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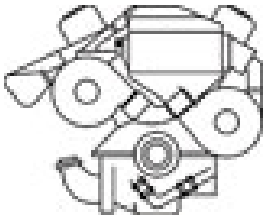

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Edited by
Zoran Čekerevac

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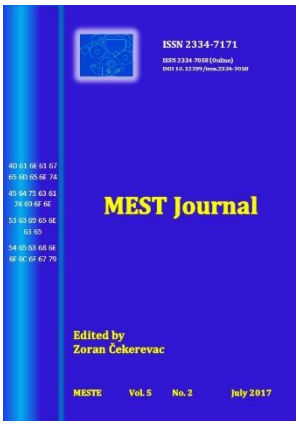

MEST Journal is an international academic journal, the official journal of the non-profit organization MESTE, published online, as well as print, which publishes scientific and professional research articles and reviews in the English language. MEST Journal is published from Belgrade - Serbia and Toronto - Canada. The focal point of the journal is at international level, with the view on matters from a global perspective, but, also, some papers concerning some local specific events could be published. The science and technological advancements and their socio-political impact that happens all over the world can find a place in the MEST Journal. The journal is indexed by Index Copernicus in ICI Journals Master List ICV from 2015.

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Belgrade, January 15th, 2018

Welcome to the newest issue of the MEST Journal!

Last year we have started to use a new platform for publishing our journal, Open Journal System (OJS). All our previous issues we republished on it. So, we have two versions of our journal now. This will be continued in this year, also, to give our authors and readers enough time to adopt. The journal is changing its shape, but it remains to follow its mission. At the end of 2017, founders of the Faculty of Business and Law have founded the new faculty, the Faculty of Information Technology, which will work in the frame of the "Union – Nikola Tesla" University in Belgrade. Therefore, it is to expect more articles in the IT in the future.

The MEST Journal is registered in DOI system by CrossRef with ***DOI 10.12709/issn.2334-7058***. All articles published in this issue, as well as in the previous issues of the MEST Journal, have their own DOIs. The MEST Journal is registered in **doiSerbia** of the **National Library of Serbia, COBIB.SR, Matica Srpska Library, COBISS.SR**, **Google Scholar, CrossRef, OALIB, EleCas** base of **KoBSON,** the **Index Copernicus ICI Journals Master List, Scilit**, **ROAD**, **ERIH PLUS**, and in the **ResearchBib** (IF: 2017 Evaluation Pending).

We keep the practice that articles, that have undergone peer review, and will be published in the next issues, we make available to readers in the form of preview - early reading. The focal point of the journal remained at international level, with the view on matters from a global perspective. However, due to their importance, in this issue have been published some papers relating to some specific local events.

This issue is published online and in print. In this issue, fifteen of submitted papers were published, of which four were classified in the group of research scientific papers, and nine in the group of the scientific review articles. There is also one scientific discussion, and one position paper published. Most of the articles is multidisciplinary. However, five of them can be predominantly classified to the field of management, four to the group of society politics, three to the group of economics, two to IT, and one to the group of education.

We follow the mission and vision of the journal, and we help authors to publish their works and present their achievements in the most convenient way. However, we point out that the editors do not censor the works that we publish, as well as the published works, can contain and/or proclaim views that could differ from the views of the editorial board. We check articles on plagiarism, but we are not able to guarantee the accuracy of the data published in scientific and professional works of our authors. We believe that our authors are honorable and publish only their original works with really achieved results. For the quality of papers that we publish, we thank the authors and reviewers who did their job well and conscientiously.

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Zoran Čekerevac

Prof. Dr. Zoran Čekerevac
Editor-in-chief

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- Specials of direct relevance to industrial entrepreneurs
- Debates on key industrial issues
- All facets of industrial development

These are basic, but not exclusive themed areas.

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SOME UNSUSPECTED APPLICATIONS OF THE BASIC PRINCIPLES OF LIBERTARIANISM

Walter E. Block
Harold E. Wirth Eminent Scholar Endowed Chair and Professor of Economics, Loyola University, New Orleans, USA

Nelson David Chavez Salazar
Tanque de Pensamiento Ludwig von Mises - Bogotá (Ludwig von Mises Think Tank – Bogota), Bogota, Colombia

JEL Category: **Y90**

This is an interview with Professor Walter E. Block, one of the most important contemporary theoreticians of libertarian political philosophy, and economics in the tradition of Austrian School. It is a pedagogical exercise around the ideas of freedom, and is addressed to all those who wish to know or deepen their knowledge about Block's theory. The methodology used was the "structured interview", very common in qualitative research, which consists of a list of pre-established questions that were answered in writing. Four thematic areas are considered: Block´s life and career, his opinions on political reality, his theory, and his final reflections. In the interview, an emphasis was made on the Hispanic "world", a place to which the defenders of freedom have paid attention in recent times, due to the consolidation of totalitarian regimes (Venezuela is the case that stands out the most), and to the presence important social problems. However, it is also important to note that the Hispanic world has also been important for the development of libertarian theory, because there have emerged great thinkers of this current, which are widely mentioned by Block.

Nelson David Chávez Salazar: Professor Block, thank you very much for accepting this interview. It is an honor to be able to talk with you.

1 LIFE AND CAREER

NDCS: Professor, you are one of the most important libertarian theoreticians nowadays and a reference for all those who identify ourselves as anarcho-capitalists. In addition to this, you are also one of the leading exponents of the Austrian School of Economics. I would like you to tell us a little about your beginnings, how did you become one of the most important defenders of the ideas of Liberty? Did you ever participate in the "dark side of force" (statism)? And if so, how did you reach the light?

Walter E. Block: David, thanks for your very, very kind words. I was born Jewish in 1941 in Brooklyn, New York. Pretty much everyone I came in contact with was a leftist of some sort. Some were out and

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out card-carrying Communists; others were merely "fellow travelers." By osmosis, I started out as a liberal pinko, pretty much of the Bernie Sanders stripe (a fellow Brooklyn Jew, he and I were on the Madison High School track team together, and ran in similar events: half mile and longer).

NDCS: You were related to the objectivist movement of Ayn Rand. In your opinion, what are the two most valuable things that this system of thought has? And what are the two of the things you definitely reject?

WEB: Yes, I was indeed so "related." Miss Rand came to Brooklyn College, when I was a senior there, and I attended her lecture to boo and hiss at her, since she favored free enterprise, and "everyone" knew that this was economic fascism, and responsible for vast exploitation and poverty. To make a long story short, she and her then chief lieutenant, Nathaniel Branden, started me on my long road of conversion to libertarianism. They did so by recommending to me two books: Atlas Shrugged by Ayn Rand, and Economics in One Lesson by Henry Hazlitt. Throughout my teaching career, I have used these two books as required reading for my introductory to micro economics classes. This path of mine toward libertarianism pretty much ended when I met my friend and mentor, Murray Rothbard, who converted me to anarcho-capitalism.

NDCS: Now let's talk a little more about your brilliant academic career. For the knowledge of our readers, Professor Block has more than 500 peer-reviewed publications, as well as dozens of books. He was a senior economist at the Fraser Institute and he is a senior associate at the Ludwig von Mises Institute. In fact, I had the honor of being his student at Mises University 2017. He has also taught at prestigious universities in the United States, and this is where I want to highlight a fact that catches my attention a lot and is that some of those universities are public, such as Baruch College, Rutgers University, State University of Stony Brook, and University of Central Arkansas. So, someone might ask, how can an anarcho-capitalist work in a state institution? Of course, you are not the only one, both your teacher Murray Rothbard and your colleague Hans Hermann Hoppe taught at the University of Nevada Las Vegas. I confess that, personally, if I were presented with the opportunity to teach in a public university, I would consider the offer. How to resolve this apparent moral dilemma?

WEB: Thanks again for your compliments. I think the resolution to this "apparent moral dilemma" can be found in the words of Murray Rothbard, who famously said: "The libertarian sees the State as a giant gang of organized criminals, who live off the theft called 'taxation' and use the proceeds to kill, enslave, and generally push people around. Therefore, any property in the hands of the State is in the hands of thieves, and should be liberated as quickly as possible. Any person or group who liberates such property, who confiscates or appropriates it from the State, is performing a virtuous act and a signal service to the cause of liberty." (Source: Confiscation and the Homestead Principle (1969), https://www.panarchy.org/rothbard/confiscation.html)
If this is literally true, and it is, it is, then "taking" money from the government is a virtuous act, not one in need of defending in the first place, as seemingly illicit. Nor is it only, I, Hoppe and Rothbard who are "guilty" of so doing. Pretty much everyone in society is "immoral" on this ground, for we all use government roads, eat food subsidized by the state, utilize city and national parks, use statist fiat currency, mail letters in its monopoly post office, live in homes covered by zoning and building regulations, avail ourselves of doctors mandated by law to pass its licensing requirements, etc., etc. The only ones who do not face this presumed "dilemma" are those hermits who live isolated in the woods; or those who kill themselves. But libertarianism is not a suicide pact. So, it is a positive virtue, not something to apologize for, to "take" money from the government. But this only applies to libertarians and other innocent people, not statists. For them, taking money from government is akin from transferring from one pocket to another.

2 POLITICS

NDCS: Since we are talking about thorny issues, let's talk a bit about politics. In the United States presidential election of 2016, you launched a group called "Libertarians for Trump." What was it exactly? Did you want Donald Trump to simply get

the Republican nomination? Or was it a support that also extended to the general election?

WEB: Yes, I was among those who started not only "Libertarians for Trump" but also “Scholars for Trump.” I did so not for the Republican nomination (my favorite, then, was Rand Paul), but only for the general election. Why? And how do I reconcile this with my decades-long, unwavering support for the Libertarian Party, which also had a candidate in the 2016 U.S. Presidential election, Gary Johnson?

An economist was once asked, “How is your wife?” Came the answer, “compared to what?” In like manner, I vastly preferred the Donald to Hillary. The latter seemed to want to pick a war with Russia, of all places. The former said he could get along with Putin, and, further, claimed that US intervention in Iraq, Libya, Afghanistan, etc., were unwise and would not occur under his watch. (In the event, I am greatly disappointed in Trump’s foreign policy, but still think Mrs. Clinton would have been worse). As for the LP, my advice to libertarian votes was to support Gary Johnson in all clearly red or blue states, but in the purple ones, then support Trump. In this way we could have our cake and eat it too: run up national support for the LP, and keep “crooked Hillary” out of the white house. As for the second group, Scholars for Trump, Hillary supporters took the position that only rednecks, ignoramuses, “deplorables,” denizens of fly-over country, would favor her opponent. I wanted to demonstrate that scholars (people with PhDs, medical degrees, lawyers, etc.) would also support him. In the event, we garnered over 4000 signatories for "Libertarians for Trump" and about 150 for “Scholars for Trump.”

NDCS: This interview is aimed at the Hispanic world (Spain and Ibero-America), so I would like to ask you about an issue that is very close to all Hispanics: Venezuela. What is your reading of the situation that exists there? And, in your opinion, what measures could help to overcome the crisis?

WEB: Short answer: socialism is what ruined the Venezuelan economy, and capitalism is the only cure for it. Long answer: socialism is what ruined the Venezuelan economy, and capitalism is the only cure for it. Ok, ok, let me add to that a little bit. We need capitalism of the laissez faire variety, not crony capitalism, in which large business concerns preclude competition so as to feather their own nests. And, this includes respect for private property rights based on homesteading, and licit title transfers, such as trade, gifts, gambling.

NDCS: Let's talk about your vision on libertarianism. Within this philosophy has emerged a group whose social thinking is very similar to that of the modern left, what in the United States you call the “liberals”, or what we call “progress” in Spain and Ibero-America. These "libertarians" are in favor of anti-discrimination laws and foster a wrong view of tolerance, according to which we must give our approval to all the behaviors that come our way, even if they may seem immoral or unpleasant. That is why public opinion often believes that libertarianism is synonymous with licentiousness. But, paradoxically, these “libertarians” cannot accept that there can be libertarians who profess the principles of bourgeois morality, or libertarians who oppose multiculturalism or gender ideology. What is your opinion?

WEB: I think a sharp distinction must be drawn between libertinism and libertarianism. They are spelled almost in the same way, and, indeed, they are not 180 degrees apart from each other. All the more reason to strive mightily to distinguish between them. Libertinism says it is good, virtuous, admirable, to engage in deviant sexual and other types of practices, such as drinking, drugging, unusual sex practices, sado-masochism, etc. Libertarianism maintains, only, that if these practices are engaged in by consenting adults, they should be legal. This philosophy offers no other evaluation of them. That is in a nutshell, “thin” libertarianism. It is limited to the non-aggression principle (NAP), and private property rights based upon homesteading. In sharp contrast, left wing “thick libertarians” maintain that these practices, plus many others such as being tolerant of all non-invasive practices, favoring mixed marriages, supporting the LGBT community, are part and parcel of libertarianism. In this they are totally and completely mistaken. One can be a libertarian in perfectly good standing while hating all these groups and activities. The only thing required is that no violence be initiated against them. Contributors to the Bleeding Heart “libertarian” blog are in the main such people. In effect they are

trying to hijack libertarianism to their own personal ends. I regard that as an evil. As it happens, I like chess, baroque music and swimming. Suppose I was to define libertarianism as inclusive of these tastes of mine. I would then claim that if you didn't engage in these preferences of mine, you were not, really, a libertarian. If I did this, I should be roundly condemned for misrepresenting libertarianism. I would be engaged in almost fraudulent behavior. This is precisely what these thick libertarians are doing. Their views should be vociferously rejected by all supporters of our beloved philosophy.

3 THEORY

DCS: Now let's talk a little about your theoretical approaches, all of them very deep and interesting. You have a book entitled "Defending the Undefendable", the only title is truly provocative, and I recommend it to our readers, you can find an edition in Spanish produced by Unión Editorial. Basically, you defend there a series of activities that the common man might seem scandalous and controversial, but always, within the limits of the Non-Aggression Principle, such as prostitution, drugs use, blackmail and non-contribution to charity, just to mention a few. Among all these issues, I would like to ask you about one: child labor, which is a very common phenomenon in some countries of Ibero-America. What is your vision on this issue?

WEB: I do indeed have a chapter in Defending I (I have already published Defending II, and am now working on Defending III, both with an entirely new cast of characters) on the employer of child labor. So, I do not think that child labor is per se a violation of rights. Much of this depends upon context, wealth in the society, culture, common practices, etc. I think it is a crime and a shame for the government to require schooling up to age 16, in the U.S. Many children, even far younger than that, feel that such compulsory education is akin to a jail sentence, solely for the "crime" of being young. They would be far better off in the work force, and, were it not for the minimum wage law, they would be able to attain gainful employment from which they could learn on the job. On the other hand, to nowadays in a developed country force a 3 year old child to work in a mine, or in a factory, would properly be called child abuse, a crime under libertarian law. However, in a very poor country, where the only way to keep such a youngster alive would be such employment, then that would be legitimate. Why did we have such child labor in the past, up until the early days of the industrial revolution? It was because we were so poor then, and the work of children was necessary to keep them alive. We no longer suffer from such squalid conditions, not due to legislation prohibiting it, but because of greater wealth, caused in turn, by economic freedom.

NDCS: One of the great debates within libertarianism revolves around abortion. It seems that you have managed to overcome the classic division between "pro-life" and "pro-choice". Could you tell us how you did it? What is your theoretical approach?

WEB: If I had to summarize all of my work in libertarianism, it would be that I apply its basic concepts, the NAP, property rights, not merely rigorously, not even fully, nor consistently, but rabidly and maniacally. I am an extremist on this matter. I go wherever these basic principles lead me, without fear or favor. This includes my Defending series, and abortion, too. Here, I ask: Who is the owner of the "property" in question: the womb? My answer: the first possessor of it, the woman. Then, I ask, what is the status of the unwanted fetus? My answer is, Trespasser. This is certainly clear in the case of rape; less so when the pregnancy involves voluntary sexual intercourse. My many publications on this subject, one of these days I'll come out with a book on this subject, justify this position. What does libertarianism have to say about the ejection, or eviction, of innocent trespassers as are all pre-born infants, no matter the source of their creation? Removal in the gentlest manner possible. As a result, I have created the evictionist position, and now vociferously defend it: the mother may remove the fetus, a human being ever since the fertilized egg stage, whenever she desires to do so, and for any reason or no reason at all, but she may not murder that young person. In the last trimester, with present medical technology, the fetus will be viable; but not in the first six months. However, medical technology will improve the timing. The pro-life position maintains that the mother may not kill this young child, nor remove it from her "premises." The pro-choice philosophy opines that she may do both. My

evictionism stance is thus a compromise between the two, allowing the latter but not the former. In my view, this is the only correct libertarian solution to this challenge. And challenge it is. Ron Paul is staunchly pro-life, while Murray Rothbard was equally strongly pro-choice. There can hardly be any two more highly credentialed libertarians than these two. Yet, they were 180 degrees apart on this matter. Happily, I think, evictionism can point in the proper libertarian direction.

NDCS: Another issue that is very striking within your theory is that of "voluntary slavery", an expression that may sound contradictory. How do you understand it?

WEB: In my view, our rights are alienable, not inalienable. If the latter, then we may not sell or give them away. But, to the extent we may not, our ownership is attenuated. If I “own” a pen, but may not sell it or give it away, then my “ownership” is improperly tuncated. But the same goes for my freedom. If I may not sell or donate it, then I am not truly free. (See what I mean about rigorously following basic libertarian principles wherever they may lead?) My child, say, has a horrid illness. It will cost $5 million to cure him. I don’t have that amount of money. But you, David, are a rich man, who has long wanted me to be his slave. So, I sell myself into slavery to you. I benefit, since I value my child’s life more than my freedom; you, since you rate my servitude to you more than that measly amount of money. We both gain, in the ex-ante sense, as is the case with all voluntary commercial interaction. Should this contract between us, David, be declared invalid? Then, my child dies. And, libertarian principles are violated.

NDCS: Another topic that you have written a lot about is the environment. In fact, you are one of the great references of "free market environmentalism". A couple of years ago, you wrote a book with engineer Peter L. Nelson entitled "Water Capitalism: The Case for Privatizing Oceans, Rivers, Lakes, and Aquifers" I tried to make a summary in Spanish, so that people are encouraged to read it. There you propose the privatization of absolutely all water bodies. Could you tell us a bit about it? In particular, how could rivers be privatized, bearing in mind that they change course? Or the groundwater? A subject that in the book is treated very technically.

WEB: Yet again we have an example of me following basic principles, this time private property rights, wherever they lead us. I have a three-part series on this general topic. First my book on privatizing roads, streets, highways, all vehicular thoroughfares. This is but an implication of property rights; plus, it will save thousands of lives, due to competition from private road owners. Second, is the book to which you refer, which does indeed involve “the privatization of absolutely all water bodies.” There is no difference in principle between land and water. Water is like fast moving land (mudslides); land, is like slow moving water (ice). If privatization is justified in the one case, it is in both. What are the benefits? Removing the tragedy of the commons. In the aftermath of Katrina, some 1900 people died in Louisiana. A tragedy. The cause? The levies holding back the Mississippi river failed. Who built them? The U.S. Army Corp. of Engineers. Are they still in business? Yes. If anything like that happened in the private sector, those responsible for the calamity would be long gone. That is one of the important reasons why we have a reasonably good economy. If we privatized this river, and, indeed, all bodies of water, we would put this aspect of our economy on the same reasonable basis. The third installment in this series, also co-authored with Peter Nelson, is Space Capitalism. We maintain that the same principles should apply to the Moon, Mars, all other heavenly bodies, and our attempts to lift off the third planet from the sun. Private property is more just and more efficient than either non-ownership or government ownership. Period. My motto in this is, If it moves, privatize it; if it doesn’t move, privatize it; since everything moves or does not move, privatize everything.

4 FINAL THOUGHTS

NDCS: Thanks for exposing part of your theory, Professor Block. To finish, a couple of simpler questions. The first is: with what libertarian thinkers from Spain and Ibero-America do you identify more?

WEB: I strongly identify with the following: Francisco de Vitoria, Domingo de Soto, Martín de Azpilcueta, Tomás de Mercado, and Francisco Suárez, Luis de Molina, Diego de Covarubias y Leyva, Diego del Castillo de Villasante, Domingo

Banez and many others from the School of Salamanca of the 16th century. In the modern day, I am greatly indebted to Jesús Huerta de Soto Ballester and his colleagues at King Juan Carlos University of Madrid such as Philipp Bagus and Miguel Angel Alonso. There is also, in Spain, the Juan de Mariana institute of Madrid.

In Brazil there is the Instituto de Estudos Empresariais in Porto Alegre. In Sao Paulo is located Helio Beltrao of the Mises Institute Brazil. Guillermo M. Yeatts is a leader in the Argentinian Austro-libertarian movement. There is a Mises Institute in Cuba, whose leaders have recently been arrested for supporting free enterprise in that country. Such courage is extraordinary. There is also the Peruvian Hernando De Soto who wrote "The Other Path" and who can forget the very important Universidad Francisco Marroquín in Guatemala. This is one of the fountainheads of free market thinking in Central America. There are Mises Institutes in the following Hispanic countries: Brazil, Chile, Colombia, Ecuador, Cuba and Spain. As far as I am concerned, no nation can be all bad that boasts a Mises Institute.

NDCS: Finally, what advice would you give to all of us who try to spread libertarian ideas in the Hispanic world? Here we are faced with a hostile terrain, we are facing giant Welfare States, and in some cases totalitarian regimes, as is the case of Venezuela, of which we have spoken here, but also that of Cuba, Nicaragua and Bolivia.

WEB: The two people responsible for converting more of the population to libertarianism are Ayn Rand and Ron Paul. These two had almost opposite personalities and techniques for publicizing our philosophy. Dr. Paul is and always was a "sweetie pie." His personal demeanor was always kind and gentle. Anyone who characterized Miss Rand in that manner would be subject to the rough edge of her tongue in no short order. What do I infer from this? It is that there is no one best way to "spread libertarian ideas in the Hispanic world" or in any other world for that matter. So, what is my advice? Enjoy yourself. Promoting liberty should be FUN! Engage in this activity in the manner that best suits your own personality, your own style.

5 FINAL GOODBYE

NDCS: Professor, it was a real pleasure. Thank you very much for your time.

WEB: David, I am honored that you would interview me for your important organization.

The interview was conducted by Nelson David Chávez Salazar
in New Orleans on November 25th, 2017

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UTILIZATION OF DEFENSE INFRASTRUCTURE COMPONENTS AT THE TIME OF THE CRISIS SITUATION

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JEL Category: **H56**

Abstract

Critical infrastructure is inescapable for the preservation of the essential functions of society, health, safety and life quality of the population from an economic and social point of view and its disruption or destruction would have serious consequences for the Slovak Republic due to the impossibility of preserving its functions. The defense infrastructure, as the part of the critical infrastructure, is a necessary element of supporting state defense and it is formed by the services and activities provided to the Slovak Armed Forces for ensuring effective protection and defense of the Slovak Republic. The defense infrastructure consists of land, buildings and facilities, telecommunications, energy and transport systems, information networks and supplies of state material reserves. An important part of the defense infrastructure are the services and activities provided to the armed forces to provide state defense. These services and activities include financial, medical, veterinary, transport, telecommunication, postal, supply, accommodation, research and scientific services, manufacturing, repair and construction activities.

Keywords: *Infrastructure, defense, risk, facilities, global environment, strategy*

1 INTRODUCTION

The Slovak Republic has become a member of NATO as a part of a collective defense and security system in 2004. The same year, it was also accepted as a member of the European Union. By its membership it has obtained political and economic stability guarantees as well as the possibility to actively participate in shaping, implementing and strengthening the European Security and Defense Policy. This fact did not mean only the integration in the well-established community of Western European states, but in addition to the advantages and wider possibilities, it also meant signing up to the common direction and fulfilling their ambitions, including the defense and protection of critical infrastructure. On these changes, the Slovak Republic responded to the preparation and adoption of new strategic documents - a security and defense strategy. Developments in the global security situation,

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changing the nature of threats and risks have prompted the need for effective protection and defense. In addition to traditional threats such as natural disasters, negligence, technological accidents, unauthorized penetration into computer systems or criminal activity, a new threat emerged on the security scene -international terrorism. This phenomenon focuses its efforts in addition to traditional objectives, particularly on the critical infrastructure of the states, in order to cause mass sacrifices, damage, to create fear and a sense of danger. An important part of an effectively functioning defense system of the Slovak Republic is defense support, which also includes critical infrastructure. The mission of defense support in the state defense system is to provide adequate means, services and activities for the fulfillment of the state tasks in the framework of the defense of state sovereignty and also during the operation of Allied Forces in the Slovak Republic.

2 GLOBAL SECURITY ENVIRONMENT

The global security environment is characterized by high instability, uneven development, and high dynamics of ongoing changes, the complexity of ongoing security processes. While the risk of conventional large-scale war is relatively low, it is not possible to exclude the escalation of tensions through potential regional conflicts with a direct impact on Euro-Atlantic stability. Enlargement of Russia's sphere of interest and influence, hybrid and non-military threats, terrorism, mass migration, the spread of extremism and radical ideologies as well as social turmoil, resulting from the unstable economic situation and globalization, can pose a significant security risk for all European states. These threats can arise very quickly and dynamically and are hardly identifiable or predictable. Increasing uncertainty and unpredictability of the security environment, turbulent and difficult predictable development of the situation in Ukraine, Syria, the countries of Africa, the Near and the Middle East, ethnic unrest, extremism, etc. create the prerequisites for a rapid reaction of the international community (Trebula, 2016). The instability of the countries close to the Euro-Atlantic area, as evidenced by recent developments in Syria, the Middle East, and the Middle East, can have a direct impact on our security, particularly in terms of the rise in extremism, terrorism, arms and drugs smuggling, trafficking in human beings and illegal immigration. An increase in coordinated cyber attacks, as a very effective tool for disrupting the work of government administrations, the economy, and the critical infrastructure, is also a current threat to the Euro-Atlantic area. Disruption of key state infrastructure objects due to a terrorist attack or other reasons, a major natural disaster or a technological breakdown in the state would always mean great losses on life and property, moral damages, or would lead to disorganization of society as a whole. The destruction of state infrastructure may endanger food production itself, heating, industrial production and, in fact, distort of the whole society. The collapse of any state may result in infrastructure failures at a transnational scale, also in the wider geographical area, which is interconnected by different networks. The infrastructure of each individual state is highly vulnerable and very interconnected, both inside and outside and necessary for the operation of the society. Terrorist groups have proven they are capable of coordinated attacks at the same time in different locations. Planning attacks long-term ahead, targeting even a few years, they consider all factors to minimize their own efforts and maximize profits.

The protection and defense of critical infrastructure elements are based on the principles that:

- the protection and defense of critical infrastructure is primarily the national responsibility of the individual state and it is a part of the common European framework,
- the public administration (government, prosecutor's office, courts, ministries, armed forces, security corps, etc.) is responsible for the protection and defense of the critical infrastructure together with the owners and operators of the individual critical infrastructure elements,
- information concerning the protection and defense of critical infrastructure and its exchange must be protected against misuse,
- the protection and defense instruments shall be set proportionally to the level of risk involved.

3 PRINCIPLES OF THE PROTECTION AND DEFENSE OF CRITICAL INFRASTRUCTURE

The protection and defense of the critical infrastructure are understood as a summary of the activities, mechanisms, forces, means, and measures for:

- prevention of risk factors,
- averting an attack on a critical infrastructure element,
- avoiding negative external or internal influences endangering the existence, stability, and operation of the critical infrastructure element.

