION AND CONTROL, THE CONCEPT AND BASIC FEATURES

In theory and praxis concept of control and supervision of the term is often equated. However, the control and supervision have common elements, which consist in the influence of the body that supervises, or controls at one over which control i.e. checks carried out. So, if the criteria should be continuity in supervision, then the control can be characterized as single or multiple process under control. This control can be marked as an integral part of the control, where control is out of control is possible and achievable, but not efficient.23

However, the term “control” is defined as a comparison of the actual activities of state bodies and agencies, as well as the results of these activities with the activities and results to be expected on the basis of predetermined criteria. In this regard, the control comprises three relatively distinct phases. In the first comparing planned and achieved; after that, followed by phase price, or statements on the basis of execution of probation. The third stage consists in an appropriate intervention, which is not required if the assessment was positive, but it is necessary when you need to remove the identified deviation from the preset criteria.24

The main objective of the control of the security sector, restricting the abuse of power security subjects. In this connection, control must be in the spirit of the rule of law, with the sanctioning of any deviations from the legal procedures and tasks, with the discretionary assessment must be used in the spirit of the law and in accordance with the public interest, to the achievement of public interest were within the set legal frameworks and guidance to the operation of security subjects according to the needs of society rather than individuals.25 The main objective of the control of the security sector is to discover the weaknesses of protection and taking appropriate actions in order to eliminate them.26 After completion of the checks always prepares the report or study of executed checks in the full scope.27

Control of the private security can be: outward or external, carried out by the competent national authorities on the basis of their legal powers and certain organizations and individuals on the basis of constitutionally guaranteed rights (including control over the legality of acts and legality of the work of private security operators) and the internal or internal, and implemented directly operators of private security (checking whether all the activities of a transaction made on time, correctly and in accordance with the approved plan, the given guidelines, orders and established principles).

Report on the completed control contains time basis and to exercise control; name of the authority that made the control, its composition and the name of the supervisor; organizational unit or activity that is controlled; target and control tasks; types and forms of exercising control; established (factual) state (the result of controls); the conclusions of the audit, undertaken emergency measures (orders, decisions, etc.); a proposal for measures to eliminate it-identified deficiencies; proposal of measures against the perpetrators controlled (recognition, sanctions) and Annex (notes, statements, schedules, documents and other).

25 For details, see: Milosavljevic, Bogoljub, Police Science, Police Academy, Belgrade 1997, p. 308-309.
26 By: Tamburic I. “Control as a management function,” Military job, Vol. 57, no. 1, the Ministry of Defense of Serbia and Montenegro, Belgrade 2005, p. 113th
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private security inspection covers (which must have a control and supervisory powers, without the possibility of independent arbitration in cases of violation of legality, because the performance of control activities of the police)\(^{28}\) and administrative controls (including the procedure for issuing licenses under certain conditions and in accordance with administrative procedures), the legality of acts, supervision over the legality of work and the same is done through:

- direct insight into the implementation of the prescribed measures in the area of the Law on Fire Protection, Law on Arms and Ammunition Act, production and trade of dangerous substances and others Law;
- direct insight into the implementation of the provisions of the Law on private security;
- the method of administering the prescribed consent or approval, which is reflected in the control exercised by the Ministry of Internal Affairs and labor inspection;
- the procedure for determining fulfillment of conditions for the work, such as controlling the fulfillment of conditions of storage of weapons and ammunition.

Inspection supervision in the area of private security is necessary for legal (lawful business security and prevent possible abuses of private security operators) and practical reasons (preventing unfair competition and business in so-called. “Gray zone”). The supervisory function in this area involves the use of the concept of control, where the state sets the rules and standards, or the relevant state authority supervise their implementation, while professional associations of private security professional standards of care, in order to create conditions for self-regulation and autonomy of the market (issuance of licenses under certain conditions and in accordance with administrative procedures).

Inspection supervision of the legality of subjects of private security ensures that these tasks are carried out within the area of responsibility and the role of the private security sector, given that the state law entrusts the public service to the private security sector.

Internal control in private security is achieved by professional associations at the level of the private security sector and applies to business entities segment private security (eng. When it is determined that the offer price services below the guaranteed minimum criteria for the creation of these prices, etc.);

4. MONITORING AND CONTROL OF PRIVATE SECURITY OFFICERS-NORMATIVE ASPECTS

In Serbia, a key control and control of private security actors are: the National Assembly Committee for Defense and Internal Affairs (perform indirect external supervision of the private security sector, by legally supervises the work of the MUP), the Committee on Finance, State Budget and Control of Public Spending, how in the field of control of state institutions spend their funds, and whether they are private security services procured legally and practical. In addition to these bodies, the Republican members have the right to ask parliamentary questions (related to the work of certain institutions, or about a specific topic related to the functioning of private security), and the Assembly can establish a temporary

\(^{28}\) The experience of developed countries shows that after reaching the required level of professionalization of the security services, supervisory function take professional associations of private security and the state determines the required control framework
working bodies, such as boards of inquiry and inquiry commissions, and deeply consider a topic or problem, thus, the assembly and its committees have a legal basis for external control of the private security sector.

However, such direct and indirect control and control of private security actors in Serbia, there are other competent authorities, organizations and individuals, including: Ministry of Interior (direct function has an external inspection and administrative supervision) the competent inspection authorities (legally exercised influence the operators of private security), insurance companies (with their policies do not stimulate the provision of good services, as it does not affect the quality of the services of private security entities, as perceived only if the client has a built-in technical means, without considering its quality), clients (subject to commercial contracting based banks and various organizations and individuals, their requirements for security services, affect the type and quality of service) and the trade unions of employees (whose importance in Serbia is still not recognized, but it certainly can not be underestimated). Overall, the current Serbian publicly available comprehensive information on the current the actual effects control and supervision of private security.

Supervision and control of private security officer in detail regulated by the Law on Private Security, which a number of provisions establishes ways and types of performing scheduled monitoring and control. The provisions of the tenth head of the Law on Private Security, overseeing the implementation of the Law on private security was entrusted to the Ministry of Interior. The same provisions of the law does not provide for a separate organizational unit within the Ministry of Interior, and the question of efficiency of performing inspection by the Ministry, since the inspection in this area is not effective if the police officers to the already existing jobs added to some other duty. This solution will result in that the monitoring carried out by police officers Ministry of Interior as delegated tasks, while the priority to deal with other police operations, with or no control, or she will not be fully effective.

In addition to the general powers in the field of inspection, the authorized police officers Ministry of Interior have the right and duty to verify the way of keeping and carrying of firearms, psychophysical ability and educational qualifications of security officers, and that, if necessary, by other means achieve immediate and unannounced access to the performance of tasks private security. Police officers of the Ministry also have the right and duty of the legal entity or entrepreneur for performing private security, the decision to temporarily stop performing private security, if the activity or activities performed or carried without a license or without a signed contract, without the necessary staff and technical conditions, the unskilled and unprofessional manner that may cause harm or danger to the user, security officers or a third party, and contrary to the order of execution of transactions or performing the duties of compliance with the Law.

Also, the competent police authority at the request of the responsible person in a company or entrepreneur, checks whether the conditions for the conduct of the responsible person in a company or entrepreneur, where as a result of subsequent checks, a decision revoke the license for performing activities of private security if it is determined that the data on which the license was issued false and if in persons changed some of the conditions under

29 Article 70 of the Law on Private Security.
which the license was issued.

Especially important is the subsequent control application authorization, as the responsible person in a business organization and entrepreneur shall at the latest within 48 hours of delivery. The reports written to the competent authority on the exercise of power. In this case, the competent authority shall supervise the legality of applying the powers and notify the responsible person in the company. In the event that the coercive measures used in a lawful manner, absent the intervention phase of the review process, and establishing responsibility of the person who used the means of coercion. Significant control powers of the police authority expressed in the domain of the legal entity or entrepreneur, or security officer prohibit the performance of activities of private security, if the activity is performed without license or authorization, without a signed contract, without the necessary human and technical conditions, of unskilled and unprofessional a way that can cause harm to service users, security officers or a third party, and if it performs activities contrary to the order. A special form of control of private security entity, achieved control of the government, which according to the Law on Private Security, the Minister of Interior decision to establish the Expert Council for the promotion of private security.33

An authorized official of the Ministry of Interior, which in the exercise of supervision irregularities implement measures prescribed by the regulations on the inspection. During inspection authorized police officers shall specify the period for the elimination of irregularities in operations which may not be longer than 60 days, unless within that period irregularities are not eliminated, the authorized officer shall issue a decision prohibiting the work, or performing activities of security officers and detective activities that within three days to the Ministry.

CONCLUSION

Private security as a part or component of the private security industry has its own special place and importance in society, where the individual security standpoint it is an important segment of the overall security of each state and the operating factor of national security, while from an economic standpoint, it is also a significant economic activity (exercise great profit, employs a large number of people and an average responsible for 80% of the assets of today’s security state).34

Time, predicted powers of private security provide appropriate conditions for preventive and repressively same operation on different carriers compromising, whose concrete implementation must be in accordance with the envisaged laws and regulations. On the other hand, the supervision and control of private security operators can detect weaknesses of protection and taking appropriate actions in order to eliminate them, which is the main objective of supervision and control to restrict the abuse of power leading factor of private security, in order to perform these tasks within the area of responsibility and their role in the system security. Given that in certain situations the state law entrusts the performance of certain public duties and private security entities. The government at the same time through the control of the legality of subjects of private security and control of observance of legal

33 Article 75 of the Law on Private Security.
34 Above about: Hakala, J; Why regulate manned private security ?, Confederation of European Security Services (CoESS), Wemmel BL 2008 rr. 32nd
standards in this area, indirect appears as the guarantor of the private sphere of security. In this sense, it can be said that private security represents a particular supplement security guaranteed by the state and also affects public safety, tending to equalize the differences between the interests of the individual (protection of persons and property on a commercial basis) and the public interest community. In essence, it is a formal, external, legal, regular, extraordinary and vertical control and supervision of private security operators.

The prevailing conclusion that provided the authority and supervision of private security officers in Serbia are vital function of the functioning and organization of private security undertakings, where their clear legal framework, makes it an institutional basis for the lawful conduct of all holders of the private security, while today their full knowledge of actual effects in practice, can be identified only after the full implementation of standards envisaged by the current Law on private security, during a certain lapse of time in 2017.

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IMPLEMENTATION OF OPEN INNOVATION PRACTICES IN UKRAINIAN SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract: Successful innovation is a major driver to enhance the performance of the company, so nowadays organizations try to strengthen their competitive positions through cooperation and collaboration across networks and strategic partnerships, in line with the open innovation framework. Most recent studies of open innovation focus mainly on the firm level of large multinational technology corporations, but with increasing outsourcing, crowdsourcing and networking, the management of open innovation techniques in small and medium-sized enterprises (SMEs) is becoming more important. This paper intends to explore the major trends of innovation activity in the Ukrainian SMEs sector and to define trends towards open innovation concept realization.

Keywords: SMEs, innovation activity, open innovation, innovation cooperation.

INTRODUCTION

In modern turbulent economic reality, given the tendency for network technologies to expand and the transfer of knowledge, the principles of interaction between business actors are changing drastically. Small innovative companies are not able to survive and provide their competitive advantages in isolation and need to use external technologies or ideas to complement their own internal efforts. It is essential to cooperate or collaborate to be successful in innovation activity nowadays. That is why open innovation tools “are no longer a source of competitive advantage but have become a competitive necessity” [1].

Open innovation has been marked as the new imperative for creating and profiting from technology, “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation respectively” [2]. Open innovation involves several key elements which include networking, collaborating,
research and development (R&D). Competitive advantage often comes from inbound open innovation: today companies should not rely exclusively on their own R&D, as pointed out by H. Chesbrough and A. K. Crowther [3]. The open innovation model allows ideas to come from other sources and in this context innovation projects can be initiated internally or externally at any stage of the innovation process by the firm. Open innovation means that SMEs can extend their networks by cooperating with business partners, including distributors, suppliers, clients, competitors, universities, research institutions and even government agencies to ensure access to external ideas and to exploit the commercialization of their products. In this light, cooperation with other business players may complement the internal efforts of the firms, put the SMEs on a sound path to the market, reduce product development costs and also mitigate managerial difficulties. In a similar vein, the open innovation model allows managers to bring external knowledge into a firm and also put their internal ideas outside, so as to be more efficient in their striving to create an innovative product and establish its market commercialization. But it should be mentioned that SMEs practicing open innovation often face inherent managerial challenges, including the difficulty in finding the right cooperation partners, the complexity in evaluating early-stage technologies, the imbalance between open innovation and the daily business-model and motivating individuals to generate and contribute spillovers [4].

To our knowledge no study exists for Ukraine aiming at empirical investigation of the underpinnings, opportunities and barriers of open innovation implementation in the SMEs sector. The purpose of this paper is to investigate the trends towards open innovation in small and medium-sized Ukrainian enterprises. The paper intends to explore the theoretical and empirical discussion of open innovation practice of Ukrainian SMEs in order to provide answers to the main research questions. Our set of research questions is as follows: what are the major trends of innovation activity in the Ukrainian SMEs sector and are there any differences in innovation cooperation partners regarding a firm’s size.

Given the limitations of information databases for the measurement of open innovation processes, the key conclusions were made on the results of the analyzed statistical data collected from Community Innovation Surveys which took place in Ukraine during 2010-2012 and 2012-2014 according to the European Union methodology.

**SUMMARY OF FINDINGS**

Small and medium-sized enterprises play a key role in the economic growth of many countries because they are the main source of employment. The favorable business environment in developed economies makes it easier for SMEs to be more successful in the process of creating and commercializing their innovation products than in developing economies. The main factors attributed to a conducive business environment in the developed world include legislative framework, the availability of the needed resources (human, financial, informational and technological), governmental financial support, and the proper innovation infrastructure. On the other hand, a non-conducive business environment is characterized by obsolete methods and technologies, too much bureaucracy, negative perception on the part of the customers or entrepreneurs, and the inability to gather much needed support and partnership.

The innovation process in developing and emerging countries is determined not only
by the level of technological and market complexity, but also by the institutions, infrastructure and framework conditions where firms operate. Due to geopolitical uncertainties and complex economic issues, business framework conditions for entrepreneurship and innovation development in Ukraine are mediocre – in the 2015 Global Innovation Index (GII) Ukraine ranked only 64th [5]. In the past years Ukraine has performed well in terms of human capital and research, being well above other lower-middle-income achievers, in particular by reason of its performance in tertiary enrolment and knowledge creation. Ukraine’s business framework weaknesses in relation to innovation policy include poor infrastructure (127th in GII sub-index), rigid innovation linkages (105th in GII sub-index) and market sophistications (89th in GII sub-index). According to the 2015-2016 Global Competitive Index (GCI), Ukraine scores well on indicators like quality of the education system and scientific research institutions, on the other hand, the position of Ukraine is weak in effectiveness of taxation on incentives to invest, affordability and availability of financial services, intellectual property protection and the state of cluster development [6].