The protection of individual elements of critical infrastructure is organized in full by a legal person, owner or administrator as part of its own property protection measures. The defense of critical infrastructure elements is realized for objects classified as objects of special importance and for other important objects. These are objects that have a strategic importance in the time of the war for the defense of the state, the activities of the armed forces or the functioning of the state economy (Zibrík, 2011). The critical infrastructure protection can be understood as a set of measures provided by the owner of the facility, private security services, and designated police units to protect the assets of defense infrastructure objects classified as objects of special importance and other important objects. It is carried out continuously both in the state of safety and during the crisis situation.

The objective of protecting critical infrastructure is to:

- prevent intrusion into the facility and to prevent activities in the facility by not allowing individuals or groups,
- reduce or prevent the emergence of seamless risk / terrorist attack, sabotage, theft, and others,
- ensure the functionality of the technology and the usability of stored stocks,
- ensure the safety of the operation and the resulting safety of the inhabitants' residence in the vicinity of the objects,

Object protection is divided into basic and enhanced property protection. Protection is divided by security method to:

- protection of objects classified as objects of special importance,
- protection of objects classified as other important objects.

Basic property protection of objects means the protection, in particular, of classical theft, unauthorized access to information forming business secrets and unauthorized access to information systems. Basic property protection is organized and funded in full by a legal entity, owner, or property manager as part of its own property protection measures.

Enhanced property protection is understood to be measures taken to avoid the creation of barriers to the capability and determination of the object in terms of the interest and needs of the state, the loss of some of the capabilities.

The measures for enhanced property protection of objects are mainly directed against the attempt:

- an unauthorized person disrupt the integrity of the object, or attempt to enter the premises by overcoming mechanical barriers,
- an unauthorized vehicle to enter the facility may interfere with its integrity by overcoming mechanical barriers,
- the unlawful bringing of dangerous substances into the facility,
- the illegal removal or export of dangerous substances from the object, threatening the operation of the assigned object.

The main elements of enhanced property protection are:

- reinforcement of mechanical and preventative means,
- electronic security systems,
- human resources,
- organizational arrangements,
- connection to the police registration alarm centers,
- the preferential and effective intervention of the forces and means of the police corps in the event of a crisis situation that can not be managed by the forces and means of the

physical protection unit located in the object (asymmetric attack).

The defense of strategic critical infrastructure objects (objects of special importance and other important objects) is a set of measures that are planned and performed by the designated units or departments of each individual state with the intention of discouraging, mitigating or repelling the enemy's attack and thus preventing the occurrence of undesirable consequences due to acts of violence.

The aim of defense is:

- not to permit the movement and maneuvering of access to the object and the prevention of intrusion into the object of unauthorized and armed individuals or groups,
- to slow down, stop or repel an attack by armed individuals or groups trying to control the object,
- to disarm armed individuals or groups who have entered the premises,
- to restore and secure the security of the object.

When occupying the area of defense, building a defense, and conducting combat activities to defend designated objects, the commander uses the knowledge, information, and recommendations of the Head of the security service. If the threat of a terrorist attack persists or there is reasonable suspicion that the designated objects will continue to be the target of the armed terrorist group even after dissuading them, the commander of the unit defending the object will create a system of regime measures. Implementation of regime measures will be ensured by the commander of the unit by monitoring, patrolling and creating a network of control points.

4 DEFENCE INFRASTRUCTURE IN SLOVAK REPUBLIC

As a part of the preparation for state defense, it is mandatory to select and classify elements of objects of special importance or other important objects for state defense and determine the way of their protection and defense. Updating the inclusion of defense infrastructure elements into individual categories and how they are protected and defended is performed annually. The ranking list describes how to protect and defend the defense infrastructure element in a time of security, state of emergency, war, and counter-terrorism. The aim is to ensure that the protection of these objects is ensured using modern technologies, but especially that the electronic security systems are connected to the centralized protection of the police corps in order to perform an effective intervention of predetermined forces and means in case of disruption of the object. Mechanical barriers must be built in such a way that they can not be overcome unjustifiably in a time shorter than the time required for reliable detection and observation of an intruder by industrial television or by members of physical protection. At the same time, a range of documentation is set up to ensure the protection and defense of objects. Plans for the protection and defense of objects are classified information. Information from these plans is sensitive information and is available under a special regulation (Brezula, 2017).

Based on the content definition of critical infrastructure, it is clear that the Slovak Armed Forces will participate in the maintenance of the public order and internal security of the state. The Slovak Armed Forces, as one of the main authorities for protecting and defending defense infrastructure elements, is likely to be involved in reducing the risk of endangering the existence and stability of defense infrastructure elements or averting attacks on defense infrastructure elements or their system of protection and defense.

Based on this goal, it is possible to identify the use of the Slovak Armed Forces in securing tasks related to the defense of defense infrastructure elements such as:

- a tool to reduce the risk of endangering the existence and stability of an element,
- a tool to avert an attack on an element or its system of protection and defense by reacting and interfering with a possible attack.

The Slovak Armed Forces will be used to support other state authorities to eliminate these threats:

- in case of threat of possible terrorist attacks,
- in the event of internal unrest that threatens the democratic foundations of the state caused by extremist groups,

- in the event of mass and uncontrollable migration of the population,
- in the event of natural disasters, industrial accidents, disasters, and extensive forest fires.

Based on the scenarios of possible threats, individual types of plans are developed for each type of threat. At present, the following types of plans are used in the Slovak Armed Forces:

- the plan of the Slovak Armed Forces in case of a terrorist attack,
- the plan of the Slovak Armed Forces for the mass migration of persons,
- the plan of use of the Slovak Armed Forces at an emergency time in the event of natural disasters,
- the plan of the Slovak Armed Forces at the time of emergency in case of accident and disaster,
- the schedule of using of the Slovak Armed Forces in a state of emergency in large forest fires.

5 DEVELOPMENT OF CAPACITY AND REQUIREMENTS FOR THE SLOVAK ARMED FORCES

As mentioned hereinabove, the current security risks focusing on the deteriorated situation in Central Europe, the issue of the protection and defense of critical infrastructure needs to be addressed as a matter of priority and without delay. Its disruption, destruction, or disrepair would cause partial or total failure of state security. For this reason, it is necessary to conceptually solve the security situation, to ensure the preparedness of the protection and defense of the defense infrastructure in all areas so that the subsequent response to the targeted and conducted terrorist attacks on the defense infrastructure is effective (Marchevka, 2015).

Based on the current situation in the defense sector in the field of security and performance of tasks in relation to defense infrastructure, we propose and recommend the basic requirements capability development in the following areas:

1. The definition of the responsibility of individual organizational units in the process of command in the field of defense infrastructure is currently not determined by any internal regulation that would define concrete responsibilities and specific tasks in relation to the protection and defense of the defense infrastructure elements.

Recommendations:

- to appoint a person responsible for the elaboration of the defense infrastructure development concept in the defense sector of the Slovak Ministry of Defence,
- to create a joint commission with the participation of all the departments of the ministry to fulfill the task,
- to carry out a thorough analysis with a focus on the current state of affairs with a proposal to eliminate the persistent deficiencies in the management and security of defense infrastructure,
- to adjust legislation, the doctrinal environment that ensures the fulfillment of given tasks,
- to define the specific roles and responsibilities of individual officials at each level of control and command,
- to carry out regular joint inter-ministerial negotiations with elements corresponding to the individual areas.

2. Recent analyzes of the security system of the Slovak Republic have pointed out, among other things, that it lacks the necessary institutional framework for fulfilling critical crisis management/defense infrastructure tasks. At the same time, the Slovak Armed Forces as a tool for implementing a real and practical defense of critical/defense infrastructure in the event of a non-military crisis situation does not have a firm position in crisis management.

Recommendations:

- it is necessary to initiate the initiative for the implementation of critical infrastructure into the domestic crisis management system and consequently to the process of incorporating the Slovak Armed Forces into the Integrated Rescue System as an integral part of supporting the state defense.

3. The current material and technical equipment of person responsible for central evidence of the defense infrastructure does not allow to

fulfill tasks related to work with data-intensive websites (eg: road network portal).

Recommendations:

- to ensure certified computing equipment able to connect to the classified network with emphasis on the transmission and distribution of classified data from the central register for responsible officers in the Slovak Ministry of Defence.

6 STRATEGIC DEVELOPMENT OF DEFENSE AND SECURITY OF THE SLOVAK REPUBLIC

Defensive planning is a specific system of planning and allocating financial, material and human resources to safeguard the defense of freedom, independence, territorial integrity and the democratic system of the state, the fundamental rights and freedoms of its citizens guaranteed by the constitution of the state, the spiritual values of society, life, health and property of persons public property and the environment in the event of invasion or threatening the state with alien powers (Školník& Belan, 2015).

Defensive planning at the same time represents the processes and procedures by which individual states (pacts, communities, and alliances) fulfill their role in the defense of the state. It encompasses a wide variety of steps and measures, ranging from administrative ones, such as the legislative regulation of laws, regulations, standards, or actions and practices of individual public administrations, to physical material measures consisting, for example, of building defense infrastructure objects.

Defensive planning is one of the most complex and most important areas in this respect because it is essentially overlapping with almost all the activities of the state. Its complexity lies in the fact that individual measures need to be reconciled with a large number of overlapping and sequential steps. Its importance lies primarily in the fact that many measures take effect only after a few years from the start of their implementation and, on the contrary, their omission or mistakes in the implementation of some measures will be negative only after a few years but with more serious consequences.

Defensive planning is a system designed to make the military system more transparent and to make military spending transparent. It allows the distribution of military expenditures on operational, necessary for the common life of the army, and for development, intended for arms and modernization projects. With regard to defense planning processes, the Parliament approves not only the total amount of the defense budget but also the individual programs through which the objectives set are to be achieved. It emphasizes that the strategic objectives are set by the armed forces. At the same time, defensive planning is characterized as a system that allows a rational balancing of defense requirements with available financial, material and human resources. What is more, it ensures the availability and efficiency of the use of resources that are allocated to the defense.

The basic processes of defense planning are:

- planning, which represents long-term (strategic) planning,
- programming that represents medium-term planning,
- budgeting, which represents short-term planning.

Long-term strategic planning is based on the defensive policy of the state, its defense and security objectives, defense visions, security strategic environment, economic and security forecasts, concepts of planned forces structure, technologies, and so on. Long-term plans are generally set up for 10 to 15 years in Alliance member countries.

Medium-term planning is based on directives for state defense policy, basic governance documents and alliance requirements, state defense assessments, state legislation, state resources available, and the demands of the armed forces. It is focused on the realization of objectives and tasks resulting from long-term plans through programming. Programming is the process of implementing programs and projects, which results in a balanced process and the effective distribution of available resources to provide the required capabilities and capabilities of the armed forces and to support the defense of the state. Medium-term plans are generally set up

in the member countries of the Alliance for a period of 3 to 6 years.

Short-term planning is based on long-term and medium-term plans, allocated financial resource limits and set priorities. It is aimed at elaborating financial plans, drafting, and budgeting of individual programs, sub-programs, projects and program elements. Short-term plans are generally set up in the member countries of the Alliance for a period of 1-2 years.

The basic solution for the development of the Slovak Ministry of Defense is the defense and capabilities requirements of the Armed Forces arising from the Defense Strategy of the Slovak Republic, generally binding legal regulations and international obligations and other relevant defense policy and planning documents.

The Slovak Republic secures its defense in NATO's collective defense system. The need to face all threats, challenges, and risks to the Slovak Republic, wherever these arise, creates increased qualitative and quantitative requirements for capabilities of the Slovak Armed Forces. The character of combat activity in international crisis management operations increases pressure on the development of new capacities of the Slovak Armed Forces, with an emphasis on deployability and sustainability in operations far from the territory of the Slovak Republic. NATO and the EU, in response to this development, apply a comprehensive approach using a wider range of tools and mechanisms, including the development of new, highly sophisticated and resource-intensive defense capabilities.

Designated units of the Slovak Armed Forces will most likely be transmitted to peace support operations and anti-terrorist operations, with a focus on crisis prevention, stabilization, and reconstruction efforts. Priority in the Slovak Armed Forces capacity development remains the building of deployable and sustainable forces in the forces of high preparedness and their potential deployment and maintenance in operations outside the territory of the Slovak Republic. These forces will be universally equipped, staffed and trained to respond quickly to emerging crises and will be prepared to effectively fulfill the roles of international commitments with emphasis on NATO and the EU.

7 CONCLUSIONS

For the reason of the current security risks and worsening of the situation in Central Europe, the issue of the protection and defense of defense infrastructure needs to be tackled as a matter of priority (Sahin, 2017). That is why, because its disruption, destruction, or disrepair would cause partial or total failure of state security. Hence, it is necessary to conceptually solve the security situation, to ensure the preparedness of the protection and defense of the critical/defence infrastructure in all areas. The issue of protection and defense of critical/defense infrastructure is extremely wide. In spite of it, the elements of the critical infrastructure and the tasks necessary for protection and defense have been clearly identified in the Slovak Republic in the recent years. However, it should be remembered that the protection of critical or defense infrastructure is not a one-off activity, but it is a process that requires constant attention. This means that the defense infrastructure operators themselves need to constantly address this issue and continually develop its methods and to incorporate the latest trends and knowledge in the field.

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STRATEGIC PARTNERSHIPS FOR INNOVATION AND INTELLIGENT CONCEPTS FOR TRANSPORT AND MOBILITY

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Abstract

The European Commission aims to create a Single European Transport Area by removing residual barriers between modes of transport and national systems, facilitating the integration process and facilitating the emergence of multinational transport providers with the possibility of intramodality. The Integrated Transport Strategy of the Republic of Bulgaria until 2030 provides for specific measures to achieve strategic objectives, answer specific priorities, and solve the identified problems in the transport sector. The thesis of the presented paper is that to reduce fuel consumption and increase the energy efficiency of transport, deploy alternative energy sources, improve transport system management (through intelligent transport and information systems and by increasing institutional capacity), as well as to develop efficient intermodal solutions, the creation of cluster associations in the transport sector is crucial. The research made has brought forward certain practical achievements discussed hereto. Further different strategic forms within the transport sectors are investigated, related to the process of clustering.

Keywords: Clusters, strategic alliances, transport sector, European transport policy

1 PRIORITIES OF EUROPEAN TRANSPORT POLICY

The third White paper on the future of the transport sector until 2050, named "Roadmap to a Single European Transport Area - towards a competitive and resource efficient transport system", the Commission describes the transition of the transport sector from the old to the new challenges and identifies ways to overcome them (COM_COM(2011)0144, 2011). The position of the executive body is revealed in setting an overall target of reducing greenhouse gas emissions by at least 60% by 2050 compared to the levels in 1990, without hindering transport development and endangering mobility, together with a current goal for intermediate reduction of around 20% by 2020-2030 compared to their 2008 levels. However, these targets appear far too low compared to those set at the Paris Conference on Climate Change in December 2015 (Council of the EU, 2015), namely to reduce greenhouse gas emissions by at least 40% between 2021 and 2030. The achievement of drastic cuts in

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emissions by 2020, the common transport policy must address, resolve and present economic and environmental challenges. This means more limited and cleaner use of energy by transport, better exploitation of modern infrastructures and further reducing the negative impact on the environment. The White Paper on Transport sets out 10 objectives (such as transfer of 30% of freight road transport, to rail, sea transport or IWW by 2030, reaching more than 50% by 2050; tripping the length of the high-speed rail network to 2030 and transferring to railways the majority of passenger movements at short distances by 2050; the deployment of a fully functioning multimodal "core network" TEN-T in the Union by 2030, a high quality and high-capacity network by 2050, as well as relevant information services, etc.) The European Commission aims to create a Single European Transport Area by removing residual barriers between modes of transport and national systems, facilitating the integration process and facilitating the emergence of multinational transport providers with the possibility of intermodality. To avoid tensions and violations in the strict application of the competition rules in all modes of transport, the proposed policy provides for greater harmonization and better enforcement of social, environmental, safety and security rules, and minimum standards of service and user rights.

Another strategic issue relates to innovation, including new technological solutions as well as changing behavior towards more sustainable forms of mobility. Finally, the modern transport infrastructure network requires significant resources, such as diverse sources of funding and implementation of intelligent systems and the transport sector, which is the largest beneficiary of the Connecting Europe Facility (CEF) with a budget amounting at € 26 billion by 2020.

A second resolution on the implementation of the 2011 White Paper was adopted in 2015, headed "Equity and Future Action for Sustainable Mobility". In the framework of the mid-term review, the EP insists on a clear vision on the current implementation of 40 initiatives, highlighting the significant difference between the objectives and the operational and financial means of their achievement. A number of recommendations have been made to integrate all modes of transport for the purpose of a more efficient, sustainable, competitive and user-friendly transport system. Among the main issues raised are intermodality, modern infrastructure, the financing of Intelligent Transport Systems, urban mobility, the role of consumers in transport policy and the global dimensions of transport (SWD(2016) 226 final, 2016).

The Report of EP on the new opportunities of the SMEs in the transport sector, including mutual business models (2015/2349(INI)) (Riquet, 2016) states, that while highlighting anti-competitive practices, resulting from the difference in the implementation of EU rules in the Member States, "new opportunities offered by small transport companies and new joint business models" are welcomed[1].

The Integrated Transport Strategy of the Republic of Bulgaria until 2030 (anon, 2017) identifies problems in the transport sector as well as offering solutions and definite measures towards the achievement of each strategic goal and every strategic priority:

- Reducing fuel consumption and increasing the energy efficiency of the transport sector. The existence and functioning of clusters, based upon the idea of alternative energy sources' application as well as clusters related to vehicles using alternative fuels would aid the achievement of this objective, bringing forward the opportunity of "green transport";
- Improving the management of the transport system (through the implementation of intelligent transport systems as well as other types of information systems for improving the management process and increasing the institutional capacity) can also be achieved on the basis of clustering;
- Development of intermodal transport through terminals with logistics operators, concentrated around them, appears to be one

[1] In the field of wages and social security systems, which leads to serious distortions (social dumping) as well as security challenges

of the most appropriate options for the establishment of clusters, with participating carriers, infrastructure, and logistics agents, customs as well as the users of transport services, involved in the clusters' activities;

– Ensuring conditions for fair competition, which can also be achieved by cooperation, shared vision for the future development of transport industry and common development strategy.

Within the framework of the Connecting Europe Facility (CEF), in the process of realization of the Implementation Program of SESAR Initiative (EC, 2017), among the recommended policies of the European Commission is to develop business associations and clusters of excellence, with the view of creating an internal and external environment for cross-sectoral cooperation and technology development in order to support the diversification and modernization of business structures. "Clusters are powerful tools to boost industrial competitiveness, innovation, and regional growth ... They can be used both in the design phase and in the implementation phase of smart specialization strategies" (The European Union, Regional policy, 2012).

We have found enough evidence supporting the process of clustering and exploiting the positive results of cluster activities within the transport sector, which are further explained below.

2 CLUSTERS IN THE TRANSPORT SECTOR IN SUPPORT OF EUROPEAN TRANSPORT POLICY

Clusters represent agglomerations of interconnected companies and their associated supporting institutions; the cluster framework is established for the production and offering of similar or related goods or services in a separate field of activities with opportunities of mutual relation between different industries. The cluster participants by presumption are situated in a geographic proximity, including companies, business associations, training or providing technical assistance or services companies, etc. According to the definition of the European Cluster Observatory, the cluster is a regional concentration of economic activities and the industries represented in them, which are linked through multiple cross-sectoral links (also called "related diversification") (Roelandt & Hertog, 2017). It includes various kinds of companies, representing suppliers, producers of intermediate or final products and service providers, as well as innovation actors such as research and education institutions, specialized government agencies, financial actors and many other organizations. Within the frames of OECD, a methodological survey between the member states was carried dedicated to analyzing existing clusters and policy initiatives in this field (Aerospace Valley, 2017).

The impact of clusters in the transport sector affects the transport-related industry (represented by the production of vehicles and other transport means and equipment), the process of creation of transport services and, indirectly, the opportunities for implementing transport policy by promoting efforts for a pan-European transport market and reducing the harmful effects of transport.

An example of best practices is in the global level competitive "Aerospace Valley" Cluster, which begins from uniting the local competitive advantages of the regions "Mid-Pyrenees" and Aquitaine has been transformed into European Aerospace Cluster Partnership (EACP) establishing a network of European aerospace clusters (Loubet, 2017). In France, it is leading both in terms of R & D and the potential to maintain 130,000 jobs in the sector, including 1 600 enterprises, 1/3 of the country's workforce in aviation and over 50% of those employed in the space sector. Among the cluster, participants are 8500 researchers and 2 of the 3 prestigious aeronautics and space engineering schools in France. There are also 7 colleges, SMEs (260 enterprises), industrial leaders (60 organizations of OEM[1] type as major players[2]), 45 training organizations, 17 research centers, organizations for economic development, public and regional institutions, trade organizations, including their

[1] Original equipment manufacturers

[2] Airbus, Dassault-Aviation, Sogerma, Thales Alenia Space; the providers of electrical equipment are Alstom, Freescale, Continental Automotive, Thales Avionics; equipment suppliers are Alema, EADS Composites Aquitaine, Creuzet. The Science $ Research centers are ONERA, INRIA, CNES, CEA, CERFACS, with universities ISAE, ENAC, EMAC, Universities of Toulouse, Bordeaux and Peau

partnerships. The chosen organization form is “association” (LOI 1901) (Onera, 2017), and financing is equally divided between the French government, the local authorities and participants' contributions. So far, 480 joint research projects have been carried out, bringing together the sector and the research potential, with a total budget of EUR 725 million, of which EUR 307 million for public funding (for instance ONERA (Goranova, 2016), a French Aerospace Lab as an important component of the aerospace strategy).

The value chain is based on outsourcing the production of parts, assemblies, and details, as well as on the activities of the cluster partners (for the plane wings, fuel cells, engines - GE, Rolls Royce). The cluster body located in Toulouse is responsibility for assembling and the final integration. In addition to the support of the French government, the cluster is backed and works closely with other established clusters in the country, such as Ast tech and PEGASE.

The global aerospace cluster network includes foreign clusters in this field from Canada, China, Spain, etc. Bulgarian companies can also become participants in the international industrial cluster for aircraft construction (NCITES, 2017).

Global competition is expressed through lower cost levels, increasingly integrated "client-supplier" relationships, and OEMs restrict the number of suppliers with new programs using underpaid skilled workforce (from Mexico, China, India, Russia, Brazil, Malaysia and Morocco). In recent years it has been represented by emerging aerospace clusters in Canada, where airplane hulls are produced. Over the next 10 years, aerospace innovations will be radical, with the most important factor being cost reduction and improved customer service. Over the next 10 years, aerospace innovations will be of the incremental type, with the most important factor being cost reduction and improved customer service (represented for instance by the Airbus planes).

In view of the fact of the growing market share of the aerospace industry in the global market[1], there is a strong potential for industrial and cluster development in the aviation industry. Consequently, developing aviation clusters in Asia account for about a third of future aircraft demand.

In Bulgaria, “National Cluster for Intelligent Transport and Energy Systems“ (NCITES) unites telecommunication, IT companies as well as enterprises representing the transport and energy technical infrastructure. In supporting the development and best European practices’ application process, the cluster is functioning in close collaboration with scientific and engineering organizations, trainers, as well as with representatives of the business companies, implementing innovative solutions realized for European infrastructure. NCITES was given a category of “Developing cluster” by EAFSME[2] in Bulgaria (Eriksson, 2013)

In the sphere of transport and logistics services, a well-known concept is the "logistics cluster" meaning a geographically concentrated complex of business-related logistics activities. Yossi Sheffi outlines the characteristic "positive feedback" of the development of logistics clusters and the features distinguishing them from other industrial clusters; the reasons for locating the company's distribution and value-adding activities to logistics clusters, the role of the government support in the form of investments, the regulatory and trade policy etc. (Sheffi, 2013)

From the viewpoint of logistics, industrially intensive clusters are agglomerations of: (1) companies providing logistics services such as 3PL[3], transportation, warehousing and forwarding services; (2) logistics operations of industrial firms such as distribution activities for retailers, manufacturers and in most cases also post sales’ services 3) companies, where logistics comprises a major part of the business. Similar logistics clusters include companies responsible for vehicle maintenance activities, software vendors,

[1] Meaning regions in Africa, the Asia Pacific region, Latin America, the Middle East, Russia and the CIS, where long-term GDP growth is above the world average and their countries are consumers of a significant number of new aircraft

[2] Executive agency for fostering SMEs

[3] Third party logistics

specialized law firms, international financial services providers, etc.

The similarities between logistics and industrial clusters lie in the created opportunities to increase productivity due to shared resources and availability of suppliers; developed networks of human resources, including knowledge and know-how sharing; silent communication and understanding; a high degree of confidence among the cluster companies; the availability of a dedicated fund of labor resources, as well as educational, training institutions and knowledge-intensive centers (universities, consultancy firms and think tanks).

The uniqueness of logistics clusters and their contribution to economic growth is represented by the economies of scope (mainly for direct transport operations) and economies of scale (due to the possibilities of consolidating consignments to be carried by different modes of transport); the joint provision of transportation capacity and storage and processing capacity of tangible products; providing opportunities for cooperation between suppliers in the conditions of demand fluctuations. Their advantages are expressed in the process of creating the value chains as well as in the provision of job opportunities supporting different forms of the production process. For these reasons, many regional and central governments, as well as plenty of real estate developers, invest in the development of logistics clusters (Rivera, Gligor, & Sheffi, 2016)

For practical reasons, to a certain extent, the concept "logistics center" can also be applied for the identification of logistics cluster. Logistics centers (or logistics parks) coordinate and control warehousing, transportation and information services between various companies by bringing together firms from different industries and by setting and implementation of new standards for development, design, and management of logistics activities.

The best European practices in the field of logistics clusters are represented by cluster formations in long-term EU member countries such as the Netherlands (Logistics Cluster in Port Rotterdam), but also by similar structures in the newly acceded countries, for example, the Estonian Logistics Cluster (Valgerist, 2017). The last one is realized following a mutual initiative, with a mission, dedicated to the international marketing of services, supported by all members, introducing Estonia's logistical advantages to targeted markets, R & D and education in the field of logistics. The Estonian logistics cluster was launched in June 2010, with major participation of the Estonian Ministry of economy and communications[1]. The total number of members is 17, 14 of which are SMEs, as well as 2 university centers (n.d., 2017) The most prominent are Port of Tallinn, Estee Raudtee[2], EVR Cargo, Alexela Logistics, Baltic Rail, Tallinn Technology University, Mainor Business School, Estonian transit and logistics association (LTA), etc.

The developed sectoral transport activities of the cluster (railways, sea, and IWW[3]) are completely in accordance with the environmental requirements, warehousing and other ancillary activities are carried out within the emerging field “Logistics services“. Supporting services are provided by the cluster in the field of internationalization, particularly for improving the access to the markets in non-EU countries (meaning China, Kazakhstan, etc.), to facilitate cooperation with partners in Member States[4] (mostly Finland, Sweden and Latvia), promoting transparency and cooperation with other clusters (such as Estonian ICT cluster).

In Bulgaria, the Intermodal Transport and Logistics Cluster - Rousse was established in 2014 for cooperation in the field of transport and logistics in the Rousse region[5]. A Co-operation Agreement has been signed to improve interaction and increase the efficiency of activities in

[1] Realized through an investment project, 70% financed by EFRD, 30% - by the cluster members (total value 185700 Euro, period 15.01.2014 - 28.02.2015)

[2] Estonian Railways

[3] Inland water ways

[4] Participation in missions, events, study visits, fairs, transnational cooperation, etc.