Among the main constraining factors of innovation activity in Ukraine are financing difficulties, the lack of access to technology and relevant market information, incomplete innovation infrastructure, poor management and improper planning. It is also possible to mention the underdeveloped level of innovation culture and low motivation to innovation activity as another element obstructing the innovation environment for Ukrainian SMEs.

Table 1: Comparison of the most important indicators of small enterprises innovation activity in Ukraine between 2010-2012 and 2012-2014 [7; 8]

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2010-2012</th>
<th>2012-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of innovation active enterprises (total)</td>
<td>16.9</td>
<td>11.3</td>
</tr>
<tr>
<td>Share of technological innovators (with product, process, abandoned and not yet finished innovations)</td>
<td>6.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Share of product innovators</td>
<td>1.1</td>
<td>-</td>
</tr>
<tr>
<td>Share of process innovators</td>
<td>2.0</td>
<td>-</td>
</tr>
<tr>
<td>Share of non-technological innovators (with marketing and organisational innovations)</td>
<td>10.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Share of total turnover that is generated by enterprises with innovation activities</td>
<td>19.2</td>
<td>-</td>
</tr>
</tbody>
</table>

“-” Data are not available for given period

In order to answer the research questions we need to make out specific quantitative indicators for evaluating the use of the open innovation approach which are available from relevant statistical data. Before examining open innovation practice, general trends of innovative performance in Ukrainian small enterprises should be identified to clarify the opportunities and obstacles relating to the implementation of open innovation tools. The most recent data available from the State Statistics Service of Ukraine is taken from the 2012-2014
Community Innovation Survey. Results show that during the period 2012 and 2014 around 11% of all small enterprises (less than 50 employees) were innovative (Table 1). Compared to the share of innovative firms operating in developed economies such an indicator is critically low. Overall, it was found that just 4% of all small enterprises engaged in the industrial and services sectors in Ukraine were technologically innovation active in the reference period (had carried out a product innovation or a process innovation).

Only one in five of all small enterprises in Ukraine, around 20%, carried out in-house R&D between 2010 and 2012 (Table 2). The most common form of technological innovation was acquisition of machinery, equipment and software – nearly three in every four small enterprises indicated they engaged in this activity. This compares with 78.9% of medium sized enterprises and 80.7% of large enterprises. Over the survey period small firms devote, on average, 24% of their innovation expenditure to in-house R&D efforts as compared with 5% to purchase of external R&D and only 4% to acquisition of other external knowledge.

**Table 2: Percentage of enterprises engaged in technological innovation expenditure in Ukraine by sector and size class, 2010-2012** [8]

<table>
<thead>
<tr>
<th>Type of innovation activity</th>
<th>as % of all enterprises with technological innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sector of activity</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
</tr>
<tr>
<td>In-house R&amp;D</td>
<td>22.1</td>
</tr>
<tr>
<td>Purchase of external R&amp;D</td>
<td>10.5</td>
</tr>
<tr>
<td>Acquisition of machinery, equipment &amp; software</td>
<td>74.6</td>
</tr>
<tr>
<td>Acquisition of other external knowledge</td>
<td>9.9</td>
</tr>
<tr>
<td>Training for innovative activities</td>
<td>20.3</td>
</tr>
<tr>
<td>Market introduction of innovations</td>
<td>12.9</td>
</tr>
<tr>
<td>All other expenditure</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Open innovation works effectively with cooperation as well as with collaboration. According to the results from the 2010–2012 Community Innovation Survey, around one in five Ukrainian companies with technological innovations in the industrial and selected services sectors were engaged in innovation co-operation (Table 3). 17.2% of innovation active small enterprises were engaged in some co-operative activity when developing their product and process innovations, 16.2% of all small enterprises were engaged in innovation co-operation with local partners, compared with only 3.8% of firms that were engaged with partners in the European countries over the survey period.
Table 3: Location of co-operation partners for innovative enterprises in Ukraine by sector and size class, 2010-2012 [8]

<table>
<thead>
<tr>
<th>Country / Region</th>
<th>as % of all enterprises with technological innovations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sector of activity</td>
<td>Size class</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>Services</td>
</tr>
<tr>
<td>Ukraine</td>
<td>20.3</td>
<td>20.7</td>
</tr>
<tr>
<td>European countries</td>
<td>7.7</td>
<td>5.5</td>
</tr>
<tr>
<td>United States</td>
<td>1.7</td>
<td>4.2</td>
</tr>
<tr>
<td>China / India</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td>All other countries</td>
<td>6.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>22.5</td>
<td>21.4</td>
</tr>
</tbody>
</table>

One of the main advantages of the open innovation model is the possibility of accessing a wide range of technical and market knowledge from different sources. In order to specify the prerequisites of open innovation in Ukraine we intend to investigate how important are possible sources of information and knowledge for innovation activities for SMEs. Using category classifications which are comparable to K. Laursen and A. Salter’s [9], the innovation related information and knowledge sources were grouped into four different types (internal, market (business networks), institutional, sector and specialized information). The distribution of firms (as a percentage of all enterprises with technological innovations), according to the importance they attributed to the relevant information sources is presented in Table 4.

There is a definite correlation between the level of significance of the innovation related information source and potential partners for innovative collaboration. Based on the survey results, the most important source of information for innovation activities for all enterprises regardless of firm size is the internal type (it was rated as “high” by around one in three Ukrainian companies with technological innovations). Around 23% of small firms located in Ukraine indicate the knowledge they draw from the market environment is highly important (suppliers, clients, customers or end users are among the business network actors). Next, “conferences, trade fairs, exhibitions” with 13.6%, and “competitors or other businesses in your industry” with 10.55%, are the sources considered as important by the respondent small enterprises with technological innovations. The relatively low percentage for universities and government research institutes seems to suggest that universities and business sector relations are not a matter of concern for a vast majority of Ukrainian firms. There are difficulties in public policy of technology transfer and diffusion, so that it is necessary to provide an enabling supporting framework to overcome the gap between research, innovation and business creation.
<table>
<thead>
<tr>
<th>Type</th>
<th>Innovation related information source</th>
<th>as % of all enterprises with technological innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sector of activity</td>
<td>Small (10-49)</td>
</tr>
<tr>
<td>Industry</td>
<td>Industry Services</td>
<td>Industry Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28.0</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>37.3</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>31.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31.0</td>
</tr>
<tr>
<td>Market (business networks)</td>
<td>Suppliers of equipment, materials, services or software</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>Clients, customers or end users</td>
<td>20.3</td>
</tr>
<tr>
<td></td>
<td>Competitors or other businesses in your industry</td>
<td>10.1</td>
</tr>
<tr>
<td>Institutional</td>
<td>Consultants, commercial laboratories or private R&amp;D institutes</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Universities or other higher education institutes</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>Government or public research institutes</td>
<td>4.6</td>
</tr>
<tr>
<td>Sector and specialized information</td>
<td>Conferences, trade fairs, exhibitions</td>
<td>14.1</td>
</tr>
<tr>
<td></td>
<td>Scientific journals and trade/technical publications</td>
<td>8.9</td>
</tr>
<tr>
<td></td>
<td>Professional and industry associations</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Table 4: Ukrainian enterprises which rated importance of relevant information sources for innovation as “high” by sector and size class, 2010-2012 [8]

Exploratory results seem to convey the assumption that the innovation “openness” level of the respondent sample of Ukrainian enterprises is rather low. These business entities tend to regard their own internal information as a critical source of knowledge in innovative activities. In this regard, it is observed that companies primarily tend to use external search for new knowledge and then develop the technology with their own efforts and bring it to the market. Using the open innovation terminology, SMEs are more inclined to the “outside-in process” than to the “coupled process” [10].

Open innovation practices in the business sector can be characterized by intensive cooperation of various actors through network relationship and greater user and customer involvement in the development of new products. Unfortunately, Ukrainian SMEs are not demonstrating high level of openness to external knowledge, to new business models and
modern organizational principles. Among the key reasons for the underdeveloped open innovation community in Ukrainian companies is a fear of operating openly, and a lack of knowledge about innovation processes and managerial skills for such type of cooperation.

Regarding a firm’s business sector, a few differences in the industry and service sectors can be identified. The results show that service firms are statistically more frequently involved in open innovation activities and engaged in external participation. Many of the firms seem to collaborate with the suppliers of equipment, materials, services or software, clients, customers and end users, whereas the more demanding partner types like competitors, universities or research institutes are used much less frequently. These results are illustrated by the more extensive use of relevant sources for collecting information regarding to innovation activity. Statistically the large firms are more actively involved in innovation collaboration and cooperation with different types of partners such as research institutions, consultancy firms and commercial laboratories. This may be due to the financial resources supporting the innovation collaboration – powerful corporations can afford to pay for consultancy services or joint R&D with other actors in the innovation process.

CONCLUSIONS

Overall, Ukrainian SMEs engage in a narrow range of inter-organisational relationships in the context of open innovation. A vast majority of businesses are rather closed in their innovation processes, and this tendency has direct implications for their ability to introduce new products and services to the market. Moreover, in the sector of SMEs additional problems arise in the implementation of the open innovation model, since the vast majority of these firms are not familiar with the appropriate tools and strategies for such introductions in their business.

Based on the results of research, the tendency towards open innovation seems to depend on firm size – larger companies are more actively involved in innovation collaboration with different partners than smaller firms. Because of their specific characteristics, particularly limited resources, SMEs lack the necessary infrastructure for “closed” innovation processes, based on the development of innovations within an R&D department. Although SMEs are relatively inclined to provide innovation activity in a more open way, the statistical surveys in Ukraine show that open innovation practice is happening primarily among large companies rather than smaller businesses. The larger companies demonstrate the stronger adoption of open innovation techniques: while big corporations are already actively practicing open innovation, small businesses are still just moving in this direction. Thus, extending this line of research to investigate the open innovation practice in large companies would provide a more comprehensive picture of Ukrainian business reality.

It is important to highlight that these findings need further validation and at this stage the paper does not attempt to set managerial recommendations for the acceleration of innovation processes, rather it is aiming to investigate the open innovation prospects in Ukraine, using quantitative research.
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STATE REGULATION OF MIGRATION PROCESSES*

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Abstract: The article discusses the theoretical issues of migration: the existing definitions of migration, its forms, methods of control, factors and causes of change of residence. The article contains material of a sociological survey of urban residents of the Komi Republic. Proposed measures and directions of state regulation of migration in the northern territories are offered. The article ends with the suggestions on priority measures and objectives of science and the public on the migration management.

Keywords: Migration, the Komi Republic, survival, adaptation, state migration policy.

INTRODUCTION

Most scientists in sociology and demography, give three types of population movement: social, natural and migration. In this article, we consider only one - the migration movement. In the broad sense of the word under the migration means any territorial movement that takes place between the various localities of one or more administrative-territorial units, irrespective of the duration and regularity of task orientation. In a narrow sense, mi-
Migration is a complete form of territorial displacement, culminating in a change of domicile, i.e., means relocation.

Migration is a spatial displacement, change in its spatial distribution, i.e., geography. In this sense, the migration does not change the population throughout the territory, in which is its movement. Changing the size and structure of the population only parts of the territory.

Migration represents spatial movement of the population, changing its territorial distribution. In this sense migration doesn't change population of all territory. The number and structure of the population only of separate parts of this territory (or country) changes.

External migration is a departure of the population abroad (emigration) or entrance from abroad into this state (immigration). Internal migration unites the migration processes in the country. In terms of administrative division, migration, divided into intraregional, interregional and inter-district.

There are two types of migrations: organized and unorganized. The main types of organized migration are social calls, livestock migration, organized labor recruitment, reassignment to other areas, the distribution of graduates of vocational schools, colleges and universities. Unorganized, or individual, migration is the territorial movements of the population caused by such reasons as aspiration on the new place to improve financial situation, to create a family, to get an education, etc. On movement time all types of migration are subdivided on: irrevocable, i.e. change of the residence and temporary migration [1].

**FACTORS AND CAUSES OF MIGRATION**

To answer the question about the necessity of state regulation of migration processes, their orientation and forms to understand the nature and motives of population movements from one region to another, it is necessary at least in general terms to consider such concepts as “factors” and “causes” of migration.

We can consider the following three-part scheme: conditions - factors - reasons. The whole environment (natural and social) can be combined with one concept - living conditions. Among them are the conditions that affect a particular process, or the actual factors. Finally, what causes a specific action, is a reason.

Benefits are a partial payment, full or even exceeding those material and spiritual losses incurred by the population, having filled in the sparsely populated, remote and have harsh natural conditions areas. Benefits should promote human resources in rapidly developing sectors of the economy underdeveloped areas and create conditions for normal reproduction of the population.

All factors depend on the capabilities and forms of regulation by the state are divided into three groups. The first group includes the factors that consist of components of living conditions, which either can not be changed or can be changed for a very long time or a huge expenditure of resources. This is typical for natural conditions and geographical location. The second group includes the factors that can be changed gradually, for at least 10-15 years. That is the level of development of the territory, including the creation of productive and social infrastructures. The third group includes operational control factors. They may vary for several years. For example, the establishment or abolition of benefits of the complex, higher wages, the introduction of pension benefits, etc.
The last group of factors of migration is characterized by several provisions, knowing which it is possible to regulate migratory processes. First, migration is influenced by a complex of factors which intensity is various for different regions, different time and different groups of the population.

Secondly, economic factors are the main. Despite recognition of prime value for migration of economic factors, nevertheless, to the middle of the 1970th disputes what of them more important – living conditions of the population or a decent and productive work [2] were conducted.

Thirdly, from the positions of management of migration, not factors of a standard of living and decent and productive work, but territorial distinctions between them are important.

The reasons of migration become clear when carrying out special sociological polls, or censuses (microcensuses) of the population, by inclusion of questions of the territorial movement of the population. By means of them attempt to establish the movement reasons becomes. Such approach is far from attempts to draw conclusions concerning the migration reasons on the basis of data on distinctions in migration or on the basis of comparable characteristics of regions of an origin and the accepting areas.

The main problems of measurement of the reasons of migrations consist in the following: in the choice of significant sets when carrying out inspection and subsets for calculation of dependences; in the choice of reasonable number of in advance certain mutually excluding each other and exhaustive reasons; in the choice of groups of the reasons, expedient from the point of view of the analysis.

The reason of migration is as special form of relationship between objective factors and subjective characteristics, in particular requirements. In the context of behavior factors are the objective phenomenon, and the reasons – the objective and subjective phenomenon. Just because the reason has objective and subjective character, it can not be followed by action, despite achievement of necessary sharpness of a contradiction between factors and requirements. It is connected with action of social norms [3].

Installation of migrants in the new area, is connected with a number of demographic, social and economic changes. Migrants become residents of the area, participate in reproduction of its population, in exploitation of natural resources, in development of economy, etc. Migrants arrive to the area, new to them, possessing experience and knowledge acquired in regions of an exit, having branched related and property communications, etc. In the new area all this or a lot of things from this should be got. Therefore to increase survival of new settlers and to achieve the best migratory results, and also when developing the state (regional) migration policy it is necessary to know the reasons for which the population comes to this or that settlement. We will address materials of the sociological survey conducted in the Komi Republic [4].