[5] Among the participants are Holding BDZ, JSC, representatives of the academic community within Angel Kanchev University of Russe, Executive Agency for exploration and maintenance of the Danube River, “Bulgarian River Navigation", JSC, Holleman Bulgaria,

participating organizations and companies in the emerging cluster [1].

In the field of promoting alternative energy sources and reducing the environmental pollution caused by transportation activities, the following clusters have been created in Bulgaria:

Industrial cluster "Electromobiles" (ICEM) established in 2014, as a national branch organization for mobility based on electricity, uniting industrial, technological and business development efforts, for strategic development, introducing regulatory changes, for higher and vocational education and training, standardization, efficient communication with the central government and local authorities, etc. The electromobility sector is already established and represented by producing charging stations, electric bicycles, and mopeds, oriented also towards the production of buses based on electrical motion. The cluster country forecasts suggest monthly growth of 200 - 300% of vehicles based on electricity. As far as hybrid vehicles are concerned, the expected growth will be stable, around 120%. The cluster has established close co-operation with 5 schools and 3 universities in the country for training of professionals in the field of electric mobility. 72 organizations represent full membership, while other 67 are in partnership (EVIC, 2017).

Efforts have been united around the creation of the National Charging Infrastructure for based on electricity vehicles – BULCHARGE, creation of community models and environment for conversion of vehicles in Bulgaria, offering innovative products in order to increase the competitiveness of the sector, according to the requirements and pressure of the European and world markets, cooperation in the field of new rules, norms and standards in this new industry, etc.

Marine Cluster Bulgaria (MCB, 2017) is a non-governmental organization, uniting the efforts of all maritime sectors in Bulgaria, working for the sustainable development of the Bulgarian maritime economy through partnership and joint actions of all stakeholders. The association's aim is to create favorable conditions for the development and competitiveness of the maritime economy by introducing new organizational, product, market and technological solutions, training, implementation of good practices, as well as its promotion at national and international level. Members of the cluster are SMEs, non-governmental organizations, educational institutions, R & D centers[2]. There is a great diversity of activities in different fields of the maritime economy, such as business (agency, brokerage, water transportation, ship management, ship bunkering, forwarding, and logistics), commodity surveillance; classification and conventional ship and floating facilities certification; ship design; repair and reconstruction; applied and applied research; education and training in maritime technical specialties; maritime law. Bulgarian Maritime Cluster (BMC) is a regular member of the European Marine Clusters Network and the Bulgarian Business Clusters Association. As a member of the European Maritime Cluster Network, BMC is in partnership with national maritime clusters in initiatives of the European Commission (Directorate-General for Maritime Affairs and Fishery). The organization has observing status and participates in the work of the Balkan and Black Sea Commission of the Conference of Peripheral Marine Regions.

To its members, BMC offers business, educational, advisory and legal services. BMC is an active member of the European Network of Maritime Clusters (ENMC, 2017) participating in project "Intelligent Transport Systems in Southeastern Europe", funded by the South-East Europe Transnational Cooperation Program. Its aim is to develop an institutional and technological

Ltd., Donau Transit, Ltd. And other companies and organizations.

[1] Within INTRAREGIO Project- ("Creating intermodal transport network through knowledge-based regional research clusters"), financed through 7th Framework Programme of EC

[2] There are 15 organizations, among which the Military University":N.. Vaptsarov ", Tourism College, Varna, Bulgarian Register of Shipping, Bulgarian Shipowners' Association, brokerage and forwarding companies

framework for the harmonization of intelligent transport system specifications (Moraliyska, 2012)

Cluster Green transport (2017) is a non-profit association established by legal persons and individuals by the end of 2011 in Sofia. The cluster is focused exclusively on the development of intermodal freight and passenger transportation in Bulgaria, with objectives information, integration, consultancy and coordination activities for support and development of intermodal transport and related services. The cluster targets are the field of intermodality, integration of the capabilities of the Bulgarian transport system, expanding the market share of feeder and ferry operators as well as consolidating freight flows through block-trains, multimodal, hub-to-hub and door-to-door schemes. A common software and a web-based system are available for cluster members as well as third parties to for cargo information exchange, free reverse transport capacity (represented by wagons, containers, trailers, etc.), new products and terminal services. Legal assistance, as well as advisory services and training, are provided to aid cluster members.

On the basis of a memorandum for cooperation and development of new business opportunities between two sectors, Cluster Green Transport works together with Foundation ICT Cluster (ICTC, 2017). The purpose of the memorandum is to establish prerequisites for closer cooperation between the two clusters, committed to common efforts in the field of intelligent transport and the "green" economy in Bulgaria and the region, about deployment of innovation and intelligent transport solutions, leading to increased efficiency of the sector and its greater contribution to environmental protection and reduction of harmful substances. Business organizations will focus on implementing projects and transferring European and world best practices in the field of intelligent transport systems.

Creating a Consultation Platform for Synchronizing the process of gathering information on identified market opportunities and risks as well as the mutual coordination of the SESAR project implementation process includes users of the aviation space for services by civilian, military operators, and the land-based operators. A process of the voluntary partnership is developed[1], which very much resembles cluster structure and includes both project management levels and application of funding opportunities through EC grants.

3 STRATEGIC ALLIANCES FOR CREATING VALUE CHAINS AND THEIR RELATIONSHIP TO BUSINESS CLUSTERS

According to the Official Airline Guide (OAG, 2017), containing information about 1000 liner carriers, as well as 3000 airports, upgrading is a continuous process and concerns the reference airports, destinations, and flight information. The exchange of information also enhances the sphere of international tariff rates and in practice, no airline can maintain a long-term competitive advantage based on price levels over the competitors. The of competition is oligopolistic, which again brings out certain considerations concerning the efficiency of deregulation of the competitive bidding for air transport services, especially price liberalization. Competitive rivalry undoubtedly exists, but it can be considered a threat in the following cases:

1. In the conditions of non-existing or insignificant barriers to entry of new competitors in the market (for example, a new airline must pay the same fares with the existing companies, i.e. there will be no extra access costs for using airport terminal services);
2. Entrance of an airline on a definite market, realizing short-term profits and abandoning it, without serious losses;
3. A breakthrough of an airline based upon price advantages, until there is a response from existing carriers, which usually takes time.

International networks for cooperation in the air transport sector are of particular importance in the period following deregulation and liberalization, because of their importance for the introduction of innovations and other advantages bringing forward raised economic efficiency. The influence

[1] SESAR Deployment Framework Partnership Agreement (FPA) was signed on 5.12.2014 by the European Commission and the Consortium for the project implementation

of alliances between mutually connected companies is considered positive and promoting interactive learning between participating organizations through sharing of knowledge and information. The whole process is facilitated by trust, sharing of common values, and working methods. In order to determine the way of development of interconnected networks and their capabilities and constraints in terms of economic performance and competitiveness, the network structure, influenced by innovations and geography reasons is of utmost importance for alliances' establishment and functioning. In similarity with clusters, in terms of scope, aviation networks can be intra-regional and inter-regional.

As far as resources and competencies are concerned, internal development, also known as "organic growth", based upon complete decision-making autonomy, and the ability to grow within the frames of the external environment, can be achieved by a company, usually by means of horizontal integration (i.e. mergers and acquisitions). Although often applied, this way of implementing a growth strategy is risky because of the significant financial resources required, especially in the airline transport. (Malatesta & Thompson, 1993) In order to reduce the financial and other types of risk of mergers and acquisitions, other alternatives are applied in practice, such as strategic partnerships (Obregon, 2015). The objects of attention are the alliances, which are dependent on regional innovation systems, without significant obstacles concerning the maintained regional policies. In some cases, there are additional stimuli, such as external factors or side effects, as well as the existing social capital, which underlie cooperation. On the other hand, clusters also implement joint investment projects, to exploit new business opportunities. Alo, in comparison to other methods of implementing a business strategy, in the case of strategic alliances we can distinguish between advantages and disadvantages. According to Rangan and Yoshino (1996), the strategic alliance can be determined based on the following features:

- Autonomy of partner companies after completion and during the existence of the strategic alliance in the field of activities, which are excluded from the contract agreement (while in the cases of acquisition or merger, at least one company loses its economic and organizational autonomy);
- The participating companies are jointly responsible for the alliance's activities and mutually share benefits, while in other types of inter-company relationships (such as licensing, franchising, etc.), the participants also remain independent, but one of them defines the framework and conditions in the negotiation process;
- The contribution of the participating companies towards the strategic areas (meaning technology, marketing, and distribution) is permanent, with existing synergies, which are important results of each strategy. Therefore, alliances offer a joint, but flexible way to the development of a common strategy.

Together with clusters, alliances bring forward positive effects when each stakeholder gets added value. The generation of cost data within a strategic alliance is a factor for assessing the beneficial effect, aiding parties in the process of determining the duration and type of the established relationship created (Pietras & Stormer, 2001) While exploring new business opportunities, the partners must be flexible and compromise.

In turn, the same way as alliances, clusters establish strategic partnerships based on the opportunities to develop value chains. Other similarities between strategic alliances and clusters are as follows:

- The existence of trust between partners due to the need to share internal and market information;
- The alliance participants support the principle of free will and maintain their economic and organizational independence;
- The cooperation is of open and dynamic type, encouraging the use of opportunities arising during its implementation.

At the same time, participants in the alliance, as competitors in non-contract areas, cannot establish monopolistic structures, such as cartel. This further contributes to a stimulating business ecosystem. Both the Cluster and the Strategic Alliance clearly present the additional benefits for all participants.

The strategic alliances, typical for the air transport sector (Albers, Koch, & Ruff, 2005) cover different fields of activity:

- Code sharing (agreements between two airlines according to which each one may use the code of the other for the provision of flights in the general directions);
- Reservation of capacity (separation of a definite number of passenger seats for the passengers of an airline company on the flight boards of the other);
- Mutually connected frequent flyer programs;
- Common market and sales actions;
- Establishment of joint ventures for catering, ground handling, and airplane maintenance services;
- Joint flights for passengers and freight;
- Joint supplies and use of insurance services.

Wide represented are alliances that achieve mutual code sharing, perform joint frequent travel as well as overall marketing programs, aiming at increasing the market potential for all the members while dealing with the challenges outcoming from the globalization of air transport. Among the most important prerequisites is the existence of GDS[1], connecting the airline companies and the tour operators, initially at the regional level (Air France, Iberia, and Lufthansa established the system, Amadeus, together with SAS at the first stage). The alliance's purpose is to offer global travel services, the tactics being membership and a representative from every regional market. Thus, the geographic principle is applied, but not expressed in geographic concentration, as is the case with clusters. The major global airline alliances are represented below:

Table 1. *Strategic alliances of airlines*[2]

Alliance/Partners	Countries served	Revenue (Approx.)	Fleet size
Star - 15	124	USD 68 billion	2,058
One World - 8	135	USD 51 billion	1,983
Sky Team - 6	114	USD 50 billion	1,224
Wings - 3	100	USD 25 billion	899

Source: (Matsavela, 2014, p. 49)

Global alliances will continue to change in scope (each airline may join another alliance) and in the field of activities undertaken (for instance, Star Alliance own an IT - hub).

Traditionally, airlines and airports work together to establish a strong relationship with customers and suppliers, but there is a tendency towards establishing strategic alliances this time between airlines and airports. The tendency to proceed from purely market ties to closer cooperation activities is expressed in countries such as the USA, but in Europe, this process is lagging behind. The sharing of investment costs leads to a reduction of the financial risk in investment projects'implementation, hence the formation of an alliance of the "airport - airline" type, based on a long-term mutual activity commitment is a flexible form enhancing the possibility of raising competitiveness.

The access, quality, and availability of facilities are factors, affecting both airports and airlines. For airline transport users, additional airport functions are important, while airlines assess ground facilities, number of check-in points, gates, airplane parking facilities and maintenance facilities. The task of the airport management is to provide for and maintain the infrastructure facilities, as part of the inbound and outbound logistics.

The potential areas of cooperation between airlines and airports fall into three main categories: capacity, marketing, and security. Capacity-

[1] Global systems for the allocation of seats

[2] Alliance Qualiflyer, established by Swiss Air dissolved in 2002. Alliance Wings, with members Northwest Airlines and KLM stopped existence, but Continental and KLM continue their collaboration

oriented cooperation is defined as a very promising area, and objectives include operational issues (optimization of traffic, improvement of communications by means of ICT, etc.) The existence of economic benefits requires long-term coordinated cooperation in the investment area. Strategically oriented marketing cooperation is based on the pursuit of a complex image.

In general, there is also evidence that modern air transport alliances resemble clusters by including cross-sectoral partnerships to tackle economic problems as well as the most important environmental problems (Goel, 2003)

4 CONCLUSIONS

Despite the similarities between the industrial cluster and the alliance generated by the value chain, there are also obvious differences in the following:

First of all, the requirements for the economic potential of an enterprise and the scale of development for new members within an industrial cluster and those entering a value chain alliance are different. For industrial clusters, barriers to entry and exit are low, without scale requirements. Most participants in the industrial clusters are SMEs, specialized in similar industries, while in the alliance, the barriers to entry and exit are relatively high. The structure of the alliance is mainly formed by companies, located along the value chain, with vertical complementary components emphasizing integration. Thus, the alliance could be horizontal or vertical.

Secondly, spatial layout requirements are different due to geographic concentration based on proximity for the industrial cluster, even if it is trans-border, while the alliance formed as a response to the contemporary competition within the global management environment, with highly developed ICT requires interregional, even global spatial layout.

Thirdly, cluster motivation is concentrated on shared investment and transaction costs, customers, suppliers, raw materials, etc. The main reasons for the establishment of a strategic alliance are the need to tackle the challenges of the global competition as well as the economic potential of the participants. However, most important for both strategic options is the opportunity of sharing the R & D costs.

Fourthly, the industrial cluster establishes relations with external institutions, public authorities, etc., while for the alliance concentrated basically on business development, external intervention, aiming at any regulation of the activity is undesirable and unnecessary.

The analysis proves that industrial clusters and supply chain alliances have common features, but also differences. At the same time, the industrial cluster can provide the basis for building and adapt the strategic alliance by coordinating human resources, technology, and innovation in a given sector. On the other hand, the strategic alliance can regulate the competitive and cooperative relationships between enterprises within the industrial cluster through offering a flexible structure and working regime, helping the obtaining of competitive advantages.

The study of the correspondence between strategic alliances and industrial clusters shows the degree of integration and optimization of resources, enhancing the possibilities for coordination and sharing of competencies to increase the economic potential (Yuanqiang, 2010).

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HUMAN CAPITAL DEPRECIATION OF FEMALE IMMIGRANTS AND WAYS TO RESTORE LOST HUMAN CAPITAL

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JEL Category: **F2, F22, J6, J61, R2, R23**

Abstract

This paper presents the results of research on female immigration from the former Soviet Union conducted in the 2014-2015 academic years in the cities of Antalya, Istanbul, and Izmir in Turkey. The article also presents an explanation of the terms "Human capital depreciation" and "human capital restoration (or recovery)" as they apply to female immigrants from the countries of the former Soviet Union in Turkey. The article shows the educational level of female immigrants from the former Soviet Union, their difficulties in obtaining recognition of their academic diplomas, their opportunities, and desires concerning the continuation their education or of moving into higher education in Turkey as a means of restoration of their Human capital in that country. The following definitions also apply in this paper such as 'basic and professional human capital'. Conclusions about the prevention of Human capital depreciation and the restoration of Human capital for female immigrants are included in the paper.

Keywords: *Basic and professional human capital, depreciation, restoration, Turkey, female immigrants, Soviet Union*

1 INTRODUCTION

During recent years I have studied Human capital depreciation and the opportunities for Human capital restoration of female immigrants in my previous papers "Exploring of the Human Capital Depreciation of Ukrainian Labor Migrants Abroad: Results of a Survey" (Koshulko, 2015a), and "Issues in countries of the former Soviet Union as the driving force for female migration to Turkey" (Koshulko, 2015b), in a book "Women from North move to South: Contemporary migration from the Former Soviet Union countries to Turkey" (Koshulko, 2016a), and in the essay "Discourse about Women-Immigrants from Former Soviet Union Countries as a Special Social Group in Turkey" (Koshulko, 2016b). The basis for analysis of terms "Human capital depreciation" and "Human capital restoration" are papers by M. Arrazola and J. Hevia (Arrazola & Hevia, 2004); K. Hollenbeck (Hollenbeck, 1990); D. McFadden

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(McFadden, 2008); J. Mincer and H. Ofek (Mincer & Ofek, 1982), and other scientists.

In this paper I would like to explore the educational level of female immigrants from the former Soviet Union in Turkey, their difficulties in obtaining recognition of their academic diplomas and their opportunities and desires for the continuation of their education or of moving into higher education in Turkey as a means of restoring their Human capital.

2 METHODOLOGY OF THE RESEARCH

The methodology of the research consisted of quantitative and qualitative methods. Quantitative methods consisted of objective measurement and the statistical and numerical analysis of data collected through surveys. The qualitative research consisted of semi-structured interviews, generally referred to as 'conversation with a purpose'.

The strategy of the research consisted of the following stages: collecting data through surveys and semi-structured interviews; creating a database using the responses; the statistical and numerical analysis of this data.

The sample for research was taken from female immigrants from the former Soviet Union in Turkey, who came to that country for a variety of reasons. I aimed to discover their educational level, their problems obtaining recognition of their academic diplomas and their opportunities and desires in respect of the continuation their education or of moving into higher education in Turkey in order to restore their lost Human capital.

More than 400 respondents - female immigrants from the former Soviet Union in Turkey - participated in the surveys and semi-structured interviews in Turkey. The sample for my research was taken from female immigrants from the former Soviet Union in Istanbul, Antalya, and Izmir. The sample consisted of female immigrants from the former Soviet Union in Turkey. However, no method of sampling can truly represent all the female immigrants from the former Soviet Union in Turkey and the resulting margin of error is known as a sampling error.

3 THE APPEARANCE OF THE TERM 'HUMAN CAPITAL' IN SCIENCE

The term 'Human Capital' appeared in the 1960s in the USA and it means talents, knowledge, skills and the generation of ideas of people for scientific and technical progress in the world. The founders of the theory of Human Capital were American scientists, recipients of the Nobel Prize in Economic Sciences, Theodore William Schultz and Gary Stanley Becker. According to data Investopedia, the economist Theodore William Schultz invented the term "human capital" in the 1960s to reflect the value of human capacities (Schultz, 1961). He believed human capital was like any other type of capital; it could be invested in through education, training and enhanced benefits that lead to an improvement in the quality and level of production" (Investopedia, 2016).

According to data from the University of Chicago Press, Gary Stanley Becker, author of the book "A Theoretical and Empirical Analysis, with Special Reference to Education" (Becker, 1993), is "a pioneer of applying economic analysis to human behavior in such areas as discrimination, marriage, family relations, and education" (University of Chicago Press, 2016).

4 EDUCATIONAL LEVEL OF FEMALE IMMIGRANTS FROM THE FORMER SOVIET UNION IN TURKEY

I also studied some issues of human capital in my thesis "Human Capital Management in the Retail Food Industry" (Koshulko, 2008) and in the book "Women from North move to South: Contemporary migration from the Former Soviet Union countries to Turkey" (Koshulko, 2016a). In my opinion, the human capital of female immigrants from the former Soviet Union, who come to Turkey for various reasons, is a very valuable commodity for any country and this capital is of particular value in the development of society and the economy. Female immigrants who have university degrees have valuable human capital and they need to continue the development of their careers and their human capital. The results of my research show that a large

percentage of female immigrants from the former Soviet Union in Turkey have Ph.D. degrees and universities degrees (Table 1).

Table 1. Showing the educational level of female immigrants from the former Soviet Union in Turkey

Countries	Ph.D. Degree	Graduate degree	College Degree	High School Degree
Armenia	0	100 %	0	0
Azerbaijan	14 %	72 %	7 %	7 %
Belarus	0	76 %	20 %	4 %
Estonia	0	100 %	0	0
Georgia	0	22 %	22 %	56 %
Kazakhstan	8	62 %	15 %	15 %
Kyrgyzstan	0	55 %	27 %	18 %
Latvia	0	100 %	0	0
Lithuania	17 %	83 %	0	0
Moldova	5 %	50 %	35 %	10 %
Russia	4 %	76 %	13 %	7 %
Tajikistan	0	100 %	0	0
Turkmenistan	10 %	36 %	36 %	18 %
Ukraine	5 %	65 %	12 %	18 %
Uzbekistan	0	57 %	29 %	14 %

Source: Data collected via own research in Turkey (2014-2015)

Of course, the level of education of female immigrants from the former Soviet Union in Turkey differs depending on their country of origin. For example, the educational level of interviewed female immigrants from Estonia or Latvia is generally higher than that of female immigrants from other countries.

The highest educational level is that of female immigrants from Lithuania (17% of female immigrants from Lithuania were with Ph.D. degree); Azerbaijan (14%); Turkmenistan (10%); Kazakhstan (8%); Ukraine (5%); Moldova (5%); and Russia (4%). In these cases, one can say with confidence that the educational level of the female immigrants is a very high.

Regarding graduate degrees, from my research in Turkey, I can say that 100% of interviewed female immigrants from Armenia have a graduate degree; 72% of Azerbaijani; 76% of Belarusian; 100% of Estonian, 100% of Latvian and 83% of Lithuanian women; 22% of Georgian, 62% of Kazakhstani and 55% of Kyrgyz female immigrants; 50% of Moldovan and 76% of Russian female immigrants; 100% of female immigrants from Tajikistan; 36% of Turkmen, 65% of Ukrainian and 57% of Uzbek female immigrants.

However, only a small percentage of female immigrants are able to use their education fully in Turkey. The results of surveys and semi-structured interviews show that only 20% of Armenian female immigrants work in their own professions, 29% of Azerbaijani, 12% of Belarusian, 25% of Latvian, 17% of Lithuanian, 33% of Georgian, 23% of Kazakhstani, 18% of Kyrgyz, 15% of Moldovan, 18% of Russian, 27% of Turkmen, 16% of Ukrainian, and 14% of Uzbek female immigrants.

5 HUMAN CAPITAL DEPRECIATION OF FEMALE IMMIGRANTS

What is human capital depreciation? What causes human capital to depreciate? According to data from Investopedia, 'human capital depreciation is directly caused by interruptions in a work career, such as periods of unemployment' (Investopedia, 2016).

I studied the human capital depreciation of immigrants in my article “Exploring of the Human Capital Depreciation of Ukrainian Labor Migrants Abroad: Results of a Survey”, and from the results of my research I concluded that when skilled workers, for whatever reason, are forced to move abroad and to work as unskilled workers, there is a big problem of Brain Waste for all sides: “... when skilled workers, for whatever reasons, are forced to move abroad and to work as unskilled workers, there is a very big problem of Brain Waste for all sides, for skilled workers, who were professionals in the past, for their country of origin and for their host countries too. Very often these skilled workers, professionals in the past, when they return to their country of origin, find that they cannot work in their previous professions, which is a worse situation for them. Of course, during a

period of labor migration abroad, labor migrants, professionals in the past, can develop new skills and knowledge, but, unfortunately, labor migrants often perform unskilled work abroad. In my opinion, the biggest problems for skilled workers seeking work as professionals in host countries are language barriers, problems with confirmation of diplomas in host countries, lack of competitive knowledge and skills on international labor markets" (Koshulko, 2015a).

I met numerous female immigrants who work in jobs other than their own professions in Turkey, from translators and teachers of Russian to cleaners and sales-people. Of course, due to life situations, many female immigrants have changed profession in Turkey. I met a lot of female immigrants who no longer worked in their own professions due to various circumstances in their lives. In these cases, their professional human capital cannot develop, and this constitutes Brain Waste, which after some time will become the human capital depreciation of their professional skills and knowledge. These female immigrants will not be able to return to work in their professions nor will they be able to work in more junior positions.

6 RESTORATION HUMAN CAPITAL OF FEMALE IMMIGRANTS

I found the term "restoration" of human capital in the article "Interrupted Work Careers: Depreciation and Restoration of Human Capital" (Mincer & Ofek, 1982) by J. Mincer and H. Ofek, where the authors used this term for exploring restoration of human capital of immigrants.

In a paper by K. Hollenbeck "Dislocated Worker Human Capital Depreciation and Recovery" (Hollenbeck, 1990), the author used another term "Recovery" of human capital, but all the authors agreed that Human Capital needs to be used effectively everywhere in order to prevent Human capital depreciation.

In this paper, I use the term to explore the human capital of female immigrants in Turkey.

If female immigrants cannot work in their professions, how can they restore their human capital in Turkey?

The majority of female immigrants, who come to Turkey for various reasons, would prefer to work, study, and develop their human capital in any area of the economy. If they are in a situation where they cannot work in their professions, they try to enter new professions, to do unskilled jobs or to find other spheres of fulfillment for their human capital, which may help to restore their human capital. In my opinion, they should also gain recognition of their academic diplomas and continue their education in their new country.

7 RECOGNITION OF ACADEMIC DIPLOMAS

In Turkey, there is a problem of recognition of the academic diplomas of female immigrants. The procedure of recognition of academic diplomas of foreigners can be done at the Council of Higher Education in Ankara, but not all female immigrants can complete this procedure of recognition for many reasons:

- Because the recognition of academic diplomas can take up to year or more;
- Because of the language barrier in cases where applicants need to pass tests or exams in the Turkish language;
- Because of lack of support from husbands and/or relatives in this issue;
- Because of periods of maternity leave;
- Or other issues.

Courses TOMER at the Turkish and Foreign Languages Research and Application Center of Ankara University or in its branches in Samsun, Marmaris, Izmir, Bursa, Antalya, Istanbul, Trabzon, Giresun, and Alanya can help female immigrants improve their knowledge of Turkish and so gain recognition of their academic diplomas faster and more easily.

In cases where female immigrants do not try to get recognition of their diplomas in Turkey and do not try to find a job in their own professions, they may lose their human capital and professional knowledge and skills as time passes. My previous research shows that for every 12-month period educated and skilled immigrants (male and female) will lose around 1.2% of their existing Human Capital (Koshulko, 2015a) if they cannot maintain it in Turkey.

8 OPPORTUNITIES AND DESIRES TO MOVE ON TO HIGHER EDUCATION IN TURKEY

During my research in Turkey, I asked female immigrants about their opportunities and their desires to continue their education. From their replies, I conclude that not all of them are able to study even if they have the desire to do so.

Table 2 shows the responses of female immigrants from the former Soviet Union in Turkey.

Table 2. Showing responses of female immigrants from the former Soviet Union in Turkey about their opportunities and desires to continue their education

Countries	Opportunity to continue education (parts out of 100%)		Desire to continue education (parts out of 100%)	
	Yes	No	Yes	No
Armenia	60 %	20 %	20 %	80 %
Azerbaijan	86 %	14 %	64 %	36 %
Belarus	56 %	40 %	72 %	28 %
Estonia	100 %	0	100 %	0
Georgia	11 %	89 %	11 %	89 %
Kazakhstan	46 %	54 %	46 %	54 %
Kyrgyzstan	64 %	36 %	36 %	64 %
Latvia	100 %	0	100 %	0
Lithuania	67 %	33 %	50 %	50 %
Moldova	60 %	40 %	75 %	25 %
Russia	66 %	34 %	61 %	39 %
Tajikistan	50 %	50 %	100 %	0
Turkmenistan	27 %	73 %	36 %	64 %
Ukraine	51 %	49 %	55 %	45 %
Uzbekistan	29 %	71 %	71 %	29 %

Source: Data collected via own research in Turkey (2014-2015)

From the data in Table 2 that I collected during my research on female immigrants in Turkey, I conclude that 60% Armenian female immigrants have opportunities to continue their education, but only 20% of them have the desire to do so (20% of Armenian female immigrants did not respond).