Among the reasons of arrival the material motive (26,6%) is most important, among the departure reasons it is on the 4th place – 8,1%. Job search is on the 2nd place (12,3%), at potential migrants it costs on the 6th place (5,5%). Thirdly, respondents wanted to solve problems of the education or education of their children (12,0%). In general it is possible to conclude that respondents generally realize the claims. Therefore not incidentally a rank of the importance of the reasons of departure are not the same than at the arrival reasons. In the reasons of departure the desire of the population to replace the residence is on the first
place. They want to change the north to the south. This desire is especially brightly expressed at residents of Far North: in Usinsk – 65.8%; in Vorkuta – 54.1% and in Ukhta – 54.0%. The desire to return home, to parents, relatives has bigger value for residents of Usinsk – 14.9%; Pechora – 14.7% and Ukhta – 14.6%. Respondents note that the settlement where they live, has no future since production doesn’t develop. Here two cities are allocated: Vorkuta – 18.5% and Pechora – 13.4%.

Having arrived to the new residence, migrants pass the difficult period of adaptation. Some of them pass it successful, others, on the contrary, begin to think of change of the residence again. It is well known that if the person couldn’t realize the reasons why he has arrived to this or that region, he is a potential migrant and under favorable circumstances by all means will fulfill the wish.

Survey materials showed that urban residents have high disposition to the departure from the country. From the answers of the respondents it is known that the proportion of residents who want to leave polar cities is very high. 64, 9% want to leave Usinsk, and 64.4% - Vorkuta. To the south of the republic these sentiments gradually transformed into a desire to stay there to live and work on. There are significant differences in the settings in the change of residence between the local population and migrants. Among the native-born 41.7% want to leave.

The largest share of those wishing to stay in the place of permanent residence of the local population, which amounts to 41.3%, the people who came into the country, the figure is 29.7%. Among decided to leave in the next two years, the proportion of local residents is 7.6%, while the newcomers only 2.9%. Over the next five years, these figures will be respectively 22.3 and 19.9%. That is, the locals are more determined to realize their migration intentions.

Numerous studies in recent years supports the position that the inhabitants of the Far North is not recommended to change the climatic conditions of residence radically. Experts close to population issues, labor and relocation, believe that the inhabitants of Vorkuta and Usinsk preferable to move or to Ukhta or in Syktyvkar and uhtintsam in Syktyvkar, that is, residents of high latitudes should not drastically change the climate, it is harmful to their health . Although the practice and another poll showed - the majority of respondents tend to go outside the country [5].

**MIGRATION POLICY**

The purpose of migration policy in the Komi Republic is to make it attractive for the residents of the regions of Russia, as well as in improving the survival rate of people who came here to live and work. Let us explain that the survival rate - a phenomenon that characterizes the transition newcomer of the old-timers and, therefore, a permanent population of the region is predicted. It is not only the process of human adaptation to the new conditions of life, but also the living conditions of the adaptation to a person's needs.

Coming to a new place of residence, migrants have difficult period of adaptation. Some of them successfully passed this period and become long-standing inhabitants, while others begin to re-think about the changing the place of residence and finding a better life. It is well known that if a person is not able to realize that what he came to a particular region, then it is a potential migrant and under favorable circumstances will
certainly carry out his wish.

Nowadays, many governance practices of migration processes of the Soviet period are discredited, that served as a basis quite common liberal point of view, that the state should eliminate from the management of migration processes. It is impossible to agree because of the presence of many acute problems related to migration, lack of natural migration controls and the necessary conditions for free movement of people, both within Russia and from abroad.

In this regard, there is an urgent need for the development of new forms of migration, and management of the population, based on the realities of contemporary Russian reality and the use of rich historical experience.

Migration processes as a special object of management, have a number of specific features.

1. First of all, migration of population - a very sensitive socio-demographic process, to respond quickly to changes in various factors. In managing migration, in contrast to many other social processes, the effect of management actions, as well as the effect of the factors that hinder their implementation is achieved in a very short period of time. To achieve the desired effect, you need a real-time monitoring the state of the managed system, great importance is information provision management process.

2. Despite the fact that migration has always been characterized by a high element of spontaneity, it can be regulated. However, state migration management can not and should not cover all types of migratory population movements within the country, but only the most problematic migration.

3. Managing migration can be carried out only within the framework of socio-economic, and population distribution, or demographic policy. It synthesizes its elements, as well as itself is an important component in the package of measures carried out by them.

4. Managing migration of the population may consist of the following set of actions: the formation of migration systems; determination of optimal size, directions of migration, the formation of the migratory contingents; facilitate the process of adaptation of the population.

5. Migration processes are closely related to the flow of information, especially on the field of introduction and means of achieving them, not by chance any of migration patterns linked the direction of migratory ways of disseminating information flows. Therefore, it is important information support management decision-making aimed at the control object.

Finally, it should be borne in mind that the state has certain obligations in the management of migration processes, especially in the area of internal socio-economic migration; it refers to the northern regions first. Depending on the objectives, means and resources available to the State for the management of migration processes, it uses a certain system of migration control measures for the population. With regard to the management of migration processes in our recent past, these measures may be divided into administrative-organizational and economic.

The state migration policy is a science-based ideology of the actions of public authorities emanating from an understanding of migration as a complex of socio-economic process and conceptually unifying mechanisms of regulation of migration processes. Under the regulation (control) migration refers to a set of measures to stimulate or restrict the movement
of people in the volumes and destinations that meet current and future needs of the country and ensure the realization of the rights of migrants.

In the development of the state, or regional migration policies must first carry out a specific inventory of territories that would give an accurate idea of the possibilities of using migration as a mechanism for positive impact on the socio-economic life of a region (municipality). In the near future should be:

- Determine the prospects of development of the republic’s economy, including regional (local) labor markets, promising the need for labor and the degree of satisfaction with their own resources;
- Specify the list of localities to be liquidated in the Far North and equivalent areas;
- Specify the list of areas, unfavorable for environmental living conditions.

Migration policies should address the problem of long-term (5-10 years) reductions of human resources in the country and increasing the proportion of people in retirement and the working age. It is necessary now to think of specific mechanisms for implementing migration policy, aimed at promoting the involvement of the Republic of Komi the necessary human resources.

Migration policies can be based on common objectives, principles and guidelines for private, which subsequently refracted in specific areas, i.e. the principle - from general to specific. The main cross-cutting areas of the state migration policy should be:

- Creation of conditions for the free inter-territorial redistribution of the population, and human resources (to ensure the territorial mobility of the population);
- Conducting deliberate selective immigration policy, based on the need to attract immigrants into the country within the established scope and certain quality on a legal basis;
- Assist in the adaptation of immigrants to the new place of residence, including social support for displaced workers;
- The implementation of immigration and counter illegal migration, bearing about criminal nature.

For the Komi Republic (referring to the Far North) priority migration policy is to promote the resettlement of the population, liberated from the enterprises in the new environment proved uncompetitive and assistance in attracting the necessary human resources for the effective functioning of the enterprise.

Priority directions of migration policy are the restructuring of the system of settlement and settlements, the creation of a new reference framework of settlement, given the prospects of development of the country’s economy; facilitating the resettlement of pensioners assisted resettlement of people living in the settlements to be liquidated, the development of the rotary system of formation of labor resources, as well as a method of shift work (Lytkina 2014).

It can also note that the impact of society on migration, representing aggregate geographically localized and occurring at a certain time of migration acts can be carried out using the following migratory behavior of regulators.

The first and most flexible regulator is to change the territorial and population differences in the levels of the objective components of living conditions that satisfy a variety of primarily basic, needs of the people. This change may be subject to public planning and development complement the balance of territorial redistribution of the population. Differ-
ences in living conditions and situational impact on migration, as the objective factors, and gradually affect the needs and value orientation, i.e., are forward-looking.

Another trend is the impact of regulation of behavior to the needs and values of potential migrants, i.e. facilities management. In this regard, it should be provided three different levels of impact on migration behavior. On an individual level, no doubt, have to be taken into account mental and other features of the subjects, it is necessary to conduct an appropriate selection of the migrants. At a group level, an important regulator of social norms may serve, in particular, aimed at neutralizing the customs and traditions that impede the implementation of socially necessary migration behavior. Finally, in the mass level, that is, in relation to the population as a whole, we should talk about such educational measures, by which a person would have perceived values, equivalent duty. An example is a trip to the virgin lands for the construction of BAM, etc. It is in fact - the realization of certain value orientations of high social importance [6].

CONCLUSION

Nowadays there is a need of fundamentally new socio-economic mechanism to attract and retain young people in the Komi Republic, in the newly developed areas of the North and the Arctic. So it is necessary to find common ground to reconcile the interests of the state, society, family and individual. To attract and retain the population and, above all, young people should be offered a set of economic incentives and social guarantees that can make the Komi Republic and the North of Russia as a whole attractive and competitive in determining their life strategies population. As working tools could be: "The concept of youth migration policy"; «The economic mechanism of crediting of demographic and migration measures to attract and retain young people in the Komi Republic, in the newly developed areas of the North and the Arctic» and several others.

It should be propose and justify legislative initiatives, the list of economic incentives and social guarantees, designed to attract and retain young people in the Komi Republic, in the newly developed areas of the North and the Arctic. To develop an effective mechanism for financing activities related to the solution of demographic and migration problems of the Russian North and the Arctic. To offer levels of responsibility and the amount of financing (joint financing) of demographic and migratory actions for preservation of the youth contingent of northern territories.

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REFERENCES


SECURE ACTIVITIES MONITORING AND AUDITING IN THE CLOUD

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Abstract: Faced with the current trend of enterprise computing infrastructure being relocated from physical data centers into the cloud, systems and applications security administrators as well as developers are forced to dedicate particular attention to new set of security problems. When making decision about what sort of cloud service to use, the public cloud appears to be the most cost effective. However, to use the public cloud service decision makers have to trust the cloud service provider, who has complete access to the file storage infrastructure and all client files including security relevant system and application log files. In this paper we make a parallel between the financial and computing system event monitoring, we present key clarifying definitions and propose a encryption based log file data privacy solution by selectively protecting only privacy-critical log records. Our solutions do not impose any demands on the existing systems solutions or current systems logging infrastructure maintenance On the contrary, the only conditions are imposed on developers of cloud privacy-sensitive applications and designers of log parsers and analysis tools. In summary, our solutions move system log privacy problems in the cloud into the application layer.

Keywords: Cloud, security, system monitoring, auditing, accountability, forensics, XML, digital signature, encryption.

1. INTRODUCTION

After the hardware platform, the operating system and applications have been well hardened and after all protective programs have been installed, configured, loaded and activated, monitoring system activities and periodic auditing of all collected auditing data of security importance remains as important systems security administrators duty.

Maintaining a secure operating system requires administrator’s vigilance, because the original security configuration for any system tends to fail over time. Security and performance auditing, i.e., examination of the system readiness is an essential component of
the operational and security maintenance. Probably the most valuable tools available to a security administrator are tools that enable an administrator to continuously monitor and record specific computing events. The ability to record computing events visible from the systems point of view is valuable in particular when potential legal action may have to be taken against an identified system attacker.

Probably the most difficult types of cases to prosecute in the courts of law today are those cases that involve computer security breaches or system intrusions. Prosecution is made difficult by the fact that computer technology and its practical use are far ahead of the common prosecutor’s expertise and laws that are not sophisticated enough. Many states and countries take different positions on what constitutes a crime in the electronic domain. Even if there were definitive criteria that could be universally applied, prosecutors would still have the difficult task of providing proper evidence. In such situations, the more evidence the better.

Overwhelming computing systems complexity, the nature of computer related crimes and the lack of proper evidence makes it obvious that absolute system protection is virtually impossible. With this in mind we must recognize the importance of the consistent system monitoring and auditing. For instance, computing system administrators need to monitor system activities and must be able to answer at any time the following questions:

- What do users do while using the system to run their applications?
- Which user’s programs have access rights to which computing resources?
- What are normal systems events?
- What is normal computing load?
- What events need attention and what kind of attention?
- and so on.

![Figure 1](image)

**Figure 1:** Systems and application programs emit systems relevant event descriptions which are collected, classified and recorded as logs by a log collector such as the `syslogd` server, [5] [6].

The ability to answer these questions implies continuous system tracking and monitoring of the activities of individual user programs, better known as application programs.
Each operating system is delivered with some sort of system monitoring and auditing tool set. One such a de-facto standard tool set is the UNIX/Linux syslog computing event logging facility [1], [2]. In response to the numerous security deficiencies of the syslog facility a number of more secure non standard replacements have been proposed [3], [4].

While designers of safer and more efficient replacements of syslog facility are focused on the fact that applications have to remain unaffected and that applications have to follow the same API to emit messages, our approach is to modify API by adding a layer of security enhancing software in order to preserve the privacy of logging messages in environments such as the public cloud or open networks.

2. SYSTEM EVENTS TRACKING

Computing events visible in the operating environment can be considered to be systems events. Dedicated operating system event tracking facilities collect various process generated messages (See Figure 1) and produce preliminary reports of events that took place during the execution of systems or application programs. These preliminary reports, are made up of chronologically ordered, time-stamped event descriptions, are known as systems journals or logs. We refer to such events as systems audit events. For instance, any attempt to use a disabled user account could be an instance event to be emitted by the systems access control software and recorded by the event tracking message collector server, such as the syslogd program.

There are several ways to define an event. For example, a clipping level or threshold may be set to generate an event which is to be reported and recorded, e.g., when more than three failed logon attempts in a short period of time could represent an audit event which has to be tracked. The declaration that a given system audit event took place is based on a predefined event criteria of an if-then kind.

Events are tracked by the event time and description recording in order to inspect the recorded data at some later time, at the so called audit time. Every event that results in some negative consequences has to be associated with the user whose action directly or indirectly caused the event. In most operating environments every event recorded should have an owner, i.e., a person accountable for the event.

Definition 1: Accountability is characteristic or an attribute of a subject that is conceptually rooted in ethics and law with several implicated characteristics (meanings) like
- answerability,
- responsibility,
- blameworthiness, and
- liability

Systems journals or logs are raw chronological reports with time stamped event descriptions so that administrator may walk back through the sequence of logged events in order to discover the cause of some operational problem or some intrusion event. Sequential inspecting of logged records is a fundamental system auditing procedure, the so called audit trail. Auditing is a common activity in business, finance and accounting. In all cases of auditing the first documents to be audited are accounting journals which are time stamped financial event records equivalent to system logs. Similar to financial records and journals
Auditing, we have systems and log files auditing for two possible reasons:

- Operational and management improvement, or
- Security and safety reasons.

Besides the accounting audit trail it is possible to perform operating systems security audit trail too. Security audit trail may be defined in the following manner:

**Definition 2:** A security audit trail is a chronological record of system activities that is sufficient to enable the reconstruction and examination of the sequence of environments (relevant objects) and activities of subjects surrounding or leading to an operation, procedure, or event in a security-relevant transaction from inception to final results.