Azerbaijani female immigrants - 86% of them have opportunities to continue their education and 64% of them have the desire to do so.

Belarusian - 56% of them have opportunities and 72% of them have the desire to do so.

Estonian, Latvian and Lithuanian female immigrants show that - 100% of all interviewed Estonian, 100% of Latvian and 67% of Lithuanian female immigrants have opportunities and 100% of all interviewed Estonian, 100% of Latvian and 50% of Lithuanian female immigrants have the desire to do so.

Georgian, Kazakhstani, and Kyrgyz - 33% of Georgian, 54% of Kazakhstani and 91% of Kyrgyz female immigrants have opportunities and 11% of Georgian, 46% of Kazakhstani and 64% of Kyrgyz female immigrants have the desire to do so.

Moldovan and Russian - 60% of Moldovan and 66% of Russian female immigrants have opportunities and 75% of Moldovan and 61% of Russian have the desire to do so.

Female immigrants from Tajikistan show that 50% of them have opportunities to continue their education and 100% of them have the desire to do so.

Turkmen, Ukrainian, and Uzbek - 27% of Turkmen, 51% of Ukrainian and 29% of Uzbek female immigrants have opportunities and 36% of Turkmen, 55% of Ukrainian and 71% of Uzbek female immigrants have the desire to do so.

9 CONCLUSIONS

I conclude that the educational level of female immigrants from the former Soviet Union in Turkey is a very high. The highest educational level is that of female immigrants from Lithuania (17% of female immigrants were with a Ph.D. degree); Azerbaijan (14%); Turkmenistan (10%); Kazakhstan (8%); Ukraine (5%); Moldova (5%); and Russia (4%). In addition, 100% of the interviewed female immigrants from Armenia, Estonia, Latvia, and Tajikistan have a Graduate degree. The majority of the female immigrants from Azerbaijan; Belarus; Lithuania; Kazakhstan;

Kyrgyzstan; Russia; Ukraine; Uzbekistan have a Graduate degree as well as half the female immigrants from Moldova.

However, only a small percentage of female immigrants are able to use their educational level in Turkey. According to results of surveys and semi-structured interviews, only 20% of Armenian female immigrants work in their own professions, 29% of Azerbaijani, 12% of Belarusian, 25% of Latvian, 17% of Lithuanian, 33% of Georgian, 23% of Kazakhstani, 18% of Kyrgyz, 15% of Moldovan, 18% of Russian, 27% of Turkmen, 16% of Ukrainian, and 14% of Uzbek female immigrants work in their own professions in Turkey.

In my opinion, human capital consists of basic and professional human capital and in cases when female immigrants cannot work in their professions in Turkey and cannot use their professional human capital, they can make use of their basic human capital by working in alternative or unskilled professions.

Restoration of their human capital may occur when they try to enter new professions, to gain recognition of their academic diplomas or to continue their education in Turkey but from their replies, I conclude that not all of them can study even if they have the desire to do so.

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PROFIT MANAGEMENT OF BUILDING ORGANIZATIONS BASED ON THE AUTHORIAL BREAK-EVEN CONCEPT

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JEL Category: **G, G32**

Abstract

An algorithm of profits control of construction companies is developed, it allows constantly and consistently to manage the process, to measure the progress of the process results, to monitor the achievement of these goals, thus increasing the profitability and productivity of work. A concept of analysis of the breakeven activity of construction organizations is suggested. Its gist is in the measuring of 2 factors: 1) time and 2) velocity of breakeven. Its practical importance lies in its application by contractors and customers in the management of the costs and profits. The economic content of the concept of "break-even activity of construction organizations" is clarified. A new feature of the classification of construction companies, depending on how fast they reach the break-even conditions is introduced. The latter allows justifying the appropriateness of the choice of the most efficient of the contractor based on the ranking of construction companies, in accordance with the proposed classification, make competent management solutions to customers to assess the effectiveness of investment in construction. A map of the perception of investors in the market positions of the contractor's construction and installation work, which allows selecting the most effective functioning.

Keywords:
Algorithm, framework, evaluation, profit, expenses, investor, effective strength, building constructor

1 INTRODUCTION

Under the existing circumstances of the formation and development of the social market economy, it is important for the building complex to ensure the population's needs in housing, to develop social infrastructure and productive capacity. The building complex is one of the important parts of the national economy.

The construction dynamics largely determines the growth rate of the economy as a whole, which concerns the Republic of Belarus as well (Lukashova, A. & Bryantseva, O., 2011). However, in modern conditions with the mandatory contract bidding to get a contract for building and to put up a building qualitatively, in time and with a good level of profit, civil

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organizations can only do, if they build using effective cost and profit management system.

2 THE SITUATION IN CONSTRUCTION IN THE REPUBLIC OF BELARUS

The current management system does not have reliable information about the real value of the object under the construction, the cost of its construction, and hence its profit. Those things do not make it possible to vary the cost of the contract reasonably.

Managing costs and profits in the context of building sites are fragmentary, specific economic goals are not put before the actual contractors and their achievements are not being monitored, which leads the process of building to unpredictable (usually negative) economic performance and low cost-effectiveness of construction and installation works. The marked problems deprive many potential contractors of lucrative contracts.

Therefore, the majority of construction companies have a precarious financial position, experiencing a shortage of working capital, more than 20% of them are unprofitable, the profitability in the sector is low and it is about 3 - 5% (Metezh, 2015) according to the article by.

One of the main reasons for this situation is the lack of methodological and analytical tools to take effective reasonable management decisions in the area of costs and profits necessary to achieve its goals and to enhance the profitability and efficiency of both building sites and the organization as a whole. It seems that the problem can be solved through the development of new analytical tools to create an efficient cost management and profit system of building organizations through the development and introduction of a new original concept of measuring time factors - T (time), and velocity - S (speed) for the analysis of their break-even activities (Kostjukova, 2017).

The foregoing determines the high relevance and practical significance of the study.

The article aims are to organize business processes of profit management of construction companies in the form of an algorithm of actions for managers, to develop new analytical tools on the basis of the analysis of break-even of a new original activity concept by measuring the time factor - T (time), and velocity - S (speed).

3 METHODOLOGY AND RESEARCH METHODS

One of the best-known and most effective tools of cost and profit management of enterprises is a break-even analysis.

The urgency of the break-even analysis (CVP-analysis from the English term “Cost-Volume-Profit Analysis”, i.e., a joint analysis of costs, sales volumes, and profit), which makes it possible to trace the dependencies of business financial results on costs and production (sales),is due to its usefulness and efficiency in making rational management decisions.

It is a powerful tool for operational and strategic planning and management at the enterprise; it is an important part of evaluating the profitability of the company absolutely for all industries.

The questions dealing with the significance of the analysis of break-even in the implementation of effective management of the enterprise profit were constantly being risen, and largely resolved in the works of scientists.

Among scientists the greatest contribution to the development of the theory and practice of CVP-analysis was made by (Blank, 2007), (Daille, (2005), (Lebedev, 2012), (Savchuk, 2005), (Vahrushina, 2006), (Drury, 2002), (Folmut, 1998), (Neveshkina, 2010), (Karminsky, 2002), but these research have been useful only for industrial enterprises, and it is the reason that we would like to continue our study for construction enterprises.

The need for a break-even analysis for the construction industry is due to the compulsory holding of contract bidding for the right to build a specific object. Contract tenders are held in the form of competitive tendering.

The winner of the bidding contractors (contractor tenders) is considered to be the contractor that, according to the conclusion of the competition committee appointed by the tender’s organizer, offers the best conditions. According to the result of the contract bidding, the contract price is determined.

Moreover, it is the price of the tender winner. This price level can be determined objectively with the help of effective techniques for the analysis of break-even activity of the building organizations.

4 PROBLEM FORMULATION IN THE CONSTRUCTION

It should be noted that in the scientific literature, analysis of break-even in the traditional sense is described in relation to industries, while the applied research, accounting for and disclosing the specifics of the breakeven analysis for construction companies, is not virtually given.

The complexity of the solution to this problem lies in the very specifics of the construction companies' operation, in the presence of the essential features inherent to the construction industry. Firstly, the long-term nature of construction projects (construction time of objects is measured in years), while the traditional break-even analysis is designed only for a short period. Secondly, at the same time, the organization is building different construction objects with different start and end dates of work during a year (it requires taking into account the share of revenue from the sale of installation and construction work (ICW), planned for development in the coming year).

Thirdly, the construction usually involves several building sites (teams) that have a direct impact on the effective implementation of the project construction and installation works, and, consequently, on the financial result of the construction company and others. The features are presented in (Kostjukova, 2014). However, this makes it impossible to use traditional break-even analysis, designed for industrial enterprises.

5 THE RESULT OF THE RESEARCH

The solution of this problem is reflected in the research. So, the author has identified and systematized distinctive features of construction industry; has developed breakeven analysis' technique for the organizations in the construction industry; break-even analysis' technique of construction projects; methods of analysis and planning break-even volume of construction and installation works of a construction organization; has improved planning methodology and the analysis of break-even of construction companies in the context of modern legislation (Kostjukova, 2014).

In collaboration with A. Kapusto the generalization of the theory and practice of the break-even analysis in construction is fulfilled (Kapusto & Kostjukova, 2016).

The result of the research is a developed process of cost and profit management of a building organization that identifies the system (network) of organization's business processes.

6 THE AUTHOR'S CONCEPT OF BREAKEVEN

In order to make effective management decisions, the author has developed a break-even analysis technique of construction organization required to stage number 3 (indicated in Figure 1 using a gray filling).

Indeed, the most important challenge for managers of construction companies is to predict the period during which the compensation of total expenses in full will be reached, i.e. the time during which breakeven is reached.

In this case, the problem can be formulated as follows: to determine the point in time at which it can be assumed that a specific organization by the cover amount1 (cover amount 1 is operating revenue difference from the sale of works and variable costs) has reimbursed payable amount of annual fixed costs in the reporting year. In this case, up to this moment, the profit is equal to zero, i.e. the entire cover amount 1, calculated to a particular object, will be directed to the reimbursement of annual fixed costs. The term of reimbursement of annual total cost represents a period of time, after which the organization starts to make a profit, in other words - for what time the organization will refund the amount of its annual total costs in full. In addition, it was found that the achievement of breakeven operations can be carried out at different speeds.

Based on the author's research and presented scientific research in order to solve these problems, the concept of the analysis of break-even activity of the building organizations using

measuring time factors - T (time), and velocity - S (speed) has been developed.

The gist of it is as follows: at the stage of planning and analysis of break-even it is necessary to consider the time factor - T (time) - the time for which the condition of breakeven operations is achieved (total contribution margin on the objects is equal to the annual permanent organization costs), and the factor of speed - S (speed) - the rate at which the condition of break-even operations is achieved. (Kostjukova, 2017). This is due to the fact that the construction has a contractual relationship between the customer and the contractor, and, consequently, the volume of construction and installation work for each object is linked to the timing of their implementation in accordance with the DED (design and estimate documentation) and a schedule of works.

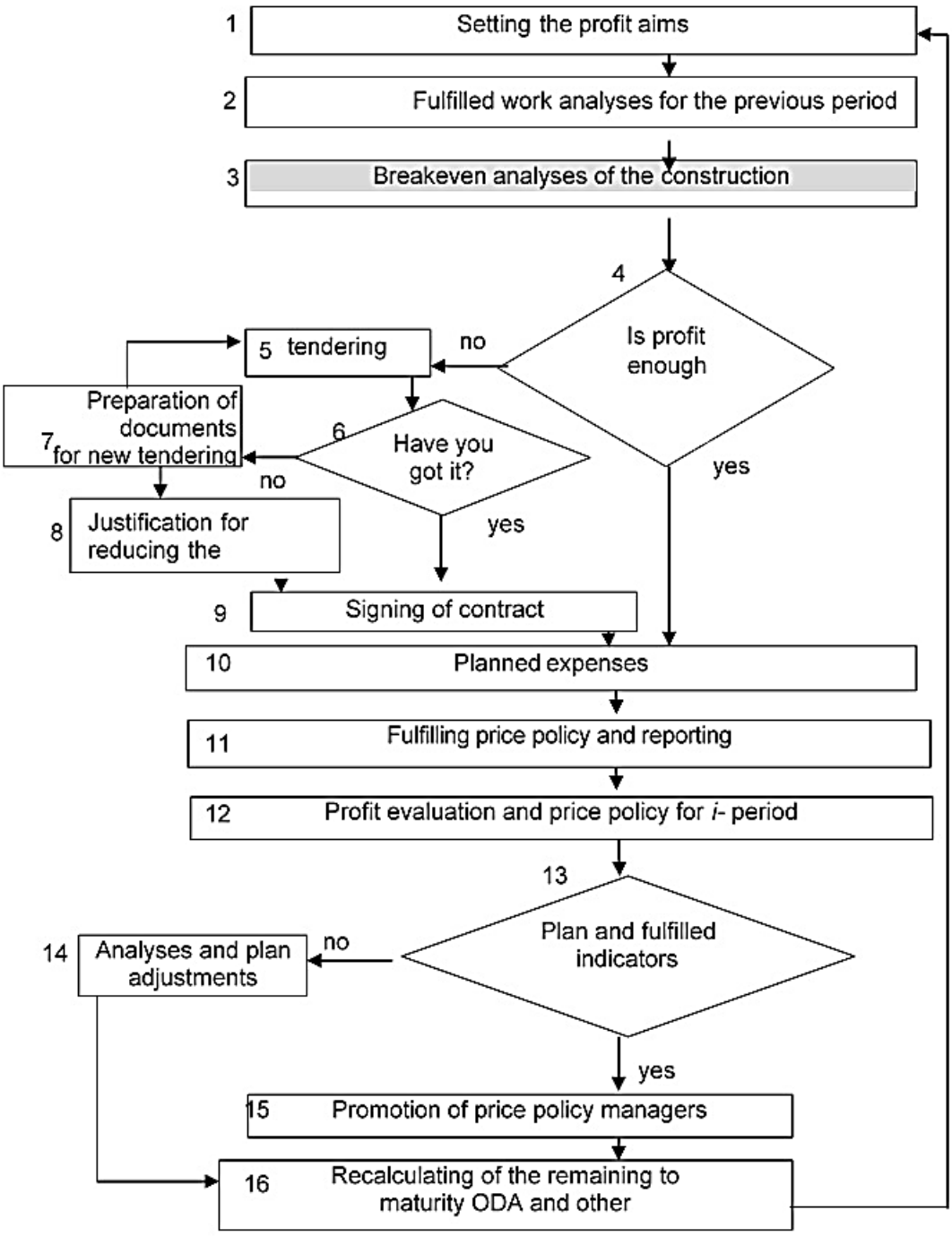

Fig. 1 Algorithm for-profit management of construction companies

Moreover, as a result of the studies, it has been found that the condition of the break-even activity of construction companies can be achieved at different speeds. There is a point of view that the construction organization with high business activity (high-security contract agreements) reaches the break-even conditions much faster. Conversely, it does it slower if its business activity is low (low supply contract agreement).

Based on the above information, a variable nature of the break-even activity index, which depends on the business activities of a construction company, is set.

Based on the developed concept it is proposed to introduce a new classification feature - the speed of achieving breakeven conditions of construction organizations. In accordance with that, it is proposed to divide the construction organizations into fast achieving, moderate achieving, slow achieving and unreachable break even during the year. (Kostjukova, 2016). The time lag during which the estimated figure corresponds to the proposed one year (Table 1).

Table 1. Classification of construction companies on the speed they reach break-even activity

Classification sign	Type of construction	The speed of achieving breakeven conditions
Depending on the speed of breakeven conditions	Fast achieving	1-4 months
	Moderately achieving	5-7 months
	Slow achieving	8-12months
	No achieving	More than 12 months

According to the classification proposed by the author in Table 1, fast achieving breakeven conditions company is a construction company, which is for a period of one to four months due to the accumulated cover amount 1 can compensate for its annual fixed costs in full. Moderately achieving breakeven activity - for the period of five to seven months. Slow achieving - for 8 to 12 months, respectively. Unreachable break-even company is an organization that during the calendar year could not compensate for the annual fixed costs and, consequently, had a loss.

Thus, the proposed classification of construction companies allows investors to carry out an objective selection of the contractor in terms of speed reaching the break-even terms. It becomes apparent that the contractor that reaches condition breakeven operations, faster than the competitor - will begin to make a profit quickly. Moreover, it has sufficient capacity utilization, that corresponds to the high percentage of security outsourcing agreements.

Based on the concept of measurement T S factors, as well as the classification of construction companies the mapping of the investor's perception of break-even rate contractors activity (Figure 2) is presented.

The perception map reflects the dependence of the activity rate to break even by construction organizations depending on their security outsourcing contracts, expressed in percentage. According to the perception map (Figure 2), the company's speed breakeven is increased under the influence of the business growth of the construction company.

Presented in Figure 2 perception map, showing investor's speed to achieve contractors break-even activity, allows investors according to these limits varying parameters (break-even rate in activity correlated with security agreements contractor building the organization) to define a zone in which there is a potential contractor for the purpose of understanding and identification of its position in the construction and installation works market. Accordingly, as shown in Figure 1, favorable contractors for the conclusion of the contract are potential contractors that are in the quadrants "stable functioning" and "market leaders". It should be noted that these parameters are additional criteria except the price offered in the contract bidding to select an effective contractor.

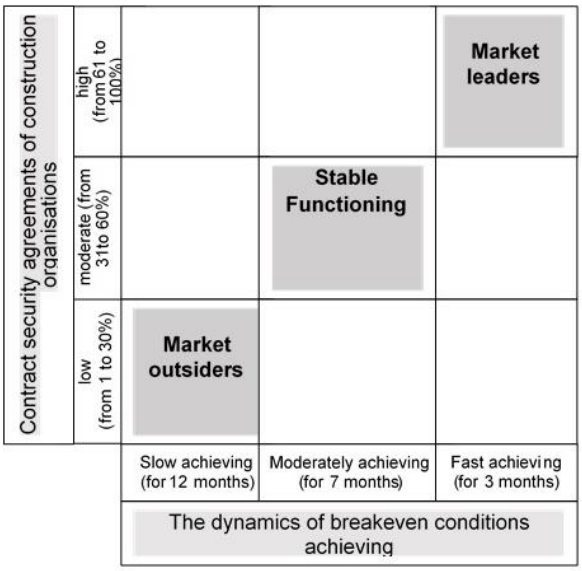

Fig. 2. Map of investor's perception of the speed of achieving break-even activity contractors

7 CONCLUSIONS

Based on the above it can be concluded that the introduction of the process approach to cost and profit managing of construction companies by clearly defined stages based on the developed algorithm allows constantly and consistently to manage the process, to measure progress of the process results, to monitor the achievement of their goals, thereby improving profitability and efficiency of activities both of construction sites and the organization as a whole.

The proposed methodological tools, including profit management algorithm, a new classification of construction companies, the identification speed dial, as well as the perception of the investor card speed to achieve break-even activity contractor will allow investors (customers):

to get answers to three basic questions: when the organization, the object of investment, will reach break-even activity and, consequently, at what point in time it will start making a profit? What is its business activity? Which speed does it reach the break-even point with?

to increase the competitiveness and attractiveness of construction companies for investors by providing the latest with reports on the effectiveness of their activities, including key factors for the new break-even point - the timing and pace of activity to break even;

to create a ranking of construction companies on the timing and speed to break even, on the basis of which it is possible to draw a conclusion about the dynamics of speed in a specific period of time, in the previous periods and the prospects for the coming year;

to make informed management decisions to evaluate the effectiveness of investments in construction, which includes due date and speed to break even.

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ONTOLOGY OF BIG DATA ANALYTICS

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Abstract

This article describes the features of classification methods and technologies analytics Big Data. There are described: a group of methods and technologies, analytics Big Data that are graded according to the functional relationships and formal model of information technology, the problem of the definition of ontology concepts analytics Big Data. Big Data as a technology turns out to be of great practical importance since it enables solving topical issues of everyday life while at the same time constantly creating new ones. Big Data can change the way we live, work and think. Nowadays the ability to store and analyze large volumes and streams of information turns out to be one of the key preconditions for the successful development of global economy. The countries which will master the most effective ways of working with Big Data are thought to face an industrial evolution of new kind. The branch of Big Data consolidates efforts of the organization in terms of storing, processing and analyzing large data sets. Thus, using the formal model developed as well as the results of the critical analysis conducted, an ontology for the analysis of Big Data may be created. Further research will be focused on investigating methods, models, and tools to refine the ontology for the analysis of Big Data and to provide more effective maintenance for the development of structural components for the model of decision support system for Big Data management.

Keywords: *analysis, big data, visualization data, model, data mining, text mining, MapReduce, ontology*

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1 INTRODUCTION

Big Data enables us to distinguish and to understand such relations between the fragments of information which up until recently could have

hardly been grasped (Mayer-Schonberger, 2013). Big Data represents a great amount of new information in the spheres of civil security, global economic models, personal privacy, established moral rules as well as legal relations between people, businesses, and states.

As smart and interrelated devices are getting more and more widespread, the amount of accumulated information is increasing at a rampant pace. About 90% of data within certain domains is stored in an unstructured form with its amount increasing by 50% annually. In order to remain competitive, introduce innovations and bring products and services to the market, one has to be able to analyze this data and to obtain analytical information from it quickly and cost-effectively. When it comes to the analysis of Big Data as well as to other analytical tasks, current decisions cannot provide system response which is quick enough to be of use when working with such tasks, which in its turn decreases customer efficiency and slows down decision-making process (IBM, 2017). Customers are changing and so is the business world. Analyzing sales data only is far from enough nowadays. The idea behind the deployment of an integrated platform for business intelligence and Big Data analysis is to gain better understanding of why, when, what and how when it comes to customers, products and companies (Vysotska, 2007), (Lytvyn, 2017), (Vysotska, 2013), (Vysotska, 2014), (Vysotska, 2016).

Both business methods and the behavior of customers are changing. Customers in their turn are changing as well. To remain competitive, enterprises are eager to find out in the real-time mode when the customers are buying something, where they are buying it and even what are they thinking about before going to the shop or visiting a website. These are the Big Data, Big Data analysis and integrated platform for business intelligence which can provide help in that respect (Mayer-Schonberger, 2013), (IBM, 2017), (Ageev, 2015), (CNews, 2015).

1.1 The Analysis of Recent Researches and Publications

The conventional business practice of a large-scale data analysis is based on the concept of Enterprise Data Warehouse (EDW), which receives queries from business intelligence (BI) software (Cohen, 2009). BI tools support the opportunity of creating reports and interactive interfaces, generalizing data by means of aggregate functions (e.g. to calculate the total amount or average) as well as dividing hierarchical data into groups.

It is generally accepted that thoroughly designed data warehouse plays a major role when it comes to the proper application of information technologies. Designing and developing a detailed scheme of a data warehouse improves both the results and the presentation of all the business processes and thus turns out to be a general principle of the orderly data integration. The resultant database serves as a repository for the characteristic features of critical business functions. Moreover, a database server, where the data warehouse is stored, is usually the main computing device, serving as a central scaling mechanism for the key corporate analytics. The major role of the data warehouse in conceptual and computational aspects makes it a crucially important and expensive source used for generating reports with large amounts of data, these reports being mainly targeted at decision-making authorities. A data warehouse is usually controlled by specially assigned IT workers, who not only maintain the system but also thoroughly monitor access to it so that the authorities could be provided with the high-quality service (Cohen, 2009).

Even though this conventional approach is still being used in a wide variety of situations, many factors promote an entirely different philosophy of large-scale data management within an enterprise. First, storing data turns out to be so cheap nowadays, that even small subgroups within an enterprise are now capable of developing a separate database of an impressive size even on their own budget. The amount of internal corporate large-scale data sources is steadily increasing: large databases nowadays arise even based on single sources of data flow on Web-browsing (click-stream), software logs, email and forum archives etc. The importance of data analysis is now generally recognized. Numerous companies prove that complex data analysis helps not only to reduce expenses but also to increase profits. As a result, large corporations are now shifting towards the approach of collecting and using data within several of their organizational

units. The advantage of such approach lies in the fact that it increases both the efficiency and the culture of data usage. However, it also leads to data decentralization, which is what data warehouses are designed to deal with.

In this ever-changing climate of fragmented large-scale data collection, an approach known as MAD (Magnetic, Agile, Deep data analysis) tends to be the most appropriate one (Cohen, 2009). Its name, which is an acronym, comes from three major features of this environment that distinguish it from conventional data warehouses, namely its being magnetic, agile and deep.

Modern data analysis involves using more and more complex statistical methods which far exceed the limits of roll-up and drill-down of traditional BI methods. Furthermore, when following these algorithms, analysts often have to investigate large sets of data without using instances and samples. The modern data warehouse should, therefore, serve both as a deep data repository and as the mechanism for executing complex algorithms.

Nowadays the need for competent data analysts tends to be a growing one. They often turn out to be highly-qualified statisticians and possess profound knowledge in the software sphere, though they mainly focus on comprehensive data analysis rather than on database management. MAD approach to designing data warehouses and creating the infrastructure of database systems should be used to facilitate their activities. As long as these goals are achieved, new topical problems with regard to the choice of methods and technologies for the analysis of Big Data arise.

Big data is a set of approaches, tools, and methods for processing structured and unstructured data of great scale and variety to obtain results, which can be comprehended by humans, are efficient under the conditions of steady increase of distribution between numerous nodes of the computing system formed in the late 2000s, and serve as an alternative for the conventional database and BI decision management systems (SAS, 2017), (Mitchell, 2014). When it comes to Big data, three major types of tasks may be distinguished Mayer-Schonberger, 2013), (IBM, 2017), (Ageev, 2015), (CNews, 2015), (SAS, 2017), (Mitchell, 2014):

1. Saving and managing data. Hundreds of terabytes or petabytes of data cannot be easily saved and managed by means of traditional relational databases.

2. Unstructured information. The most of Big Data is unstructured.

3. Big Data analysis. How should unstructured information be analyzed? How should one prepare simple reports, create and implement deep predictive models on the basis of Big Data?

Working with the Big Data is not similar to the ordinary process of business analytics, where the result is achieved through the simple addition of known values. When working with the Big Data the result may be achieved in the process of their refinement by means of consecutive modeling: first, the hypothesis is formed, then the statistical, visual or semantic model is built on the basis of which the accuracy of this hypothesis may be evaluated and finally the next hypothesis is put forward. This process requires a researcher either to interpret visual meanings, to create knowledge-based interactive queries or to develop adaptive machine learning algorithms able to achieve the desired result. The lifecycle of such an algorithm may though be a rather short one (IBM, 2017), (SAS, 2017).

Five major approaches to the analysis of Big Data may thus be distinguished (Mitchell, 2014):

- **Discovery** tools may be used throughout the information lifecycle in order to investigate and analyze information obtained from any combination of structured and unstructured sources quickly and intuitively. Like traditional BI systems, such applications enable us to analyze data sources. No up-front modeling is required, and the users may now engage new ideas, come to meaningful conclusions and make reasonable decisions quickly;
- **BI tools** are of crucial importance when it comes to reporting, analysis and efficiency management, first, in terms of transaction data from data warehouses and production information systems. BI applications provide wide opportunities for business analytics and efficiency management;
- **In-Database Analytics** – methods for identifying data patterns and relationships between data. Such methods are used directly within the database – you prevent data

transfer from other analytic servers, which makes information processing considerably faster and decreases the total cost;
- **Hadoop**: it may be applied to preprocess data in order to identify macro trends and to find data elements within the OUTOF-range values. Various organizations use Hadoop as a precursor to the forms of analytics;
- **Decision Management** – predictive modeling, business rules and self-learning aimed at making reasonable decisions based on current context. This type of analysis provides the opportunity for creating decision-making processes in real-time mode.

All these approaches are used to identify hidden relationships.

2 PREVIOUSLY UNSETTLED ASPECTS OF THE GENERAL PROBLEM

Developing the project of corporate Decision Support System for data management inevitably involves dealing with some difficulties regarding Big Data. New approaches to data analysis are to be developed and existing methods are, if necessary, to be expanded. This is where mathematical sciences can make a considerable contribution: a building based on current statistical methods and investigation into the new methods so as to substitute the old ones, which are less applicable, to make analytics truly efficient and, most importantly, to make sure that correct conclusions are being derived from the data available. Before tools for the analysis of Big Data can be developed and used, one should conduct research into the technologies and approaches implemented to deal with difficulties of obtaining relevant knowledge from structured and unstructured sources with the emphasis being made on the application of Big Data information technology.

3 DESCRIPTION OF METHODS AND TECHNOLOGIES FOR BIG DATA ANALYTICS

Taking into consideration the rapid development of businesses, Big Data information technology may be of great help when it comes to preserving the competitiveness of the enterprise and to processing large amounts of structured and unstructured data. Application of methods and technologies for the analysis of Big Data as well as the development of an integrated platform for business analytics also turn out to be especially topical. The objective of this paper is to conduct research into the peculiarities of classification of methods and technologies for the analysis of Big Data while taking into consideration the definition of Big Data as well as the specific features of its practical application.

As an information technology Big Data may be described by the following formal model (Tadviser, 2017), (Inmon, 2014), (Shakhovska, 2014), (Shakhovska, 2015), (Veres, 2015), (Shakhovska, 2016), which looks like:

$$BD = \langle Vol_{BD}, I_p, A_{BD}, T_{BD} \rangle, \quad (1)$$

where: Vol_{BD} – a set of volume types; I_p – a set of data source (information products) types; A_{BD} – a set of techniques for Big Data analysis; T_{BD} – a set of Big Data processing techniques.

Taking into consideration the definition of Big Data, we may thus formulate the key principles for working with it (Inmon, 2014):
- **Horizontal scalability**: since there might be as much data as needed, each system designed for the processing of Big Data should definitely be expandable. If the amount of data is doubled, hardware should also be increased twofold so that the cluster could continue working properly;
- **Fault tolerance**: the principle of horizontal scalability implies that there might be numerous machines within a cluster, which in its turn means that some of these machines will definitely be out of order. Methods for working with Big Data should take into consideration the probability of such cases, so as to get over them with no serious consequences;
- **Data locality**: In large distributed systems data is usually shared among a big number of machines. If data is physically located on one server and processed on another one, the costs for transferring data may even exceed the expenses for the processing itself. That's why the principle of data locality (i.e. data is stored and processed on the same machine) turns out to be one of the key principles of designing Big Dara solutions.

All the modern tools for working with Big Data comply with the above-mentioned principles to a certain extent. Methods, approaches, and paradigms for the development of data processing tools are to be devised so that we could be able to adhere to these principles.

Nowadays A_{BD} ={A*i*} set of various techniques for the analysis of big volumes of data on the basis of tools provided by statistics and information science is available.

The total amount of data is increasing and so is the amount of its internal and external sources. The data itself is becoming more complex and diverse (structured, unstructured, semi-structured) with various indexation schemes (relational, multidimensional, NoSQL) being used, which in its turn proves the need for new analytical tools. Former data processing techniques turn out to be inefficient – *Big Data Analytics* is applicable to large and complex volumes of data, thus the terms *Discovery Analytics* (what analytics discovers) and *Exploratory Analytics* (what analytics explains) are also being used.

Nowadays there tends to be no difference between Big Data and Big Data Analytics terms. Both of them are used to describe the data itself as well as management technologies and methods of analysis (Barsegyan, 2009). Big Data Analytics is a development of the data mining concept since it involves the same tasks, application areas, data sources, methods, and technologies. The years between the introduction of the data mining concept and the beginning of the era of Big Data were marked by dramatic changes in the volumes of data to be analyzed as well as by the development of high-performance computing systems and other new technologies (e.g. MapReduce and its numerous software implementations). The advent of social networks posed new tasks and challenges.

Data mining is a decision support process based on analyzing raw data with the aim to find hidden trends as well as previously unknown, non-trivial, practically applicable knowledge which is available for interpretation and necessary for making new decisions in various spheres of human activity (Barsegyan, 2009), (Paklin, 2009), (Duke, 2001).

Data mining represents a special approach to data analysis. The emphasis is made not only on extracting facts but also on generating hypotheses. Generated hypotheses should be examined by means of ordinary analysis within conventional schemes and/or with the help of experts in the particular subject area.

The mentioned approach involves using traditional analytical tools such as mathematical statistics (regression, correlation, cluster and factor analysis, time series analysis, decision tables etc.) as well as the tools related to artificial intelligence (machine learning, neural networks, genetic algorithms, fuzzy logic etc.).

If data mining approach is supplemented with MapReduce technology and 4V requirement (Volume, Velocity, Variety, Veracity), it will represent the functional relationships of Big Data Analytics (Fig. 1).

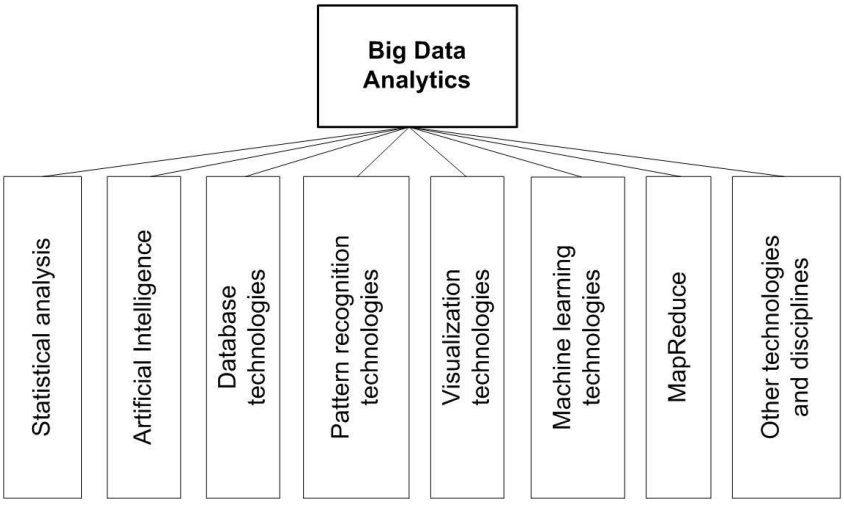

Fig. 1: Functional relationships of Big Data Analytics.

Analysis of large data volumes, as well as the need to understand values in terms of individual behavior, require using processing methods which go far beyond the conventional statistical ones (Barsegyan, 2009).

Methods and techniques of analysis applied to Big Data are also described by McKinsey (Manyika, 2011): Data mining methods, crowdsourcing, data consolidation and integration, machine learning, neural networks, network analysis, optimization (e.g. genetic algorithms), pattern recognition, predictive analysis, simulation modelling, spatial analysis, statistical analysis, analytical data visualization.

In (Manyika, 2011) introduced the following list of methods for the analysis of Big Data analytic methods (in alphabetical order): A/B testing, Association rule learning, Classification, Cluster analysis, Data fusion and data integration, Ensemble learning, Genetic algorithms, Machine learning, Natural Language Processing, Neural networks, Network analysis, Pattern recognition, Predictive modelling, Regression, Sentiment Analysis, Signal Processing, Spatial analysis, Statistics, Supervised and Unsupervised learning), Simulation, Time series analysis and Visualization.

This list can by no means be regarded as a complete one, however, it contains the approaches most widely used within various fields.

Furthermore, some of the techniques mentioned should not necessarily be applied exclusively for the analysis of Big Data, but can rather be successfully used for smaller volumes of data (e.g. A/B testing, regression analysis). It thus becomes obvious, that the larger and the more diversified data set is analyzed, the more accurate and relevant results can be obtained from it.

Let us describe the groups of methods and technologies for the analysis of Big Data classified regarding functional relationships and formal model of the information technology in question – namely Data mining methods, Text mining technologies, MapReduce technology, Data visualization as well as other analytical methods and technologies (Fig. 2).

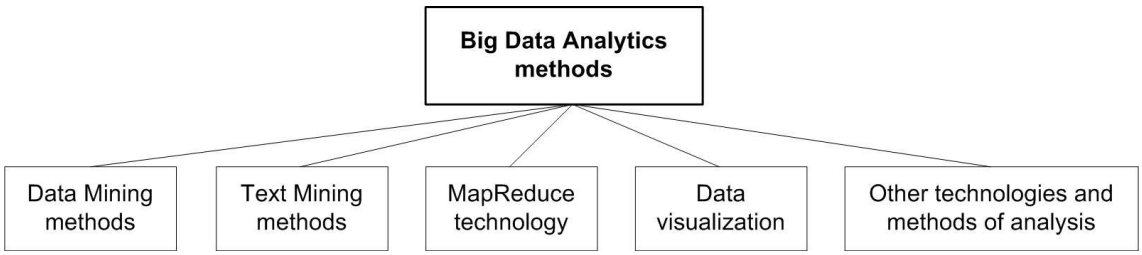

Fig. 2: Groups of Big Data Analytics methods.

The Groups of methods and technologies for the analysis of Big Data can be formally presented as five sets, which looks like:

$$A_{BD} = \langle M_{Data\ Mining}, M_{Visualization}, T_{Text\ Mining}, T_{MapReduce}, T_{other} \rangle, \quad (2)$$

where:

$M_{Data\ Mining}$ — a set of data mining methods;

$M_{Visualization}$ – methods of graphic representation of the analsyis of Big Data;

$T_{Text\ Mining}$ – Text mining technologies;

$T_{MapReduce}$ – MapReduce technology;

T_{other}. – specific methods and technologies for the analysis of Big Data.

3.1 Data mining methods

Data Mining – is a process of detecting hidden relationships and general trends between the variables within large volumes of raw (unprocessed) data.

The following tasks may be solved by means of data mining methods and technologies (Barsegyan, 2009), (Paklin, 2009), (Duke, 2001), (Zhuravlev, 2006), (Zinovev, 2000), (Chubukova, 2006), (Sitnik, 2007), (Witten, 2011):

1. *Classification* – the process of identifying the features characteristic for classes – groups of objects within the set of data under research. These features allow determining whether any new object belongs to the class in question. The

method of Nearest Neighbor and k-Nearest Neighbour as well as Bayesian Networks, induction of decision trees and neural networks are generally used to solve the classification tasks.

2. *Clustering* – the process of dividing objects into groups.

3. *Association* – the process of finding general trends for the related events within a data set. Apriori algorithm is the one most generally applied for association rule learning.

4. *Sequence (sequential association)* allows specifying temporal dependencies between the transactions. Both sequence and association are mostly represented in the same way, but the former aims at defining relationships between the events related in time, which means that it is characterized by a high probability of the chain of such events.

5. *Forecasting:* future values of indexes are estimated on the basis of characteristic features of collected data. Neural networks, as well as the methods of mathematical statistics, are generally used to solve the forecasting tasks.

6. *Deviation Detection, deviation analysis,* and *outlier analysis* – the process of identifying unusual patterns as well as detecting and analyzing data which is the most different from the rest of the dataset.

7. *Estimation* comes down to predicting the continuous values of attributes.

8. *Link analysis* – the task of identifying dependencies within a data set.

9. *Visualization (Graph Mining):* graphic images of data are developed. Graphic methods representing the general trends of a data set are commonly used to solve the visualization tasks.

10. *Summarization* – the process of describing particular groups of objects by means of the data set under analysis.

Data mining is a set of techniques allowing to detect consumer groups most receptive to the promoted product or service, to define the characteristic features of the most successful workers as well as to develop consumer behavior model.

Data mining methods are generally divided into two broad categories – supervised learning and unsupervised learning (Barsegyan, 2009), (Paklin, 2009), (Duke, 2001).

According to another classification, the whole variety of data mining methods can be divided into two groups – statistical and cybernetic methods (Fig. 3). The following classification scheme is based on various approaches to mathematical models of learning (Barsegyan, 2009), (Paklin, 2009), (Duke, 2001), (Zhuravlev, 2006), (Zinovev, 2000), (Chubukova, 2006), (Sitnik, 2007), (Witten, 2011).

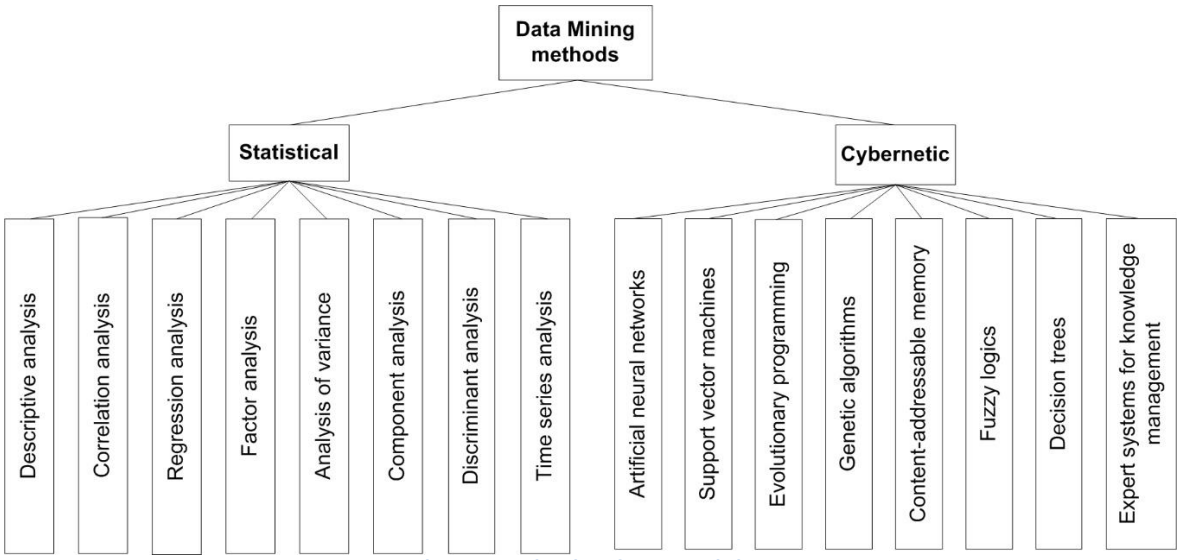

Fig. 3: Methods of Data Mining.

Statistical methods of Data Mining. These methods include conducting primary analysis into the nature of statistical data (verification of stationery hypothesis, normality hypothesis,

independence hypothesis and homogeneity hypothesis; evaluating the type of distribution function and its parameters) and multidimensional statistical analysis (linear and nonlinear discriminant analysis, correlation analysis), identifying relationships and regular patterns (linear and nonlinear regression analysis, cluster analysis, component analysis, factor analysis) as well as developing dynamic models and making forecasts on the basis of time series. Statistical methods of data mining are divided into four groups: descriptive analysis and description of the initial data; relationship analysis (correlation and regression analysis, factor analysis, analysis of variance); multidimensional statistical analysis (component analysis, discriminant analysis, multidimensional regression analysis, canonical correlation analysis); time series analysis (dynamic models and forecasting).

Cybernetic methods of *Data Mining.* This group includes the following methods: evolutionary programming, content-addressable memory (finding analogs and prototypes); fuzzy logic; decision trees; expert systems for knowledge management; artificial neural networks (pattern recognition, clustering, forecasting); genetic algorithms (optimization). Let us describe those of the mentioned methods which are most applicable for the analysis of Big Data (Barsegyan, 2009), (Paklin, 2009), (Duke, 2001), (Zhuravlev, 2006), (Zinovev, 2000), (Chubukova, 2006), (Sitnik, 2007), (Witten, 2011), (Marr, 2015), (Einav, 2013), (Vanyashin, 2013), (Serov, 2012), (Ronen, 2014), (Aflalo, 2013), (Gadepally, 2014), (Weinstein, 2014), (Paklin, 2013).

Association Rule Learning – a group of techniques for identifying relationships (i.e. association rules) between variables in large data sets. Association Rule Learning is a method for detecting curious correlations between variables in large databases. **Association analysis** is carried out in terms of market basket analysis.

Classification is a set of methods allowing to predict the behavior of consumers within a particular market sector (making decisions about purchases, outflows, consumption rates etc.).

Statistical classification is a method for defining to which category a new observation belongs. It requires preparing a set of properly identified observations or historical data. Statistical classification can be used e.g. to automatically assign documents to particular categories, to classify objects into groups, to develop profiles for the students taking an online course as well as for the purposes of focused hiring.

Decision trees is one of the most popular methods for solving classification and forecasting tasks. In its simplest form decision tree is a technique for representing rules in a sequential hierarchical structure. Answers to the certain range of 'Yes'/'No' questions constitute the basis for this structure. Algorithms for creating decision trees usually involve two basic stages – *tree building* and *tree pruning.* On the stage of tree building, the task for choosing decomposition criteria is usually solved and the process of learning is terminated (in case this was predefined by an algorithm). The stage of tree pruning mostly involves cutting some branches of the tree. Method of decision trees is generally known as a 'naive' approach.

Cluster analysis is a method for classifying objects into groups by means of identifying previously unknown general features. Market segmentation is an example of cluster analysis.

Girvan-Newman algorithm within the MLP method (Markov Cluster Algorithm) is used to solve the clustering tasks for graphs.

'Dynamic Quantum Clustering Methodology' implementing the paradigm 'let data speak for itself' was developed for the analysis of multidimensional Big Data (Weinstein, 2014).

DQC method (like many other methods used for analysis of Big Data) 'works' with no prior knowledge about such 'structures', their type and topologies, which can be hidden within data and discovered only after the application of the method in question. DQC method also 'works' perfectly well with multidimensional data with the duration of analysis being linearly dependent on the size of data set.

Regression is a set of statistical methods for identifying regular patterns between a dependent variable and one or several independent variables. It is very often used for making predictions and forecasting. Regression analysis on its basic level involves working with an independent variable (e.g. background music) so as to find out how it affects a dependent variable

(e.g. time spent in the shop). It defines how the values of a dependent variable are changing when an independent variable is changing itself. It functions best for continuous quantitative data such as weight, speed or age. Regression analysis is used to determine how customer satisfaction influences customer loyalty, how the number of received support calls depends on the weather forecast from the previous day, how the neighborhood and the size of the house affect its price and how good are your chances to find the love of your life on the dating website.

Time series analysis comprises a set of methods borrowed from statistics and digital signal processing, which are used for the analysis of data sequences recurring in the course of time. Its obvious applications include tracking securities market and patient disease rates.

Outlier analysis is applied for fraud detection, personality marketing as well as for medical analysis.

Machine learning is a branch of informatics (also known as 'artificial intelligence', this being its historical name), which is aimed at developing self-learning algorithms on the basis of empirical data analysis.

'Machine learning' as a branch appeared after the science of neural networks split into the learning methods for neural networks and types of network architecture and network topology. It also comprises the methods of mathematical statistics. Basic network types, namely perceptron and multilayer perceptron (as well as their modifications) can perform both supervised and unsupervised learning as well as reinforcement learning and active learning. However, the majority of statistical methods, as well as some neural networks, belong to a single type of learning only. That's why the methods of machine learning are classified in accordance with learning types. Though when it comes to neural networks, these are the learning algorithms that are classified:

- *supervised learning:* each precedent is associated with a 'situation – appropriate decision' pair; error correction and backpropagation methods are applied;
- *unsupervised learning:* each precedent is associated with a particular 'situation' only; objects are to be united in clusters on the basis of data on their pairwise comparison, and/or the dimensionality of data is to be reduced; alpha-system reinforcement, gamma-system reinforcement, the method of nearest neighbors;
- *reinforcement learning:* each precedent is associated with a pair 'situation – decision made';
- *active learning:* a learner algorithm itself assigns future situation for which the correct answer will be known for further investigation;
- *semi-supervised learning:* some precedents are associated with a 'situation – appropriate decision' pair, whereas others – with a particular 'situation' only;
- *transduction learning* – semi-supervised learning when the prediction is to be made only for the precedents from the test set;
- *multi-task learning* involves learning a group of interrelated tasks simultaneously. A certain 'Situation – appropriate decision' pair is associated with each of these groups;
- *multi-instant learning:* precedents are divided into groups. One precedent within each group (however, it is not known which one exactly) is associated with a pair 'situation – appropriate decision', whereas all the other precedents are associated with a particular 'situation' only.

Machine learning comprises software able to extract knowledge from data. This allows computers to learn without being directly programmed, and to focus on making predictions on the basis of familiar features, extracted from the sets of training data.

Nowadays machine learning is used to detect spam and ham email messages, to obtain information with regard to customer benefits as well as to make suggestions based on this information, to identify better content so as to attract prospective customers, to assess the probability of winning the case and to establish legal norms for the delivered bills.

Supervised and unsupervised learning. A set of techniques based on the technologies of machine learning which allow identifying functional relationships within the data sets under research. Unsupervised learning in terms of its basic features turns out to be quite similar to cluster analysis.

Ensemble learning. This method involves applying a set of predictive models which improves the quality of forecasting.

Evolution Analysis. Genetic algorithms. Genetic algorithms were inspired by the nature of evolutionary processes – that is, by the mechanisms of mutation, inheritance and natural selection. These mechanisms are used to 'evolutionize' useful solutions to problems which require optimization. This technique involves representing possible solutions as 'chromosomes', which can combine with each other and mutate. Like in the process of natural evolution this is the most adapted creature that survives.

Genetic algorithms are used to solve various tasks – arranging the schedule for doctors in an emergency department; creating combinations of the most appropriate materials and engineering techniques needed to design cost-effective cars; generating artificial creative content - e.g. jokes or puns, forecasting stock market index by means of time series analysis.

Neural networks represent a class of models which function by analogy to the human brain and after completing the learning stage with training data sets are used to solve various tasks of the data analysis.

Neural networks serve as a model of biological neural networks of the brain with homogenous elements (artificial neurons) imitating neurons.

The neural network is represented in the form of weighted directed graphs, where artificial neurons serve as nodes and synaptic links between them – as edges.

Neural networks are used to solve the following tasks: automating pattern recognition processes, making predictions regarding enterprise performance metrics, performing medical diagnostics, forecasting, adaptive management, expert systems development, associative memory implementation, digital and analog signal processing, synthesis and identification of electronic systems.

Neural networks may, for instance, also be used to predict sales volumes and financial market rates, to recognize signals and to develop self-learning systems.

3.2 Data visualization

Data visualization comprises methods used to convey the results of Big Data analysis in graphical form – as diagrams or as animation in order to make these results easier to understand and to interpret. Data visualization involves representing information in the form of pictures, graphs, schemas and diagrams using interactive features and animation both for the results and as an input data for further analysis (Paklin, 2013).

Illustrative representation of the results of Big Data analysis turns out to be of major importance for their further interpretation (Zelazny, 2004), (Roem, 2014), (Tafti, 2014), (Yau, 2013), (Iliinsky, 2011), (Krum, 2014), (Tukey, 1981), (Alper, 2006). Human perception is limited, and the scientists still continue their research aimed at improving modern methods of presenting data in form of images, diagrams or animation. The following methods are among the most advanced ones in terms of data visualization:

- *tag cloud.* Each element within a tag cloud is associated with a certain weighted index which correlates with the font size. In the process of text analysis value of the weighted index directly depends on the usage (citation) frequency of a single word or word combination. It enables a reader to get a general idea of an arbitrarily big text or text sets in a considerably short period of time;
- *clustergram* is a visualization technique applied during cluster analysis. It displays how certain elements of a data set correlate with clusters when the quantities of clusters are being changed. Determining the optimal number of clusters turns out to be the essential component of cluster analysis;
- *history flow:* it allows tracking changes in the document which is being worked on by many authors simultaneously. The time is measured along the horizontal axis, whereas the contribution by each of the authors (the amount of text entered) – along with the vertical one. Each author is associated with a certain color on the diagram;
- *spatial information flow:* this diagram helps tracking spatial distribution of information. The brighter the line – the more data is transferred in a unit of time.

3.3 Text mining technologies

Statistical and linguistic analysis, as well as artificial intelligence methods, serve as a basis for **Text mining** technology. This technology is used for conducting analysis, providing search and navigation in unstructured texts (Barsegyan, 2009), (Statsoft, 2017), (Lande, 2017), (Barsegyan, 2007), (Linyuchev, 2007), (Pleskach, 2011). Application of the Text mining technology allows users to obtain new knowledge.

Text mining technologies represent a set of methods aimed at deriving knowledge from the texts by means of modern information computer systems allowing to detect regular patterns, which enable users to obtain useful data and new knowledge.

Text mining like the majority of other cognitive technologies is an algorithmic detection of previously unknown relationships and correlations already present within the text data.

The approaches and the methodology of data extraction analysis (e.g. classification and clustering methods) are widely used in terms of Text mining technology. Text mining in its turn provides new opportunities – automatic text annotation and phenomenon (i.e. concepts, facts) detection.

One of the important tasks of Text mining technology consists in extracting characteristic elements and features from the text in order to use them as the metadata, keywords, and annotation for the document in question. Another important task involves defining the category within the given text classification scheme to which this document belongs. Text mining technologies provide a new level of semantic document search.

The capabilities of modern Text Mining systems are used to solve the tasks of identifying templates within a document, automatically 'popping' data and dividing it by profiles, creating document overview etc.

Text Mining is a tool allowing to analyze large amounts of data to identify trends, templates, and interrelations, which can turn out to be especially helpful when making strategic decisions. The key idea behind the Text Mining technology consists in enabling analysts to work with large amounts of input data by means of the automated knowledge extraction process. Key methods of Text Mining technology involve classification, clustering, development of semantic networks, relationship, event and fact extraction, feature extraction, summarization, automatic annotation, question answering, thematic indexing, keyword searching, development and maintenance of taxonomies and thesauri. Visualization as a technique for processing structured digital data is also of major importance for Text Mining technology. Visualization is used both as a method of content representation and as a navigation mechanism which can be applied when processing documents or document classes.

Content analysis may serve as an example of successful application of Text Mining technology. Content analysis stands for both qualitative and quantitative systematic processing, evaluation and interpretation of text form and content.

Content-analysis is characterized by a strict procedure and is known to provide well-grounded conclusions. This method is based upon text quantification and further interpretation of the obtained results. The subject of content analysis comprises both problems of social reality which are described or vice versa hidden in the documents and inner characteristic features of the research object itself (Lande, 2017). One reason for the popularity of this method is that it allows measuring human behavior (if we consider verbal behavior to be one of its forms). Unlike surveys content analysis assesses not what people say they have done or will do, but what they actually did.

Two major types of content analysis – qualitative and quantitative analysis – can be distinguished. The task of calculating the frequency of certain topics, words or symbols within a text can be solved by means of quantitative content analysis. Qualitative analysis is applied to single out unusual expressions and linguistic intonations while still placing great value on the content of the message itself. As the automation tools and texts in electronic form become more and more widespread, the methods of content analysis for large volumes of data develop rapidly.