An accountability subsystem is a collection of systems components used to associate a subject (e.g., some application user) with its past actions performed upon some computing resources, with past associations time stamped and documented. Accountability documents are known as journals, log records or audit trails.

From the security point of view logs are important for:

- Detecting security violations (detecting intrusion events),
- Re-creating security incidents, and
- Forensic security violation investigations, (production of evidence).

From the operational administration and management point of view audit event tracking logs are used for:

- System performance improvements,
- System administration improvements, and
- Production of system accounting management reports.

Accountability record management requires that audit event tracking systems be efficient and secure. However, if administrators do not review the logs in a timely manner or if logs are not produced and maintained in a secure and consistent manner, the logs may not be admissible as evidence in a court of law and may not be of any use for and operational needs. In our work we focus on the security of log messages that must cover two fundamental requirements:

- Message integrity (message should be modification protected), and
- Message privacy (message should be readable only by the intended final user).

Both of the above log message protection requirements are essential when log messages become exposed to the cloud providing service or open network users.

For better log management a typical log message is sent to a central logging facility (See Figure 2). According to the IETF specifications [5] systems audit event tracking involves log message transmission from the message source program and transmission between log collection servers that may be one of three operating entities:

- Devices, (original receivers of messages from systems programs and application processes in the given host),
- Relays (log data collectors and forwarding servers), and
Collectors (final log data collecting destination).

In our work we focus on the very first entity, i.e., on the application program which is the source of the log-message and message security until it is used for log analysis. Log message content must be protected from the source to the destination.

**Figure 2:** Central logging of syslog messages.

Monitoring the log files on multiple hosts can become administration unfriendly as the number of networked hosts increases. Configuring a centralized log message collection on a central logging server can:
- Reduce the administrative burden of log data management, and
- Enable faster response to some adverse events.

As Figure 2 illustrates, various network traffic processing devices, including routers, switches, firewalls, virtual private network concentrators, and so on, have operating systems with logging facility capable of sending log messages to other systems logging facilities. Most of the secure log message exchange across the network are based on some sort of message encryption tunnel service such as SSH or IPsec. We take a different approach by delegating log message security problem solving to an original application program and log analysis software developers.
3. LOG MESSAGE PROTECTION

Typical log data processing server is customizable, i.e., configurable. System administrator customizes log facility server by altering certain configuration variable values which appear as some sort of instructions to the server on how to perform its service. Server programs read configuration parameter values:
- By default at load time, or
- On demand when instructed to do so, at run time.

Default reading of configuration parameters at load time can be performed using three different methods:
- Reading parameter values introduced as command line arguments when starting the server,
- Reading parameter values defined as environment or shell variables, or
- Reading parameter values found in the appropriate configuration file.

In case that the same parameter has three different values, one presented at the command line takes precedence over the shell variable equivalent, which would take precedence over the one presented in the configuration file.

Figure 3: Possible destinations of log messages.

A system event logging facility such as one based on the **syslogd** daemon, receives log messages from various programs and routes each message to the destination specified by the configuration parameters (See Figure 3). An example of the log message or log text line is shown in Figure 4. Single line of logged text is made up of two distinct parts:
- The “header” which contains the date-and-time stamp, and
- The event identifying text string.
In the example shown in Figure 4, clear text string describes the logged event details which are:

- The message originating system’s hostname or IP
- The message generating source type or facility, and
- The descriptive message.

Since all logged data are processed in clear, i.e., are open and readable even when some details should be guarded as private, we propose not to interfere with any existing logging facility requirements and operational details, but to have privacy sensitive application programs perform encryption of the clear message portions and to send each message digitally signed.

Major restriction found in the standard system monitoring solutions is to limit event description text string to a single line with fewer than 1024 characters. Consequently, our log record privacy solution had to use cryptographic algorithms and binary-to-text data codes that would produce as short strings of text as possible. Based on this argument, data codes like the base64 code are favored. Lines which would upon protection become longer than allowed, are not subjected to any protection.

The scope of this report does not permit detailed presentation of the cryptographic algorithms used. In what follows, only functional details are outlined. For example, let us consider small block of log lines:

03/03/2016 08:34:21 -> User ‘Bill’ logged in
03/03/2016 08:34:28 -> Navigated to google page
03/03/2016 08:34:32 -> Option A changed to B

A developer of the privacy sensitive application, uses system API to identify computing process (to get PID) of the program at runtime. To identify precisely the source of the log message, the acquired PID can be embedded into each log message. Furthermore, we propose XML as log message structure defining language, i.e., it is expected that the original application program generate XML formatted log lines which may appear as shown below:

03/03/2016 08:34:21 -> <p id=103>‘Bill’ logged in</p>
03/03/2016 08:34:28 -> <p id=204>Navigated to google page</p>
03/03/2016 08:34:32 -> <p id=204>Option A changed to B</p>

The fine grain identification of the original log line segments is additional feature that our approach offers. Parsing of the XML structured log line is simpler and more flexible.
To protect log line integrity, i.e., to prevent illegal alterations, we propose truncated digital signature which is represented by the `<s>` XML element:

03/03/2016 08:34:21 -> `<p id=103><m>Bill' logged in</m><s>5g$haa6bc3</s></p>
03/03/2016 08:34:28 -> `<p id=204><m>Navigated to google page</m><s>2035a6bf78</s></p>
03/03/2016 08:34:32 -> `<p id=r204><m>Option A changed to B</m><s>450b25c3e1</s></p>

When log line privacy is of the essence, the text portion of the log line is encrypted, (e.g., public key presented by the log analyst’s certification authority may be used). In our example, with both integrity and privacy protected, the text is not readable while the time stamp is.

03/03/2016 08:34:21 -> `<p is=103><cm>0f98+5h%m*2o84765c&!.)s2</cm><s>2035a6bf78</s></p>
03/03/2016 08:34:28 -> `<p id=204><cm>s3#08b&jkr71(/0*hd5%28*v</cm><s>2035a6bf78</s></p>
03/03/2016 08:34:32 -> `<p id=204><cm>a@k)n56l3#sp2(+g$/sdfl20e</cm><s>450b25c3e1</s></p>

We have performed several application experiments using shell scripting, C, Java and PhP programming languages. In order to minimize XML overhead [7] and binary-to-text encoding overhead, we use minimal XML tag lengths and we favor data codes such as base64 code.

5. CONCLUDING REMARKS

Our work presented in this report addresses problems of secure systems operational intelligence gathering using standards such as syslog facility while focusing on technical issues of how to preserve selected log lines content privacy and integrity.

We keep in mind that system and application attackers desire to alter log lines that could possibly be used as forensic evidence. In order to prevent hiding attack tracks by altering logs we use digital signature and we hide sensitive line content by encrypting selected lines and even portions of sensitive lines.

When business case would demand privacy, all reported solutions offer encryption of the complete log file, which apparently is a coarse grain log privacy preservation method. Our approach as a fine grain method applies encryption and digital signature only on selected sensitive log lines and their distinguished portions.
REFERENCE


INSTRUCTIONS FOR AUTHORS

TITLE OF THE PAPER (TNR - 14 pt Bold)

First A. Author¹, Second B. Author², Third C. Author³, … (TNR 11 pt Bold)

¹ Association name, City, COUNTRY, e-mail (TNR 10 pt)
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Abstract: The length of abstract maximally 10 lines, type of font TNR 9 points normal, justify.

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These are the guidelines for writing the paper for the International Journal of Economic and Law (IJEL). Papers should be written in format that is described below. Please follow these instructions.

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Preferably use A4 (297x210 mm²) page (by ISO 216 and ISO 478) format with margins (mm): 25 top, bottom, left and right.