3.4 Other technologies and research techniques

Let us describe several research methods and disciplines related to Big Data technology (Zhuravlev, 2006), (Zinovev, 2000), (Chubukova, 2006), (Sitnik, 2007), (Witten, 2011), (Marr, 2015), (Einav, 2013), (Vanyashin, 2013), (Serov, 2012), (Ronen, 2014), (Aflalo, 2013), (Gadepally, 2014), (Weinstein, 2014), (Paklin, 2013).

A/B testing (*Split testing*) is a method of marketing research which involves consistently comparing control set with other sets. We can thus define the optimal combination of various factors to achieve, for instance, the best customer response to a certain marketing offer. Big Data allows to run a great number of iterations and consequently obtain statistically correct results. This method is also applied when optimizing Web-pages for certain purpose.

Natural language processing is a set of techniques borrowed from linguistics and information science, which are used for natural language recognition.

Sentiment analysis. Techniques for natural language recognition serve as a basis for the methods of sentiment analysis. By means of this method, specific messages related to the certain object (e.g. an item of consumer goods) may be singled out from the general information flow. The polarity (positive or negative coloring) of the expression, as well as its emotional degree, are then being evaluated.

Sentiment analysis allows researchers to define the attitude of speakers or authors to a certain topic. It is therefore widely used, for instance, to improve the quality of service in the hotel chain by analyzing comments of the guests, to arrange services and benefits in accordance with what customers ask for, to identify consumers influenced by social media.

Network analysis comprises a set of techniques used for the analysis of links between the nodes of the network. When applied to social networks, it allows examining relationships between certain users, companies, and communities.

Social network analysis was first used in the telecommunications industry and was then eagerly adopted by sociologists to investigate interpersonal relationships. Nowadays it is applied to analyze relations between people in various spheres of human life, especially in business activities. Nodes represent people in the network whereas links represent relationships between the individuals. Social network analysis is also applied to solve the following tasks:

- investigating how people from different backgrounds establish connections with the strangers;
- measuring the degree to which a individual can influence the group and estimating the importance of such influence;
- defining the minimum number of direct links needed to connect two people;
- understanding the complex social structure of the client database.

Optimization represents a set of quantitative methods used for redesigning complex systems and processes in order improve one or several parameters. It can be of great help when making strategic decisions, for instance, when creating a product line to be brought to the market or conducting investment analysis.

Pattern recognition comprises a set of techniques together with the elements of self-learning which may be used to predict the models of customer behavior.

Predictive modeling is a set of techniques allowing to create a mathematical model of previously specified course of events or another probable scenario. Analysis of a CRM-system database aimed at identifying conditions which may prompt users to switch to another provider can serve as an example of predictive modeling.

Signal processing comprises a set of techniques borrowed from radio technology, which aim at recognizing signal in the background noise as well as analyzing it.

Spatial analysis is a set of techniques partly borrowed from statistics which involve using topological, geometric and geographical information for data analysis. In such cases, these are the geo-information systems that serve as a source of Big Data.

Statistics is a science of collecting, organizing and interpreting data as well as creating questionnaires and conducting experiments. Statistical methods are very often applied to

analyze judgments about the relations between various events.

Modelling the behavior of complex systems is widely used to make predictions, forecast and process various scenarios while planning.

Crowdsourcing is a method for collecting data from many sources. Crowdsourcing involves categorizing and enriching data by a wide indefinite circle of people to use their creative abilities, knowledge, and experience through the application of information and communication technologies.

Data Fusion and Data Integration comprise a set of techniques allowing to integrate heterogeneous data from various sources to conduct the deep analysis. Combination of these techniques provides an opportunity for analyzing user comments on social networks and comparing them with current sales results.

3.5 MapReduce Technology

The technology of distributed file systems made it possible to develop and maintain data warehouses hundreds of terabytes or petabytes in size [48]. When hundreds of terabytes or petabytes of data are being analyzed, data cannot be transferred to any other location for further analysis. The process of transferring data to a separate server or parallel processing server is very likely to take a lot of time and to require too large traffic. Analytical calculations should rather be carried out in the place physically close to where the data is stored. Distributed systems for data processing index and store data on several (and even several thousands) hard drives and servers instead of saving it within the single file structure. A map containing information about the location of certain data is then being created.

Hadoop is one the most famous systems which uses the mentioned approach.

To process data within a distributed file system, one should perform low-level calculations such as addition, aggregation etc. in its physical location within the file system. Then the map of executed algorithms is created so that the local results can be tracked. These results can further be reduced. Such approach and template for executing computable algorithms are therefore known as **MapReduce** (Stonebraker, 2010), (Berezin, 2013), (Lebedenko, 2013), (Pavlo, 2009), (Asash, 2015). MapReduce is a framework for calculating certain sets of distributed tasks by using a large number of computers (nodes) which constitute a cluster. Data saved both within the file system (unstructured data) and in the databases (structured data) can thus be processed.

Broadly speaking, MapReduce has only two main steps: On Map-step the input data is being preprocessed. One of the computers (master node) receives the input tasks, divides them into smaller parts and distributes them to other computers (worker nodes) for further processing. On Reduce-step preprocessed data is being rolled up. Master node receives responses from the worker nodes, which then serve as a basis for the final result – solution of the input task. Users apply Map function to process all the key/value pairs and generate a set of intermediate key/value pairs, whereas Reduce function is used for combining all the intermediate values, associated by the same intermediate key. Another approach to MapReduce technology involves following 5 steps of parallel and distributed calculations, namely preparing input data for Map() function; executing Map() function set by the user, ‘shuffling’ output of the Map() function to Reduce processors; executing Reduce() function set by the user and generating final result.

MapReduce is a model of distributed calculations, introduced by Google which is used to make parallel calculations on large (several petabytes) datasets within computer clusters Stonebraker, 2010), (Berezin, 2013), (Lebedenko, 2013), (Pavlo, 2009), (Asash, 2015).

As far as the realization is concerned, an analytical platform for the analysis of Big Data should be able to apply modern MapReduce technology. In fact, however, analysis of Big Data rarely involves making statistical conclusions for all the data. The importance of Big Data consists in the ability to divide data into ‘microsegments’ and create a great number of models for small observation groups by means of data mining and predictive modeling.

Numerous practical tasks may be implemented within this programming model. Various tools for data aggregation in a distributed file system are available, which allows conducting the analytical process quite easily.

4 ONTOLOGY FOR BIG DATA ANALYSIS

Suggested description of methods and technologies for the analysis of Big Data allows us to create an ontology in terms of METHONTOLOGY (Gavrilova, 2000), (Gavrilova, 2001), (Gavrilova, 2003), (Lytvyn, 2011), (Veres, 2015), (Lytvyn, 2017), (Vysotska, 2013), (Vysotska, 2014), (Vysotska, 2016) approach, which represents the process of iterative development. According to METHONTOLOGY methodology, term glossary contains all the terms (concepts, their instances, attributes, actions) important for the analysis of Big Data, as well as their natural language descriptions.

Term glossary of ontology for the analysis of Big Data contains previously mentioned terms which can be semantically divided into the following groups: task structure (technology analytics groups, connections), data covering the task (methods applied for each of the groups) and results of calculations (recommendations on applying Big Data to increase the efficiency of the decisions made). Ontology for Big Data analysis developed by means of Protégé-OWL ontology editor is displayed in Fig. 4 to Fig. 8.

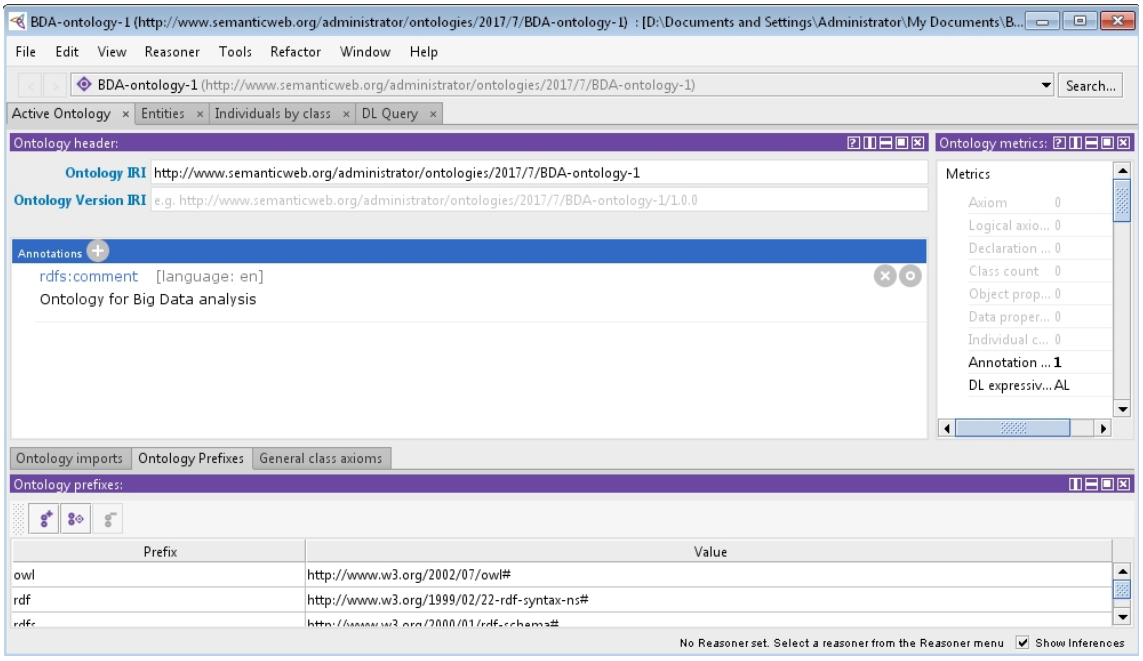

Fig. 4: Annotation the ontology for Big Data analysis.

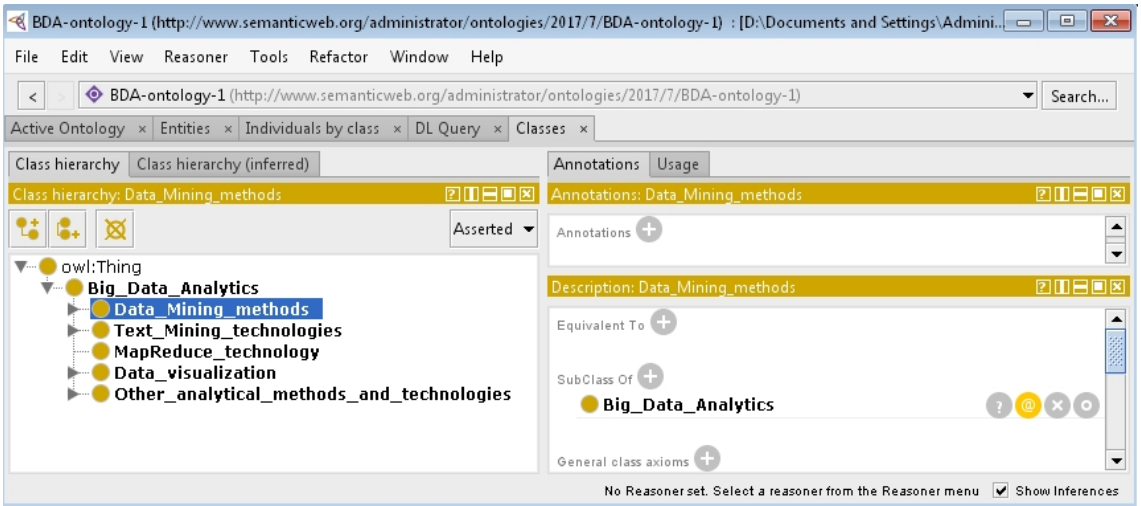

Fig. 5: Subclasses of class "Big Data analysis".

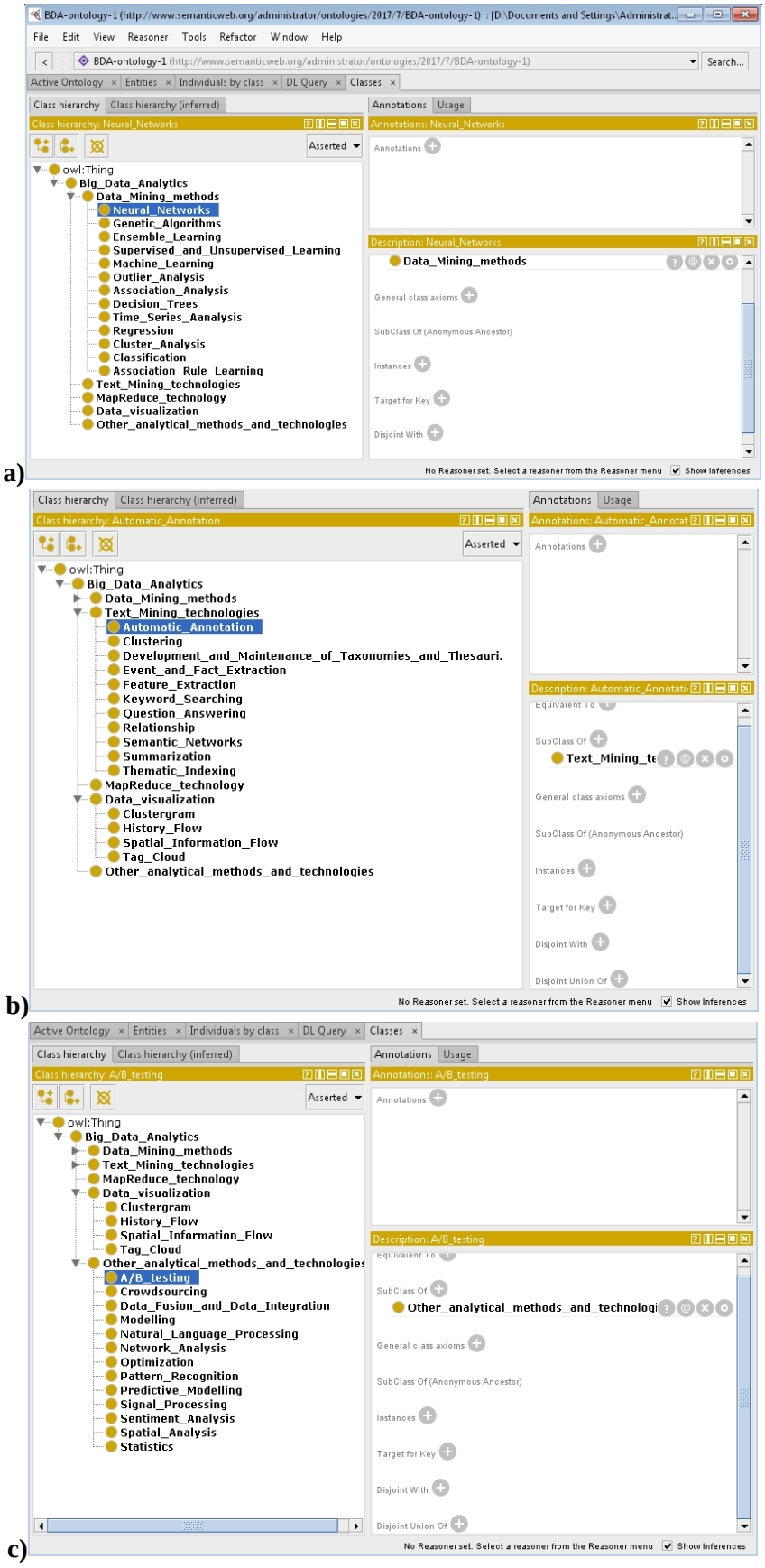

Fig. 6. Subclasses of class a) "Data mining methods";
b) "Text mining technologies"; c) "Other technologies and research techniques".

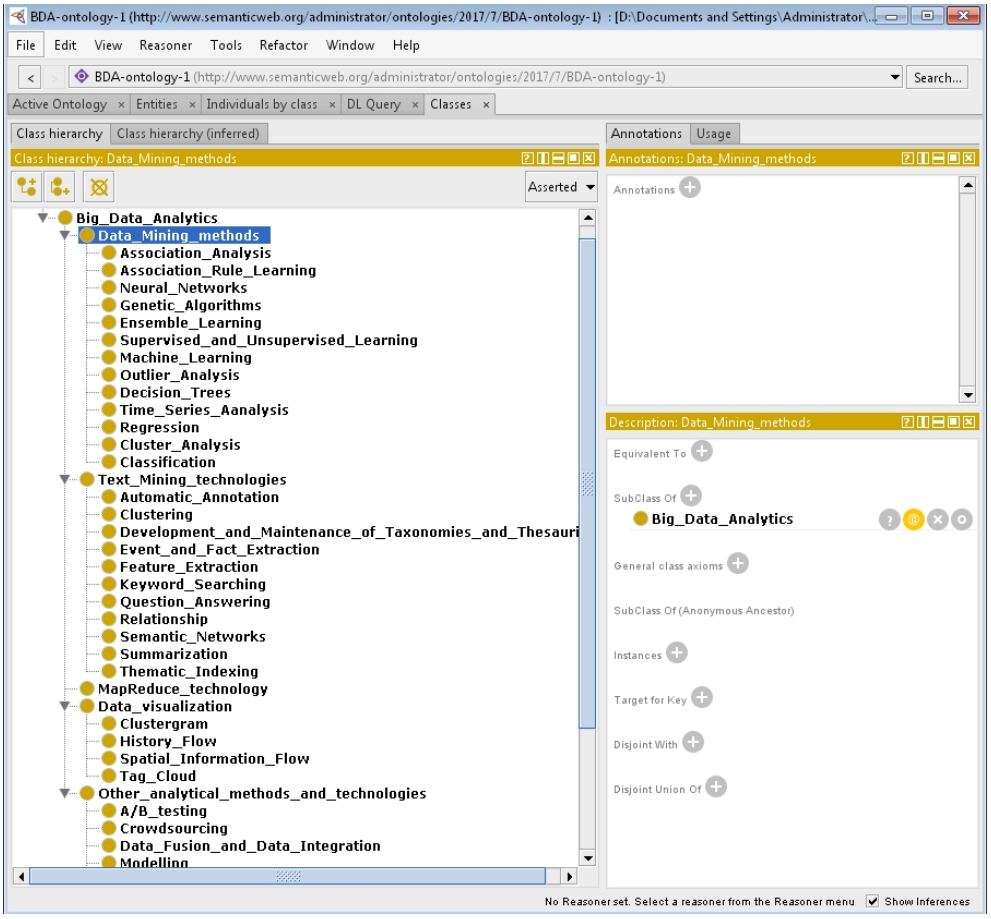

Fig. 7: Hierarchy of classes within the ontology for Big Data analysis.

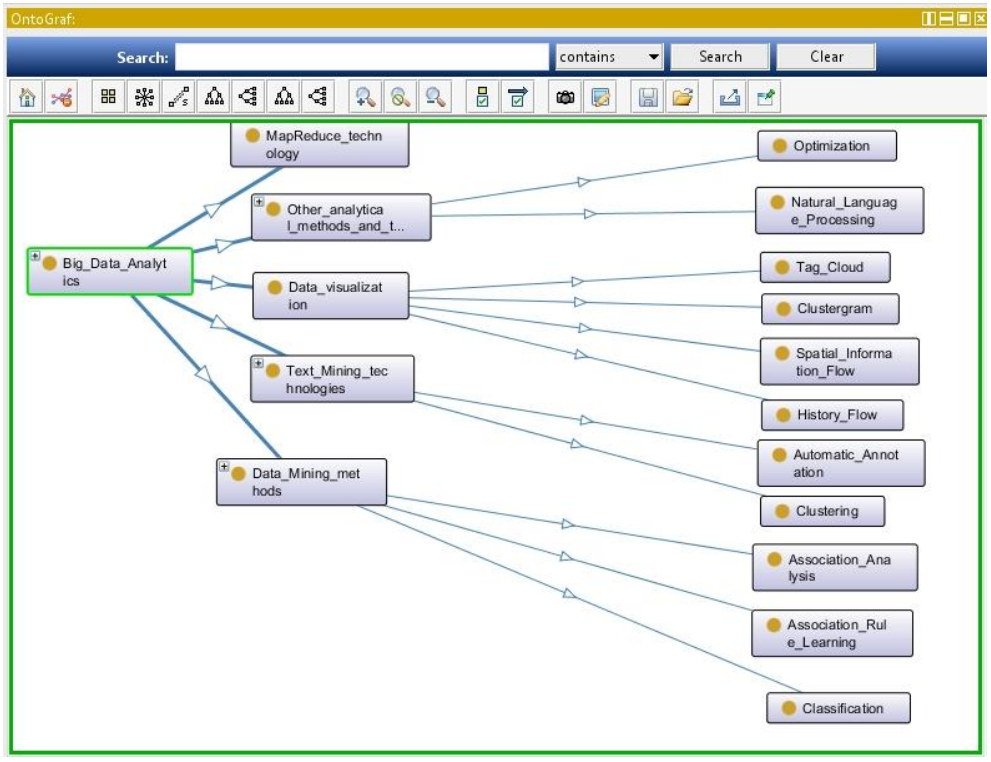

Fig. 8: The structure of the ontology for Big Data analysis in the form of a graph.

5 CONCLUSION

Big Data as a technology turns out to be of great practical importance since it enables solving topical issues of everyday life while at the same time constantly creating new ones. Big Data can change the way we live, work and think.

Nowadays the ability to store and analyze large volumes and streams of information turns out to be one of the key preconditions for the successful development of global economy. The countries which will master the most effective ways of working with Big Data are thought to face an industrial evolution of new kind. The branch of Big Data consolidates efforts of the organization in terms of storing, processing and analyzing large data sets.

One of the most common mistakes with regard to big amounts of data is a naïve expectation that buying large computer infrastructure will definitely be beneficial for the business. However, both information technologies, informatics, and mathematics should go hand-in-hand. Infrastructure is without any doubt extremely necessary, however, in order to benefit from Big Data, one should be able to adopt more complex methods of its analysis.

As a result of this research, formal model of Big Data information technology was used to explain the classification of methods and techniques for the analysis of Big Data into groups. In order to achieve the desired goal and with regard to functional relationships and the formal model of an information technology in question, it was suggested that the methods available should be classified into data mining methods, Text Mining technologies, MapReduce technology, Data visualization and other methods and techniques of analysis. Characteristic features of methods and techniques belonging to each group were described taking into consideration the definition of Big Data.

Thus, using the formal model developed as well as the results of the critical analysis conducted, an ontology for the analysis of Big Data may be created.

Further research will be focused on investigating methods, models, and tools in order to refine the ontology for the analysis of Big Data and to provide more effective maintenance for the development of structural components for the model of decision support system for Big Data management.

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MOTIVATION OF POPULATION TO PREPARE FOR CRISIS SITUATIONS

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Abstract

The crisis is, because of the conceptual sign itself, in most cases, a very difficult predictable phenomenon, something unusual, distinct from an event that is regularly and predictably recurrent and which, if it occurs, threatens a large number of inhabitants, property, and the environment. The public's preparedness for extraordinary events can best be achieved if the objectives of education are well known, as well as the content of education, forms, methods and means of education, as well as the expected results. To achieve the best possible learning outcomes, it is necessary to analyze current practical solutions to prepare the population for crisis situations. Although an individual cannot reverse the course of a crisis event, he can significantly reduce consequences by choosing right behavior. This individual behavior can be achieved by applying individual motivational theories. Preparedness in case of danger can best be achieved if there are well-known targets teaching people the contents of education, forms, methods and means of education, motivational techniques and instruments and the expected results of the action plan for crisis events, of course, that all these forms of preparedness filled with must scrutinize issues relating to them. Some knowledge can be gained from the past, but we must be aware that for the present time it can be almost useless, we can say that they are applicable only to acquire basic knowledge.

Keywords: *crisis, analysis, crisis preparedness, motivation, motivational theory.*

1 INTRODUCTION

One of the decisive assumptions for reducing the consequences of crisis events is the preparedness of the population for them. No or inadequate preparation for crisis events often leads to an inappropriate response of the

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population and, together with panic, the loss of life and property is being multiplied.

Current practice shows that people do underestimate the preparation for crises. This has several causes. One of them is the insufficient motivation for crisis preparedness, mainly due to the underestimation of the crisis events consequences. In this situation, the proper motivation of the population can play a key role in improvements in the crisis preparedness itself.

There are many motivation theories that provide rules, methods, and tools for how to effectively motivate people and how to direct them to the actual crisis preparation. Their application must be based on historical experience and analysis. Both positive and negative experience can play a significant role in the application of motivation theories nowadays.

2 MOTIVATION IN IMPROVING THE POPULATION´S PREPAREDNESS FOR CRISIS SITUATIONS

When examining the behavior of a person in a crisis, it is necessary to address the question of what the reason is why a person is behaving in a certain way and not differently and what forces a person to act just as they are behaving. This survey must be based on historical experience using mathematical and statistical methods and correct interpretations of the results from the point of view of motivating the population to specific types of crisis response and their subsequent behavior. We conducted this type of survey in 2016 on a sample of people in the village of Makov and used the results in assessing selected theories of motivation from the point of view of their application in motivating the population to improve the crisis preparedness.

More motivation theories and methods can be used to motivate the population to improve their crisis preparedness. A **motive** is an inner movement that stimulates and maintains the activity of a person and guides it in a certain direction towards a goal, e. g. it determines the direction and intensity of their behavior and acting as well as the course of the activity that is being performed. The motive is the core of motivation (Istp, 2014). Its effect lasts if the target is reached or is not extinct.

Motivation deals with many theories designed to motivate people to a certain type of behavior and reaction. It is a very complex process that affects many subjective factors. Residents react responsibly or spontaneously according to their knowledge, experience, information, and their personal characteristics and characteristics in relation to crisis events and their consequences.

Motivation is one of the basic psychological processes. Motivation is an internal drive that stimulates human action (ManagmentMania.com, 2015). Motivation can be divided into subjective and objective. Subjective motivation is the inner motivation of a person to act in a workplace as well as in an out-of-work environment. Objective motivation means the ability to motivate others to perform a certain one-time or repeated activity. Motivation can be triggered by various stimuli (stimulating or activating factors) (ManagmentMania.com, 2015). Motivation is closely related to the **performance** of a person.

Motivation can also be divided into positive and negative. Positive motivation means motivation with positive incentives such as self-esteem, moral appreciation, and material benefit. Negative motivation is based, for example, on the use of punishments or the instigation of fear, e. g. fear of loss of work, property, family, etc.

3 THEORIES OF MOTIVATION IN IMPROVING THE POPULATION´S PREPAREDNESS FOR CRISIS SITUATIONS

There are many motivation theories including principles, patterns, methods, and tools on how to motivate people and how to direct and effectively lead them to achieve the set goals. Several theories of motivation can be applied in crisis management to improve the population's preparedness for crisis situations.

Theories of motivation are divided into content theories and process theories. **Content theories** address the issue of what really motivates people, they explain motivation in terms of needs, specify different needs, and explain dynamic changes in some needs. **Process theories** explain how the motivation in the work environment origins, they explain motivation in terms of perceptions,

expectations, and assumptions on how to achieve the satisfaction of needs.

The first of the most important theories of motivation **the Adams' Theory of Justice** (also known as the Equity Theory) was published by John Stacey Adams in 1965. It is based on two levels. The remuneration is adequate in relation to the accomplished task or realized work performance and at the same time is adequate towards the colleagues at work, which means it is fair. John Stacey Adams' theory addresses both material and non-material needs and rewards.

We think that, from the point of view of crisis management, this method can be considered as basic and can be effectively utilized in practice. If a citizen participates in actions organized to improve crisis preparedness, he is entitled to a fair reward. This remuneration may be based on benefits granted to the public by government or self-government bodies. In this context, we cannot omit the benefits that could be provided by non-state actors, e. g. insurance houses. Residents who would not participate in the events and preparations would not be entitled to these benefits.

Another theory was dealt with by an American psychologist **Abraham H. Maslow**. He has concluded that every behavior or action of a person is driven by an effort to meet their needs. These needs can be arranged in a pyramid based on physiological needs, the need for safety and security, the necessity of friendship and love, the need for recognition, and the need for self-realization to be the most important for motivational theory (ManagmentMania.com, 2015). First, the person needs to satisfy their basic physiological needs such as breathing, drinking, and eating which are then followed by the sense of security, recognition, and self-actualization.

The importance of this theory in crisis management can be seen in the fact that we need to realize which levels of the pyramid are emerging in the crisis phenomena. This will obviously be the satisfaction of the basic needs that will be critical in crisis situations. Emphasis and awareness of this can make a significant contribution to motivating the population to improve their crisis preparedness. At the same time, it can also significantly affect professional crisis management personnel in the content and methodological direction of population training.

Alderfer's Theory of Motivational Needs is based on three motivational factors:

- existence, e. g. job security,
- relatedness, e. g. friendship, recognition in the social network,
- growth, e. g. the possibility of professional self-realization (ManagmentMania.com, 2015).

The use of this theory in practice is given by the satisfaction of existential needs and consequently by satisfying the needs of relatedness, which will ultimately lead to the satisfaction of the growth needs.

We consider the use of this theory especially appropriate for motivating individuals; it can be successful, for example, in conjunction with methods of psychology. It touches not only job positions in a state of security, but also those within the crisis staff or in the preparation and execution of crisis planning tasks. An example of these workers can be a positive example of the successful resolution of the consequences of crisis events, based on their thorough preparation in the state of security. Similarly, mutual assistance of the public and their public appreciation can be of considerable importance in motivating the improvement of crisis preparedness.

Herzberg's Two-Factor Theory. Frederick Herzberg formulated his two-factor theory of motivation in 1959. He named two fundamental factors in his theory that comprise a source of job satisfaction and motivation for the people. The first factor is the one that causes work discontent. The second factor is the factors that enhance motivation and satisfaction (motivators) (Pommfiova, 2003). Fulfilling motivating factors is a prerequisite for effective long-term motivation and drive to higher productivity, and their non-fulfillment does not necessarily mean dissatisfaction.

From the point of view of motivating population for crisis preparedness, we believe that this theory can be a success if we would persuade managers, as well as ordinary citizens that this kind of preparation is important and is irreplaceable in

protecting their lives and property. An important role here must also be the belief in the importance of specific activities (creation of crisis plans, preparation of crisis teams, construction of flood protection structures, fire-fighting measures, and others). If a successful implementation of pre-prepared measures occurs, it can have a very positive impact not only on professional workers but also on ordinary citizens. A negative example of those who have not prepared and suffered considerably more damage and losses compared to the prepared may also have a highly motivating effect.

Taylor's Theory of Motivation. F. W. Taylor is considered as the father of scientific management. He concluded that the scientific approach can increase the performance of the workforce. He focused on exploring a man, primarily as the object of management. His goal was to maximize the output of the work while minimizing the consumption. It was important to him to consider the material motivation of workers and the man to be understood as an economic being (Dravecky, 2014).

In crisis management practice, financial and material motivation of the population to improve crisis preparedness can be an important argument. We assume that, in the case of financial incentives, participation in the preparation of citizens would appear to have increased (Bajzikova, 1999). The same effect could be the application in the form of public benefits for active participation in the preparation and response to crisis events. This could include, for example, tax relief, reduction of public service charges in municipalities, free participation in community events and more. The question is the effectiveness of these measures and their verification. Their effectiveness should also be enhanced by application of other theories of motivation.

Mayo's Theory of Motivation. This theory was founded by E. Mayo. He studied the impact of psychological factors on the results of human work (Kubani, 2001). The need to respect the relationship of workers to the social conditions of their activities has contradicted the concept of scientific management. His work is based on the fact that the work itself, the conditions of the production process and the physical needs of the people, usually have less influence on the results of the work then the social and psychological factors. He emphasized the importance of social relations for work motivation.

In this case, we encourage people to participate in actions to improve crisis preparedness, for example by using the psychological effect of the question "Do you know what you are entitled to in an extraordinary event?" On this occasion, the residents would be informed of their duties in a non-violent way. This theory can be applied very successfully in motivating the citizens for crisis preparedness in the form of lectures, joint exercises and other activities aimed at preparing for crisis events. A very important factor that is unnecessary to be applied in this theory is the so-called Grouping, e. g. parents with children, the retired, etc. Relating to informing the population about potential violations of family, working and other social relationships, this can significantly affect their motivation to improve the crisis preparedness.

McGregor's Theory X and Y. Theory X is the realization of the central principle of leadership by laying down guidance, instructions, orders, and control done by top managers. It is a realization of the forms of authoritarian management (Paskova, 2008) (Antusak, 2009). Theory Y represents the style of leadership based on the integration of the interests of the members of the organization by directing their efforts by their own initiative and choice of the means within the set conditions in order to achieve the goals (Schvarczova, 2011) (Kubani, 2001). Theory X is authoritative, pessimistic, static, and rigid. Theory Y is dynamic, optimistic, and flexible. It is recommended not to use the X style exclusively (Sorensen & Yaeger, 2015) (Schvarczova, 2011).

From our own as well as external experience, we have concluded that this theory can play a significant role if the population has recently been directly affected by the effects of a crisis or if the crisis affected their relatives or close residents. Medial information on the origin and consequences of crisis events may be of similar importance. In this case, residents are much more accessible and responsive to their own preparation. Their internal motivation is fulfilled. At the same time, a much more effective impact of external motivation can be expected from the

position of professional crisis management staff in state administration and self-government bodies. The use of this theory to motivate the population to improve crisis preparedness is conditioned by the compliance of mental needs within the motivation itself.

Locke´s Goal Setting Theory. According to this theory, the motivation and work performance of an individual depends on the specific goals set. High motivation will occur when goals are set high but reasonable and if there is effective feedback on performance (Antusak, 2009). It is necessary to set realistic and achievable goals - a specific task assigned, a specific deadline or a defined level of performance, then the relevant feedback will also take place.

The application of this theory is only possible if the population is convinced of the importance of preparing for crises, for example on the basis of their own or foreign positive or negative experience. Under this condition, they will obviously be willing to take on tasks and set "goals" in terms of improving crisis preparedness, too. Goals can be very diverse, and their formulation will depend on a specific subjective and objective situation.

The last theory, **the Expectancy Theory**. was developed by Victor Vroom. It is the most famous and successful theory. It is a more complex model of motivation than the Equity Theory (Schvarczova, 2011) (Kubani, 2001). The Expectancy Theory has several versions and a different naming. It is a model based on the mindset of thinking about the situation. According to this theory, motivation depends on two things, namely how much we want to achieve in something, and how likely we are to achieve it (Antusak, 2009) (Sorensen & Yaeger, 2015). Vroom defined motivation as process governing choices among alternative forms of voluntary activities. Motivation to act depends on the degree of expectation of what results will follow (Schvarczova, 2011) (Kubani, 2001). The basic model of the Expectancy Theory of motivation includes the following assumptions:

- motivation leads to effort,
- effort combined with the ability and environmental factors results in performance,
- performance leads to different outcomes when each is associated with specific reward (Paskova, 2008) (Kubani, 2001).

The application of the Expectancy Theory in practice is based on the recognition that each person adapts his / her work effort according to his/her subjective conviction about the achievability and attractiveness of the goal, which means how he/she answers the following questions:

- Is my objective attractive to me?
- Is it probable that I will accomplish the task?
- Is it likely that I will receive a reward that meets my expectations? (ManagmentMania.com, 2015)

This theory contains the basis of almost all previous theories. Its importance in motivating the population to improve the crisis preparedness is seen in the complexity of the approach. It confirms that it is not possible to establish a universal model of the stated motivation. It clearly leads to the conclusion that it is necessary to develop a procedure (an algorithm, a model, etc.) in order to determine the correct motivation according to a specific objective and subjective conditions.

4 CONCLUSION

The preparedness of the population for crisis events is not sufficient. There is little attention paid to the internal and external motivation of the population to improve their crisis preparedness. There is no incentive methodology developed at the level of public administration. Government authorities, local governments, and other stakeholders do not have any legal obligations or responsibilities in this area. There is no comprehensive legal regulation in the Slovak legal environment which would comprehensively identify all necessary documents for crisis education of the population. These facts have a significant connection with the confidence of the population towards the state and its representatives.

Each of the above-mentioned theories of motivation could be used to motivate the population to improve the crisis preparedness. We think that we can best utilize **the Expectancy theory in combination with other theories.** Residents will be better motivated if they are

treated fairly and demotivated if they are treated unfairly.

Especially in connection with Taylor's theory of motivation, based on motivation through financial or material rewards, these are the real motivation tools. These facts should be decisive when deciding on forms of population training for crisis situations.

In terms of the Expectancy Theory, we propose to develop a theory of motivation of the population to improve the crisis preparedness. This role shows unambiguous aspects of scientific research with significant benefits for theory and practice of crisis management.

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ECONOMIC EFFECTS OF DYNAMICS IN MIGRATION PROCESSES

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Abstract

Considerable interstate movements of the labor force are taking place in nowadays world economy due to the reasons of economic and non-economic character. It makes the governments all over the world find mechanisms and take measures concerning the regulation of international labor migration. In this regard, it is impossible to use the complex approach of search without investigating the macroeconomic effect of this phenomenon to find out the major social and economic determinants. Economic effects have a significant impact on economies of donor and recipient countries. An important indicator for investigating the economic effect of international labor migration is money transfers. They cause redistribution of net benefits from emigration between labor importing and labor-exporting countries, as well as they, facilitate the GDP growth, the creation of new workplaces, investment processes and business development, and stimulate housing mortgage crediting. The negative effects of remittances on the economy of the donor country stipulate the stimulation of price increase on goods and services, the formation of the greater dependence of the donor country's economy on the labor force emigration, the reduction of probable governmental investments or foreign investments. In case of an appropriately constructed policy, the negative effects of international labor migration decrease while the positive impact on national economy increases. The article determines the effects of international labor migration and provides recommendations as for maximization of the positive impact of international labor migration on countries' economies all over the world.

Keywords: *economic effects, remittances, international labor migration, emigration, transfers*

1 INTRODUCTION

A significant impact on world economy leading to great interstate labor force movements causes the reasons of economic and non-economic nature. The latter include political and religious reasons, integration and dissolution of states, natural

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disasters, wars, ecological problems and the reasons of a personal nature. Each of these and many other reasons can lead and do lead to the implementation of measures concerning the regulation of international labor migration.

However, the complex approach to searching the regulation mechanisms of international labor migration is impossible without investigating the macroeconomic effect of this phenomenon in order to find out the major social and economic determinants.

The object of the study is economic effects of dynamics in migration processes. The subject of the investigation is mechanisms and processes of international labor migration. The goal of the research is to determine the positive and negative impacts of international labor migration on donor and recipient countries. Here arises the need for finding out the scientific solution of the problems concerning the investigation of economic factors that influence the international labor migration as well as determining the positive and negative impacts of international labor migration on countries' economies all over the world.

In order to achieve the goal and solve the problems of the investigation the authors suggest the use of the following research methods: the method of logical generalization – to study the concepts of "economic effects", the essence and prerequisites of international labor migration; structurization – to systemize the economic factors influencing the international labor migration; statistical – to determine the dynamics of major indicators connected with international labor migration, labor migrants' remittances; comparison, analysis and synthesis – to generalize the approaches evaluating macroeconomic effects connected with the regulation of international labor migration.

Methodological approaches are applied in the study. The use of structural and functional approach is stipulated by the task to find the optimal decision as for overcoming the negative effects of international labor migration all over the world. For this purpose, the major factors forming the economic aspects of international labor migration all over the world are specified.

The system approach is used in order to determine the positive and negative effects of international labor migration in labor-importing and exporting countries. The major elements are formed and the interrelationships between them are established, as well as recommendations that will contribute to maximizing the positive impact of international labor migration on countries' national economies are determined.

Theoretical and methodological problems concerning economic effects of migration processes are elaborated by scientists, namely: the issues of the countries' economic positioning in terms of the impact of international migration were investigated by S. Hrynkevych, Y. Pakhomov, S. Pyrozhkov, T. Romashchenko, V. Oryeshkin; some aspects as for the impact of international labor migration on national labor markets of donor and recipient countries were described in scientific works of S.L. Brue, C.R. McConnell, D. W. MacPherson, L. Korchevska, E. Libanova, I. Olshevska, H. Hlushchenko, O. Rovenchak; the issues concerning the foreign migration management were analyzed by A. Haidutskyi, O. Malynovska, S. Metelyev, O. Polishchyuk. However, the consequences of international labor migration that must lower its negative effects and maximize the positive impact on the countries' national economies in the world need to be constantly corrected.

2 FACTORS INFLUENCING THE ECONOMIC ASPECTS OF INTERNATIONAL LABOR MIGRATION

In economic literature the economic effect is interpreted as the difference between the results and costs (Mochernyi, 2001), however, at the same time the assessment of economic effect of international labor migration can be given at different levels, in particular, at the level of a donor or recipient country; an individual or a household (Zayonchkovskaya, Molodikova, & Mukomel, 2007).

The major factors influencing the analysis of economic aspects as for the international labor migration may be considered the following:

1. Migration costs. International migration involves costs connected with resettlement and transportation of personal property; alternative costs caused by profit losses during relocation and

resettlement in a host country; costs connected with adaptation to new culture, language, climate, etc. If these costs exceed benefits which will be provided by high wages and salaries in a host country, the potential emigrant rejects emigration.

2. Unemployment. The frequent reasons of migration are not differences between the levels of wages and salaries in various countries, but chronic unemployment or part-time employment. Consequently, a certain country benefits from the emigration of unemployed people as they take no part in the creation of the country's national product and live due to transfer payments of working people. The citizens' well-being of this country will be increased by the sum of these transfer payments if unemployed people emigrate to other countries. And on the contrary, if migrant workers won't be able to find a job in a country and will get money for living due to working people, the average real profits of this country's workers will decrease.

3. Fiscal aspects. The immigrants' influence on tax revenues and state losses of a host country depends on the characteristics of these immigrants. If immigrants are young, qualified, educated, speak the language of a host country, they will find an appropriate job and will pay high taxes. If immigrants are unqualified, don't know the language, they will need the state or charitable assistance for some years in order to learn the language and assimilate.

4. Reverse flows. Returning to their home country emigrants bring great wealth and considerable work skills as well as managerial experience, which they will use in their countries after some period of time. Thus, reverse flows, i.e. the emigrants' comeback to their home countries after having earned money abroad, in the course of time change the interrelationships between benefits and losses in the countries. However, it often happens that emigrants having acquired experience and qualification stay in a host country. Moreover, mainly highly qualified workers leave the country, i.e. the "brain drain" leading to the decrease in technological potential of labor-exporting countries and the decline of their general scientific and cultural level takes place.

5. Money transfers serve an important indicator for investigating the economic effect of international labor migration, their amount, dynamics and intended use acquiring a special meaning. The labor exporting country usually gets a peculiar kind of payment for such an export, i.e. it gets remittances. These remittances are the part of emigrants' profits that are transferred to their families staying in their home countries. This leads to redistribution of net benefit from emigration between labor exporting and labor importing countries. Remittances from emigrants working in another country will cause the growth of national product in it and, accordingly, losses of national product in the country of origin.

In 2015, labor migrants transferred nearly $601 billion to their relatives staying in home countries. The developing countries acquired $441 billion from this sum; it is three times higher than the volumes of international financial aid (Migration and remittances, 2016).

The role of migrants' remittances at a macro-level is shown in contributing to GDP growth, primarily, by trade development and production of consumer goods due to demand increase stipulated by receiving remittances from abroad. The migrants' remittances also facilitate the creation of new workplaces, investment processes and, consequently, business development; in addition, they stimulate mortgage lending. The migrants' remittances have the positive impact on economies in donor countries of the labor force in terms of the increase in purchasing power at a macro level. They also facilitate the development of the economic sector producing consumer goods that, in its turn, favors the increase in the budget revenues, national revenues and the improvements in the country's balance of payments (Haidutskyi, 2010).

In general, a number of money transfers depends on three main factors: loan, insurance, and altruism. A number of transfers vary according to the dominated factor. In this regard, loan means regular payments aimed mainly at consumer prices. Insurance which is likely to have the form of accumulation is used by the members of the family in order to stabilize the economic situation in case of an economic crisis or force majeure circumstances. The altruistic approach is temporary since after some period of time a gradual reduction in the amounts of remittances occurs (Poirine, 1997).

The major factors influencing the volumes of labor migrants' money transfers are considered to be the migrant's level of education and qualification. Together with the growth of the labor migrant's level of education the volumes of his remittances increase correspondingly, an intensive growth in the volumes of money transfers taking place among migrants who have studied more than 17 years (Bollard). However, it is still a debating point in scientific literature since some investigators taking into consideration the migrants' level of education, the income level in a donor country of labor migration, the development of financial sector and expected rates of economic growth prove that the total volume of the labor migrants' remittances reduces together with the increase in the number of migrants with higher education (Migration models).

Under conditions of excess supply of highly qualified workers in the domestic market, the international migration of the part of them doesn't have any negative impact on the economy of a donor country. In such a case, the "brain drain" is sure to stimulate the loss of a certain part of highly qualified workers, nevertheless under conditions of high supply in the national labor market this negative effect is compensated by additional training of new generations of highly qualified labor force by the national system of education due to the migrants' remittances (Skilled immigration in OECD regions).

The labor migrants' money transfers have two opposite economic impacts on the state of employment in the labor market of a donor country. Firstly, the unemployment level may increase if the receivers of these revenues will consider them to be one of the forms of social benefits. Secondly, foreign revenues reduce the interest rate and, therefore, encourage firms to increase investments that facilitate the creation of new workplaces. That is why the total economic effect will depend on which of these two impacts will dominate (Drinkwater).

In Ukraine, labor migration through money transfers has a significant impact on a series of economic processes in a donor country having, in such a way, an indirect impact on the GDP. The use of transfers in order to increase the educational level of the receivers of these transfers in the long term may lead to the growth of labor capital and compensate all previous economic losses (Shevchuk).

The main channels of getting money transfers are international payment systems (such as the Western Union, "Zolotaya Korona", MoneyGram, etc.) and the correspondent bank accounts. However, according to official statistics, the importance of international payment systems as a channel of getting money transfers increased from 37% at the beginning of 2011 to 53% in 2015 due to the reduction of the part of the banking system. After the loss of popularity and implementation of a tougher currency policy by the NBU, the international payment systems became again the biggest channel of getting money transfers in 2016 (Slobodian, 2015).

There is a great volume of not only official remittances but unofficial ones as well. Despite the fact that there are no precise measurements, it is noted that the volume of the latter may be compared to official ones (Kolosnitsyna, 2005). Nearly $250-300 billion of migrants' international money transfers are beyond official statistics since they do it through different unofficial channels (Haidutskyi, 2010). Low popularity of remittances through official channels is stipulated by lack of public confidence in the banking system as a whole, unwillingness to show real profits and insufficient financial literacy of the population. As the experience of other countries shows, the increase in volumes of remittances transferred through official channels increases the ability of the banks' lending to enterprises and, in such a way, economic growth has to be stimulated (Slobodian, 2015).

At the beginning of the 3rd century, the volumes of labor migrants' remittances to developing countries exceeded the scope of international technical aid from international financial organizations, and volumes of portfolio investments were practically equal to the scope of direct investments (Libanova & Paliy, 2004). This proves that the financial flow created by labor migrants' remittances is one of the largest and it links the developing countries with the world economic system.

It is generally admitted that the migrants' remittances make a positive external economic effect since they increase the GNP. In economies of many countries, not only in the low-income

developing countries but in the middle-income countries as well (Greece, Turkey, Portugal), the migrants' remittances are a significant augmentation of national income (Kolosnitsyna, 2005) and additional means of combating poverty in labor donor countries. The migrants' remittances are generally transferred in foreign currencies that improve the state of the balance of payments. Thus, the migrant workers' remittances to their home countries make two positive economic effects.

The additional positive effect from migrants' remittances on the donor country's economy relates to availability in some cases of a multiplier effect from such additional currency revenues. However, the existence of such a multiplier effect and its extent depends on the intended use of the migrants' money received in their home countries. It is worth noting that remittances not only lower the poverty level of migrants' families increase their income, but in case of multiplication they have a positive effect on the overall state of the country's economy and, consequently, on the population of a donor country.

However, there exist negative impacts of remittances on the donor country's economy. The most widespread is the effect of stimulating the price increases on goods and services if the supply of the latter in the national (regional, local) markets is fixed or limited. It concerns, for instance, such goods as land or real estate. In particular, in some countries, the prices of land are usually higher in the regions with a great number of inhabitants working abroad. The less widespread negative effect of migrants' remittances on the donor country's economy is the formation of a greater dependence on the donor country's economy on the emigration of the labor force, the reduction of probable governmental investments or foreign investments.

The negative impact of international labor migration on the donor country' economy is that due to prevailing illegal component migrants don't participate in formation of social funds that increases financial tension of the population's social security in a donor country, and in case of people's returning home at the retirement age arises the problem of their pension payments that may cause the social discontent in the society.

The immigration problem is complicated by a range of noneconomic factors. Mass migration is always accompanied by the increase of social tension in the society, criminality, conflicts on the racial, national or religious grounds and other phenomena.

Thus, labor migration has both positive and negative sides, moreover, "pluses" and "minuses" will be different for recipient and donor countries.

3 POSITIVE AND NEGATIVE EFFECTS OF INTERNATIONAL LABOR MIGRATION

The positive effects of labor migration for labor importing country include the aspects shown in figure 1.

Mitigation of employment problem due to the liquidation of the labor force deficit. Lack of labor resources may significantly hamper the country's economic growth. According to the Public Employment Service, the employers informed the employment centers that the number of vacancies in Ukraine accounted for 34 thousand on the first of December in 2015, and compared to the corresponding date it decreased by a quarter in 2016 (State Statistics Service of Ukraine, n.d.).

Stimulation of additional employment, the creation of additional workplaces and development of infrastructure caused by foreign workers' demand for goods and services.

Improvement of the population's living standards and quality of life, building construction and agriculture due to labor migrants' minimal requirements in choosing jobs that are not attractive for the local population.

Quality improvement of the local labor force. For that reason, attraction of migrant workers with low educational and qualification levels stimulates the local population to be engaged in more intellectual work, i.e. it contributes to their vertical mobility.

Saving on training (in case of qualified workers' attraction). Highly qualified specialists who received education in other countries bring "net income" to receiving communities that allows getting more return without preliminary expenses.

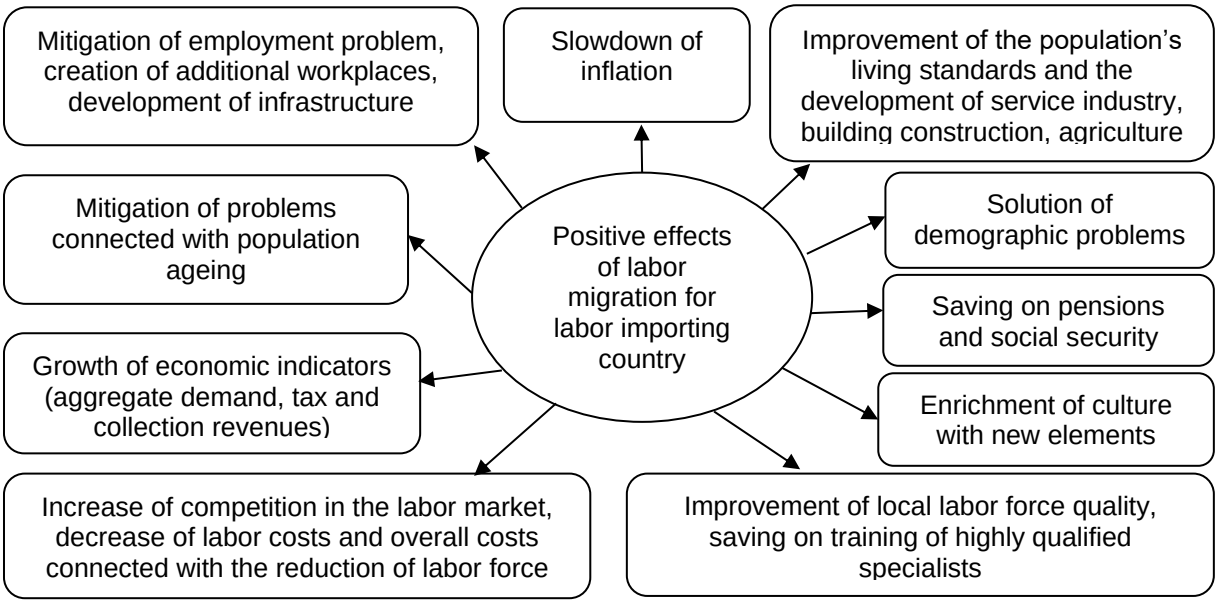

Fig. 1. Positive effects of international labor migration for labor importing country

Increase of labor productivity and efficiency, the competitiveness growth of goods produced by a country due to created prerequisites for attracting foreign investments because of the lower price of migrants' labor force, as well as introduction of new technologies, multiplier effect due to production growth and reduction of production costs (Zayonchkovskaya, Molodikova, & Mukomel, 2007).

A solution of demographic problems. Because of a difficult political situation, the number of emigrants from Ukraine has grown. During the period from January to October in 2015, the number of people who left the country was nearly 431 thousand of persons. Thus, the number of potential employable population of Ukraine decreases significantly (State Statistics Service of Ukraine, n.d.). For that reason, the migrants' attraction must be considered as the most optimal way of labor resources recruitment for future innovative development of Ukrainian economy. The evidence as for the competence of such a strategy is the experience of developed economies: the EU is planning to attract 40 million of migrants by 2050, the USA – nearly 100 million of people (Sytarchuk, 2010).

The growth of the host country's economic indicators (an aggregate demand; increase of budget revenues due to taxes and collections).

The slowdown of inflation due to foreign workers' stronger leaning to save money.

Mitigation of problems connected with population aging, especially in case of families' migration.

Migrants enrich the host country's culture with new elements contributing to the development of tolerance among local inhabitants (Slobodian, 2015).

Saving on pensions and other social security payments (in case of a temporary migration) (Libanova & Paliy, 2004).

However, a recipient country of labor migration will inevitably face the negative effects of labor migration. The most important of them is the shown in figure 2.

Dumping in the labor market and service industry that leads to the wage cuts of social workers. Foreign scientists point out that a great influx of labor migrants into the economy of the USA caused neither significant growth of unemployment nor wage cuts of social workers. This is stipulated by the fact that migrants perform low-skilled work while qualified workers don't feel an effect of competition from other countries' labor immigrants (Sytarchuk, 2010).

The increase of workplace competition, a complication of the situation in the domestic labor market and the marginalization of less qualified workers are caused by the fact that migrants occupy workplaces performing such a work that could be done by local population.