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Each table is numbered and table captions are in TNR 10 pt, placed above the table, centered and have the following style.

<table>
<thead>
<tr>
<th>Table 1: Table caption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1</td>
</tr>
<tr>
<td>Row 1</td>
</tr>
<tr>
<td>Row 2</td>
</tr>
<tr>
<td>Row 3</td>
</tr>
</tbody>
</table>
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\[ \text{Figure 1: Figure caption} \]

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Equations are left justified 5 mm from left with equation number at the right margin in font TNR 10 pt Italic.

\[ R_a = 0.65 \cdot R_{max}^{0.9} \]  \hspace{1cm} (1)

3. CONCLUSION

Write a short review about work and research done in paper and indicate paper highlights.
Referencing (literature references)

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Based on the recommendations of the Centre for Evaluation in Education and Science (CEES), in order to harmonize the format of references with a leading international database dedicated to the evaluation, Military Technical Courier for referencing (citation and references to literature) applies Harvard referencing System, i.e Harvard Style Manual.

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When in a paper we use content that belongs to another author it can appear in the following forms:

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At the end of paraphrasing, summary views, or pointing to a source, in parenthese list the author’s name and year of publication, separated by commas. If the intent is to point to

the pages of the summarized content, that page or pages should be listed too (Petrović, 2005, p.126) or (Petrović, 2005, pp.12-18).^2

- Decision making process consists of several stages, which are links in a chain, each of which has its place and importance (Petrović, 2005).
- Decision making process consists of several stages, which are links in a chain, each of which has its place and importance (Petrović, 2005, p.126).

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Different institutions, companies, universities or other structures may be the authors of certain publications. They must be cited in the same way as individuals - authors:

- Quantitative Risk Modeling provides the ability to precisely define warning limits and optimal reserves (Standard & Poors, 2005, pp.16-18).
- Quantitative Risk Modeling gives the ability to precisely define warning limits (Ministry of Environmental Protection, 2005, p.16).
- The results of the research conducted by MIT (2010) show that the use of these technologies achieve significantly better results.

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^2 When citing pages that have been used or the contents which are quoted, use (for example) p.18 when it comes to one page, and pp. 25-29 when it comes to multiple pages.
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When quoting the law, rules, etc. which have been published in the Official Gazette of the Republic of Serbia or the Official Military Gazette, according to publication name and number, with year of release:

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If for a particular reference the year of issuance is unknown, instead we state nd:

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³ If there appear more than one author for a particular source, cite the first name, and for other state et al., which is Latin abbreviation "et alii" meaning "and others".
Multi-criteria analysis is an indispensable tool in solving the problem of decision-making (Petrović, 2005b, p.78).

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6. Publisher of the printed edition,
7. The words "Available from:" with full Internet address in the angular <lower / higher> brackets,
8. The word "Downloads" with the date of receiving / use the content.

Specifying an electronic book from which we used certain content should be done in the following form:
Surname, comma, initial of the first name, period, comma, year of publication of the printed version, comma, book title (italics), comma, phrases [e-book] in square brackets, place of publication of the printed edition, comma, publisher of printed editions, the words "Available at:" with full internet address in an angular (smaller / bigger) brackets, comma, the word "Downloads" with the date of receiving / use, full stop.


**CORPORATE ISSUES**

Publications of various institutions, organizations, institutions, shall be cited in the following order:

1. Name of organization
2. Year of publication  
3. Title of the publication,  
4. Place of publication,  
5. Publisher.  

Specifying publications from which content was should be in the following form:  
Organization name, comma, year of publication, comma, title of book (italic), place of  
publication, full stop.  

- USAID, Implementation of ISO 9001 in small and medium-sized enterprises, 2005  
  Kragujevac, Qualitass Education.  
- Institute for standardization of Serbia, 2008, Quality management systems -  
  Requirements, Belgrade, Institute for Standardization of the Republic of Serbia.  

**JOURNAL ARTICLES**  
Journal articles are cited with the following elements, in the following sequence:  
1. Author(s),  
2. Year of publication,  
3. Title of article,  
4. Title of journal (italic),  
5. ‘Volume’ - no full stop,  
6. Edition number in the cycle of the magazine - in small parenthesis, no full  
   stop,  
7. Page numbers in the journal.  

Specifying journal articles from which we used certain content should be done in the  
following form:  
Surname, comma, initial of the first name, full stop, comma, year of publication,  
comma, title of article, journal title (italic), comma, ‘Volume’ - without a period, comma,  
number of the edition of the journal cycle - in small parenthesis without full stop, full stop.  

- Brown, C., 2008, Multicriteria analysis, European Journal for Operational  
  Research, 22(3), pp.89-112.  
- Stopić, S., Friedrich, B., 2011, Pressure hydrometallurgy - a new chance to non-  

**CONFERENCE PAPERS**  
Papers presented at conferences, published in the conference proceedings, cited  
according to the following elements in the following sequence:  
1. Author(s)  

** Specifying articles from the Military Technical Gazette must be in a given form, with a  
   bilingual display of the title of the Military Technical Gazette.
INSTRUCTIONS FOR AUTHORS

2. Year of Published Proceedings,
3. Title of paper,
4. Pages in the proceedings,
5. Conference title (italic)
6. Venue of the conference,
7. Conference Date,

Specifying papers from conferences should be in the following form:
Surname, comma, initial of the first name, full stop, comma, year of publication of
Proceedings, comma, title of paper, the article in the Proceedings of the Conference,
comma, title of the conference (italic), comma, conference venue, the comma, the time of
the conference, full stop.

• Brown, C., 2008, Multicriteria analysis, pp.89-112, Operational Research

THESES, DISSERTATIONS, RESEARCH REPORTS

Theses and dissertations are listed with the following elements, in the following
sequence:
1. Author (s)
2. Date of creation / edition,
3. The title of the thesis / dissertation / research (italic)
4. Paper category - master theses, doctoral dissertation, etc.,
5. Educational / research institution where (and on whose behalf) the paper was
prepared.

Specifying the thesis, dissertation or research report from which contents was used
should be given in the following form:
Surname, comma, initial of the first name, full stop, comma, year of creation /
publication, comma, title of the paper (italic), comma, category of paper, comma, name of
institution, full stop.

  Metropolitan University.

WEB PAGES

Web site content often has corporate authors, and in some cases, the authors are not
specified at all. If so, specify the name of the content. In extreme cases, specify only Internet
address.

Web pages from which we used certain content are given in the following order:
1. The author(s)
2. Name of the content (italic)
3. The word [Internet] in square brackets,
4. The words "Available from:" with full Internet address in angle <smaller / bigger> character,
5. The word "Downloads" from the date of receiving / use the content.

Specifying a Web site from which we used certain content should be done in the following form:
Surname, comma, initial of the first name, full stop, comma, title of content (italic), the word "Internet" in square brackets, comma, the words "Available from:" with the full address of the angular (lower / higher) brackets, comma, the word "Downloads" on the date of use / download content, full stop.


**LAWS, REGULATIONS, RULES**

Laws, regulations, rules, etc., that have been published in the Official Gazette of the Republic of Serbia or the Official Journal of the military, are given in the following order:
1. Title of publication,
2. Edition / year of publication
3. Name of the law, regulation, ordinance, etc.
4. Place of publication,
5. Publisher.


**WORK OF UNKNOWN AUTHORS**

If the author of the material that is quoted in the work is unknown, reference is carried out in the following order:
1. Title of publication (italic)
2. Year of publication,
3. Place of publication (if known)
4. Publisher (if known).

EXAMPLE REFERENCE LIST
(LIST OF LITERATURE)


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