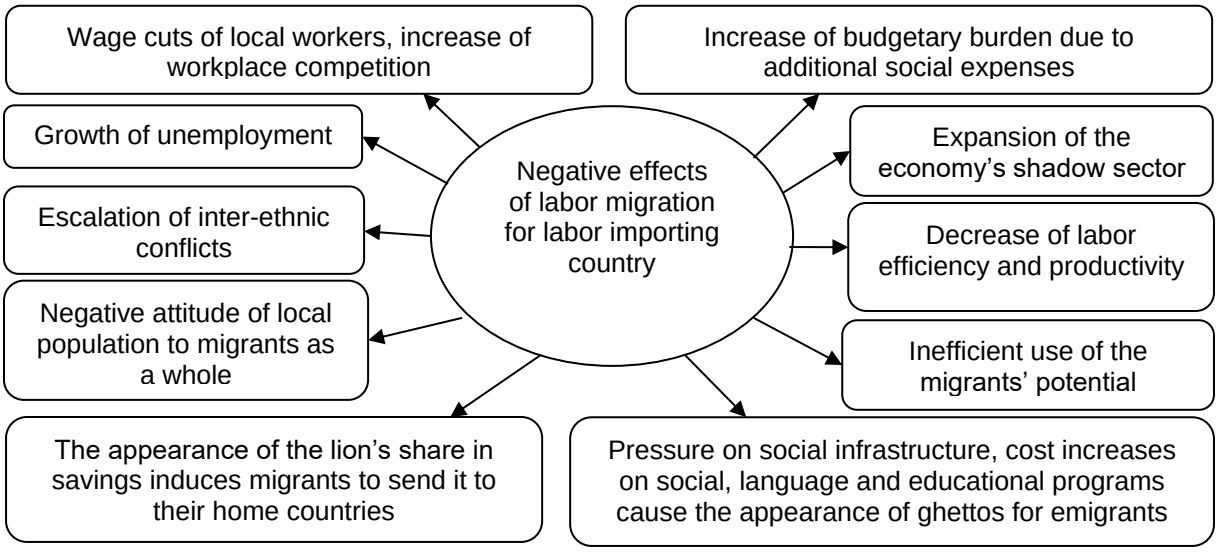

Fig. 2. Negative effects of international labor migration for labor importing country

The growth of unemployment caused by the mass influx of migrants. The number of unemployed persons in Ukraine accounted for 1,7 million people in the first half-year of 2015. According to ILO methodology the level of unemployment was 9,2%, and among the working-age persons, it accounted for 9,6% of the economically active population. Among the young people under the age of 25, the level of unemployment is more than twice higher than the country's average indicator of the economically active population that accounts for 21,3%. The indicators of unemployment in Ukraine don't differ much from the average indicators in the EU. So, among the population of all age groups, the average unemployment level accounted for 9,6% in EU countries, in particular, among the young people under the age of 25 it was 20,6% (The Major Tendencies in the Labour Market, 2015).

Migrants exerting pressure on social infrastructure accompanied by complications connected with housing problems as well as increasing costs of social, language and educational programs are the reason for the migrants' ghettos appearance (Kolosnitsyna, 2005).

The decrease of labor efficiency and productivity because of the problems connected with the introduction of labor-saving technologies that are caused by the use of cheaper labor force.

The increase of budgetary burden due to additional social expenses (primarily, in case of constant migration, families' migration and availability of "strong share of unemployment" (Sytarchuk, 2010).

Migrants send the lion's share of the savings to their home countries that don't contribute to the growth of their solvent demand in a host country and to reinvestments into the recipient country's economy (Zagulyaev, 2010).

The spontaneous influx of labor migrants and the absence of coordination between supply and real demand for the labor force cause inefficient use of the migrants' potential because of their concentration in those places where one can earn money quickly and illegally rather than in specific sectors and regions. For that reason, there is a need for the additional labor force.

Expansion of the economy's shadow sector. Large-scale economic and criminal offenses (smuggling, illegal financial operations) take place. For that reason, the state has to bear additional costs in order to neutralize criminalization (primarily, in case of illegal migration).

Not all investigators view improvement in the demographic state of the labor-importing countries as a positive effect. Some authors consider that the source of profit is intellect rather than labor; labor is only the method of intellectual realization. Thus, improvement in the demographic state of a country is possible only due to the attraction of "intellect-bearing" labor resources (Zagulyaev, 2010).

Negative attitude of the local population to migrants as a whole.

Escalation of inter-ethnic conflicts. Migrants may completely deny the host country's culture and try to impose their own one provoking in such a way inter-ethnic conflicts (Zayonchkovskaya, Molodikova, & Mukomel, 2007).

Just like the labor-importing country the labor exporting country also faces the negative and positive effects of labor migration. The latter include the following aspects (see Figure 3):

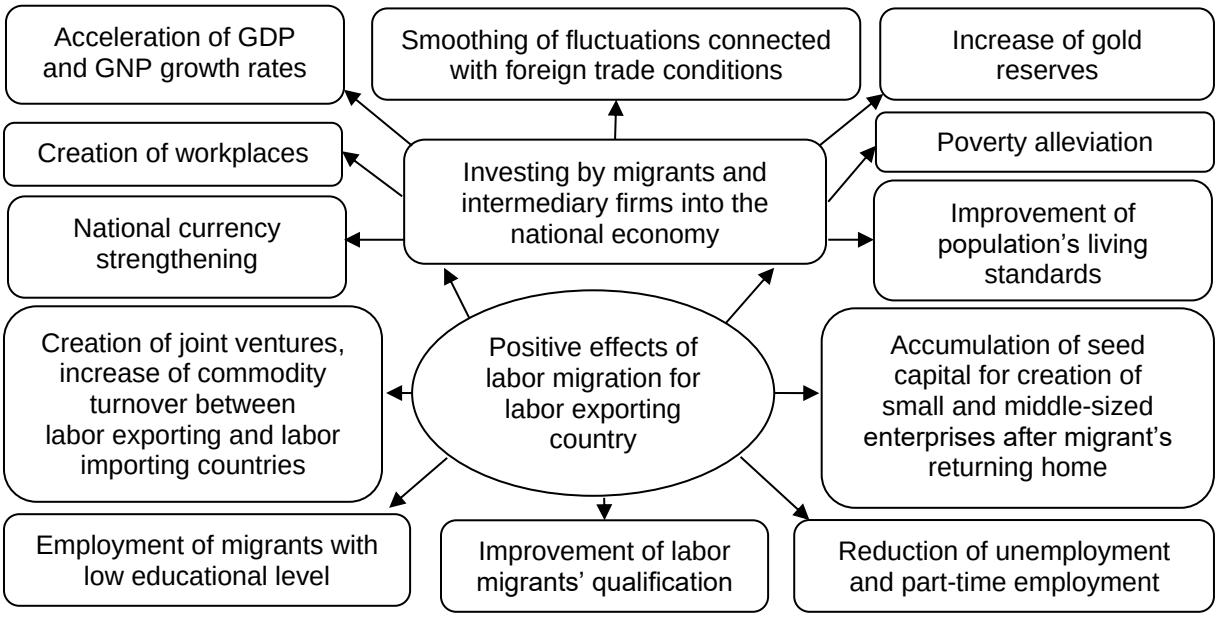

Fig. 3. Positive effects of international labor migration for labor exporting country

1. Reduction of unemployment level and part-time employment in donor countries (Zagulyaev, 2010).

2. Creation of workplaces, improvement of population's living standards and poverty alleviation due to investing by migrants and intermediary firms into national economy of the country of origin. Moreover, remittances strengthen the national currency, smooth the fluctuations of foreign trade conditions, accelerate the GDP and GNP growth rates and increase the gold reserves (Zagulyaev, 2010).

3. Qualification improvement of labor migrants working abroad, their acquiring of new productive and organizational skills that leads to further improvement of labor efficiency and productivity. Staying in the country with more advanced technologies, higher requirements for production processes, higher labor standards increases the general educational and cultural level of migrants, they acquire experience and knowledge that will be needed in their home countries.

4. Employment of migrants with low educational level; creation of business in the service industry of a recipient country.

5. Accumulation of seed capital for the creation of small and middle-sized enterprises after migrant's returning home that contributes to the formation of a middle class in a donor country.

6. Creation of joint ventures, increase of commodity turnover between labor exporting and labor importing countries.

7. Financial aid of labor force recipient countries in order to stimulate remigration.

However, it should be taken into consideration that the positive moments mentioned above don't contribute to long-term development of the labor exporting country.

The major negative effects of labor migration for a donor country are shown in figure 4.

Reduction of the country's productive capacity and low quality of staffing in manufacturing, building,

transportation and other sectors of the economy because of the outflow of highly qualified specialists and a decrease in a number of economically active population. On this basis, the state invests funds in training of specialists who realize their abilities and create additional value abroad.

Intellectual impoverishment, dissolution of intellectual community and lack of professional labor force that requires expenses on replacing the loss of highly qualified potential.

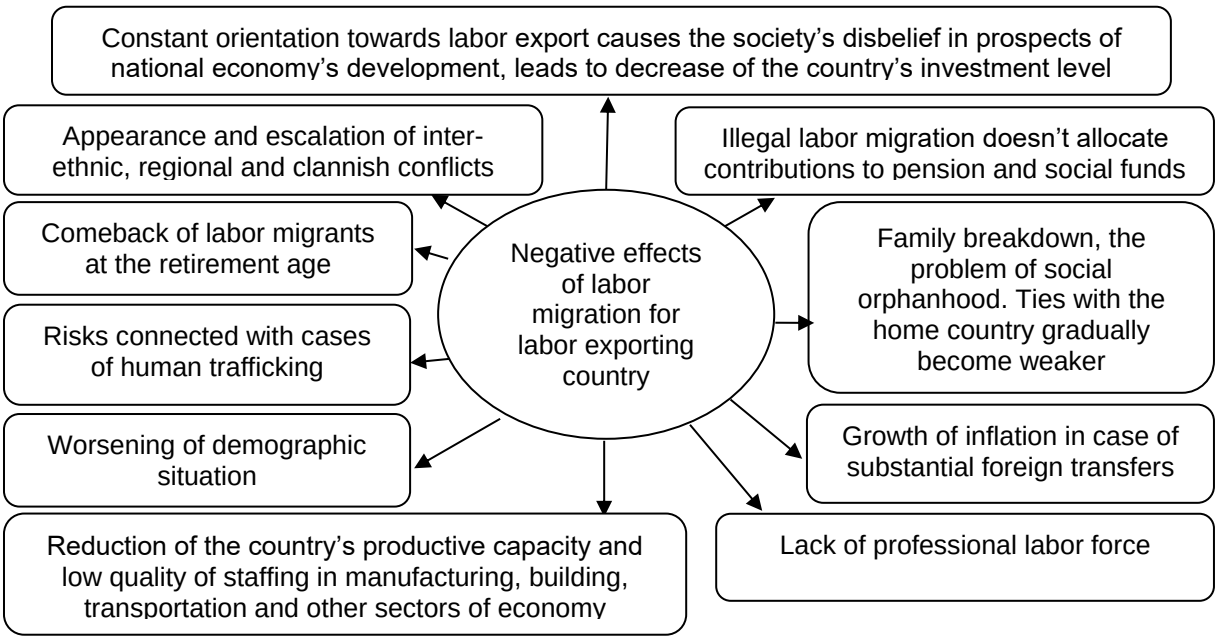

Fig. 4. Negative effects of international labor migration for labor exporting country

Loss of labor force qualification occurs when people are occupied in spheres that are not connected with their field of expertise.

Aggravation of ethnopolitical situation in a donor country, appearance and escalation of inter-ethnic, regional and clannish conflicts as well as weakening of cultural interethnic relations, break in the continuity of national traditions.

Constant orientation towards labor export causes the society's disbelief in prospects of national economy's development, leads to decrease of the country's investment level.

Worsening of demographic situation in a donor country due to emigration and the migrants' receiving the citizenship status in a migration country.

The more migrants live abroad, the less are their remittances, ties with the home country gradually become weaker.

The growth of inflation in case of substantial foreign transfers.

Illegal labor migration doesn't allocate contributions to pension and social funds.

Comeback of labor migrants at the retirement age

Family breakdown, the problem of social orphanhood.

Risks connected with cases of human trafficking (sexual exploitation abroad, slave labor).

All the variety of labor migration effects for both labors exporting and labor importing countries has much in common due to a hardly visible process of convergence in the level of earnings in the migrants' countries of origin and in the countries of their temporary residence. On the one side, the remuneration difference in the benefiting country leads to a reduction of working-age population. The surplus of human capital decreases, and, as a result, its price increases. Migrants having found out their labor price abroad become less flexible while concluding labor contracts in their home countries. Both factors make employers in the migrants' countries of origin take into consideration their remuneration level in the

countries of preferential emigration. On the other side, the influx of a cheap labor force into the countries with high remuneration level slows down its growth.

4 CONCLUSIONS

Thus, labor migration is an inseparable part of the modern labor market that influenced Ukraine to a great extent as it became the focal point of large-scale migration flows in the 21st century. The labor migrants' entry to Ukraine may become the reason of local workers' payment reduction and their substitution in the workplaces as well as it may increase the pressure on social infrastructure. It is worth noting that labor migration will have a positive impact on many aspects of Ukrainian economy reducing the problems of employment and creating additional workplaces, as well as increasing labor productivity and efficiency. Simultaneously, because of the outflow of labor resources, the importing country will face demographic problems, shortage of professional labor force and growth of inflation. However, unemployment reduction and investment into the economy of a donor country will contribute to the improvement of economic indicators and the middle-class formation.

At the same time, the migrants' remittances become a substantial source of financing the developing countries' economies as well as the countries with economies in transition. Considerable amounts of remittances decrease the current transactions deficit, reducing in such a way the possibility of a balance of payments crisis that, in its turn, is the most important condition for economic reforms in the least developed countries. In Ukraine, the migrants' remittances are the factors correcting the balance of payments and stimulating the GDP consumption and increase. Along with it, these funds are conditionally free of charge for Ukrainian economy as compared with the IMF credit tranches and loans, and they are a great potential for the country's banking sector.

Simultaneously, macroeconomic effects of international labor migration lie in the fact that the aggregate world output increases by means of the more efficient use of labor resources due to their redistribution between countries, international migration of labor force causing the tendency to wage parity on the worldwide scale.

The economic effect greatly depends on dynamics of migration processes, their structural characteristics (age-related, qualifying and legal status), type of migration, type of economic activities and the migrants' period of stay in a recipient country that stipulates the necessity of making primarily the structural analysis of migration flows in order to conduct further research concerning the economic effect of international labor migration.

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PRIVATE SECONDARY EDUCATION IN EX-YU COUNTRIES AND MANAGEMENT PRACTICE IN PRIVATE SECONDARY SCHOOLS

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JEL Category: **I21, M12**

Abstract
Private education business, as a specific category of private business, has been presented for a long time in the developed countries of the EU. In recent years this type of secondary education has been expanding also the ex-Yu countries. In comparison with the European Union, the management of private secondary schools in Serbia is also burdened with various problems. (No) the compliance of legal framework, somewhat dull strategy of education and outdated national qualifications frameworks imply a great medley in the said sphere of education, both in the public and in the non-public sector. In such situations, management of private schools is necessarily realized in analogous (apparently identical) manner as in public high schools. However, such a management model of private high schools is unacceptable as it severely limits the rights of the founder, as the subject who has invested capital in the school and that by that logic takes care of the development of the school and settle any losses in the business of the school. This paper aims to show the picture of private secondary education in ex-YU countries. There are shown the results of research on management of private secondary schools conducted in Serbia and that of a sample consisting of persons who are directly engaged in private secondary education.

Keywords: *private school; public (static) school; public school to private ownership; secondary school*

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1 INTRODUCTION

By its universal implications, the implementation and treatment of market economy also included the area of all levels and types of education. This

is particularly reflected in the structures of control of educational institutions and payments to the cost of education. As for the structure of control, it should be noted that today in most countries, schools are managed by their founders, which include: the state (for public schools) and legal and natural persons (for private schools). On the other hand, when it comes to paying the costs of education, it should be noted that the public schools today are primarily funded by combinations of budget funds and payments by the participants in education, while in private schools cost of education are defrayed exclusively by the participants.

An eligible common feature of the educational system of the EU is the legal foundation of the non-state education. Laws have provided the opportunity for individuals, institutions, churches, associations to open schools at all levels of education. The work of schools is based on established standards which are usually approved or recognized by the Ministry of Education. The biggest differences are in terms of financing schools. Practically in most countries, state participates in part in the financing and, especially of direct participants in education. About holders of managing private school, their status is treated differently in the EU.

2 STATISTICAL INDICATORS – EX YU AREA

2.1 General overview of the number of secondary schools

All statistical data relating to the number of schools and the number of children in schools relate to the end of the school year 2014/15 and beginning of 2015/16 year because there are no recent data on the official websites Bureau of Statistics and the relevant ministries.

In the former Yugoslavia (ex Yu) there are 1612 secondary schools, mostly in Croatia, 707 (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016), Serbia 506 (Municipalities and regions in the Republic of Serbia, 2015 - Education, 2015), Federation of Bosnia and Herzegovina (BiH) 200 (Directory of secondary schools in the Federation of Bosnia and Herzegovina, 2012), followed by Macedonia 118 (Primary, lower secondary and upper secondary schools at the begining of the school year 2015/2016, Macedonia, 2016), Montenegro 50 schools (List of high schools in Montenegro, -) and at the end, Slovenia with only 31 high schools (Participants (youth and adults) in public and private upper secondary schools, Slovenia, annually, 2014). Of course that these figures significantly affect the size of the country itself, but primarily the size of the population or population which is certainly a relevant factor. Thus, the ratio of the number of inhabitants and the number of secondary schools is smallest in Croatia and Serbia, followed by Macedonia and Bosnia and Herzegovina, and at the bottom are Montenegro and Slovenia. That is, Croatia has the most secondary schools per capita, while in Slovenia there are at least schools per capita.

2.2 Secondary schools - Public vs. Private

According to the property, secondary schools occur in the following forms: public (government) and private. In addition to these types, there are public schools which are privately owned (as in Croatia and Slovenia). Private schools can be owned by commercial entities and/or individuals, also in Croatia and B&H, there are private schools founded by religious communities. Most of these schools are located in B&H.

In order to facilitate comparison of data, in the future work will be considered two categories of secondary schools: public and private. In the category of private schools are counted: private, public to private ownership, as well as private founded by religious communities.

At the end of the school year 2014/2015 the largest number of private secondary schools in relation to the number of public secondary schools in the ex YU teritory by far was in B&H (25.50%) (Haskić, 2015), afterwards in Macedonia (12.07%) (Primary, lower secondary and upper secondary schools at the begining of the school year 2015/2016, Macedonia, 2016), Serbia (109.67%) (Municipalities and regions in the Republic of Serbia, 2016 - Education, 2017) (Srednje škole, Edukacija, -), Croatia (8.77%) (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016) in the end in Slovenia

(6.45%) (Participants (youth and adults) in public and private upper secondary schools by type of education, Slovenia, annually, 2014) and Montenegro (4.00%) (List of high schools in Montenegro, -) (Figure 1).

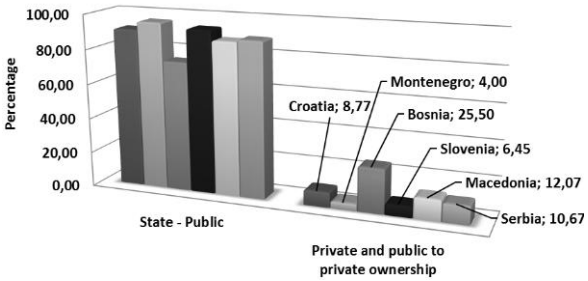

Fig. 1 The ratio of public and private secondary schools

If the order to move in-depth analysis of why it was in Bosnia that a quarter of secondary schools are privately owned, sure that one of the reasons is the fact that for them there is no single legal framework governing the issue of the establishment of private secondary schools. In fact, "founder shall submit a study on the socio-economic justification for establishing high school" (Decree Law on Institutions, Framework Law on Primary and Secondary Education, Law on Primary Education in Sarajevo Canton, Procedure for the establishment of high school, number: 11- 01-38-sl., 2009, Law on Education in Primary and secondary schools of Brcko District of B&H). The largest number of private secondary schools did not submit the said studies or "studies on the socio-economic justification are for establishing agreements on the establishment, the final decision, with only a few sentences, without explanation or, simply, the theory of what a study should include" (Haskić, 2015). Respectively, each canton and county (total there are 11, plus District Brcko) has its own regulations to some extent legally regulate the establishment of private secondary schools. In the calculation of population are taken data from the official websites of the statistical bureaus of the mentioned countries.

As for the number of children attending private high schools in relation to the number of children in public secondary schools in the first place is Croatia (3,31% of children in private schools) (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016), followed by Slovenia (2.48%) (Participants (youth and adults) in public and private upper secondary schools, Slovenia, annually, 2014) i Macedonia (2.80%) (Primary, lower secondary and upper secondary schools at the begining of the school year 2015/2016, Macedonia, 2016) and finally Serbia with less than two percent of children (1.85%) (Ministry of Education, Science and Technological Development, Republic of Serbia, 2016) (Figure 2). There are no official statistics for Montenegro and B&H.

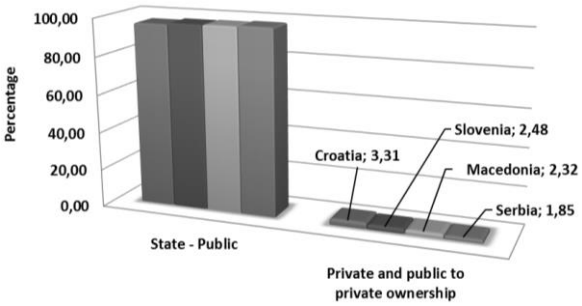

Fig. 2 Pupils-public vs. Private schools

2.3 Secondary schools - Grammar vs. VET & Art school

Looking at the ratio Grammar school and Vocational Education and Training-VET and Art school, it was perceived that Grammar schools constituted 20 to 30% of the total number of secondary schools. The largest share of VET and Art schools is in B&H (79.50%) (Haskić, 2015), Serbia (74.70%) (Ministry of Education, Science and Technological Development, Republic of Serbia, 2017) (Municipalities and regions in the Republic of Serbia, 2016 - Education, 2016), Montenegro (76.00%) (List of high schools in Montenegro, -), and Croatia (69.58%) (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016). Slovenia is specific on this point because in addition to traditional high school there are high school programs within the school centers, and information on the number of high schools is not totally relevant and is not taken in consideration. The number of students at the secondary school programs in Slovenia will be shown, too. For Macedonia, there are no official data on the number of high school or the number of students in high schools and vocational schools.

It is certainly more appropriate to observe the number of students, and their relation to the

Grammar school and VET & Art School. In Serbia, even 77.00% of children attend VET & Art School (Brolpito, Lightfoot, Radišić, & Šćepanović, 2016), Croatia 69.58% (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016) and Slovenia 62.24% (Participants (youth and adults) in public and private upper secondary schools, Slovenia, annually 2014) (Figure 3). There are no official data for B&H and Montenegro, therefore, it is not shown.

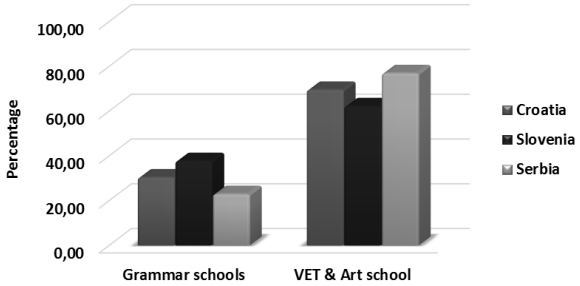

Fig. 3 Pupils-public vs. Private schools

2.4 Private secondary schools

The following is a brief speculation of private secondary schools, and which type of secondary school is more prevalent in the private sector, Grammar school or VET & Art School.

In Croatia, there is a larger number of private Grammar schools (42) than VET & Art schools (18) (Upper Secondary Schools, End of 2014/2015 School Year and Beginning of 2015/2016 School Year, Croatia, 2016). In other words, 21.21% of the total number of Grammar school is private, while the VET & Art school only 3.54% private.

Moreover, there are only two private high schools in Montenegro, one Grammar school, and the other VET & Art School. In percentages of total: Grammar school (12) private is 8.33% and for VET & Art School it is 2.63% of the total 38 private schools of this type (List of high schools in Montenegro, -).

The situation in B&H expressed in figures is as follows. There are only 8 private Grammar school which makes 19.51% compared to the total number of Grammar school, while the other side has 43 private VET & Art School or 27.04% compared to the total number of these schools (Haskić, 2015).

The percentage share of private VET & Art School in Serbia is slightly less than the number of private Grammar schools. In fact, there are 9.29% of private VET & Art School (the total number of schools of this type is 452), while the percentage of private Grammar school is 12.50% (with the total number of Grammar school 128) (Secondary schools, Education, -).

For the other two ex-YU republics (Slovenia and Macedonia) there are no official data on the number of private Grammar and VET and Art school.

So, looking at the percentage share of private schools in relation to their implemented programs, B&H has the highest percentage of private VET & Art School (27.04%), and Croatia the highest percentage of private Grammar school (21.21%).

For Croatia, Slovenia and Serbia there are no official figures on the number of children attending private VET & Art School or Grammar school. The total number of children attending Grammar school in private schools in Croatia is 8.78%, Slovenia 4.09%, while in Serbia only 1.00 %.The situation in the private VET & Art school is significantly different. Slovenia has no private school type VET & Art School, in Croatia, it is just under one percent of children (0.91%), while in Serbia 1.00% compared to the total number of children attending school in the aforementioned type of school.

2.5 Ex-YU – private school summary

Analyzing all the statistical results, it is concluded that in the ex-YU countries the largest number of private secondary schools is situated in Bosnia and Herzegovina (over 25%), and the lowest in Montenegro, only 4%. Based on the number of children attending private high schools at the first place is Croatia (a little over 3%), and last is Serbia (1.85%), while for Bosnia and Herzegovina and Montenegro are no official data.

Looking at the type of school represented in private secondary education there is no single conclusion. In B&H, over 27% of VET & Art School is a private, while in Croatia, the highest percentage of private goes to Grammar school (a little less than 22%). It is interesting that in Slovenia doesn`t exist any private VET & Art School.

As the EU as far as secondary education has a strategy to VET & Art school be more represented than Grammar school or that vocational education intensifies, it is clear that changes must occur in the area ex-YU. This certainly gives a new space for the private education business and directs the movement in this part of the private sector.

3 SECONDARY SCHOOL BUSINESS

The number of private secondary schools is increasing from year to year, respectively the competition is increasing. The question is how to be well positioned and remain successful in this field of education. Certainly, the quality of the work comes in the first place. Of at least the same importance is the decision of the educational profile that should be emphasized, how to organize teaching, how to establish good interpersonal relationships in a group and the like. The main organ of these activities is the founder and/or a school principal.

In the next part of this paper, it will be discussed the management of the private secondary business.

3.1 National Qualifications Framework of Serbia

Starting from the universal fact of world trends in the economy and society, modern high school is required to develop their work and adapt to the demands of their specific environment in terms of realization of a particular education in accordance with the specific needs of the education market. It should take into account the specific educational standards of their country and at the same time fit into the appropriate international educational trends.

In addition to presenting the legal framework relating to the establishment of private high schools, it is necessary to consider the National Qualifications Framework (NQF) and decide which educational profiles should be implemented in the school.

The market demands dictate higher or lower demand for certain jobs. Jobs describe the relevant competencies that prospective employees must possess. The task of NQF is to define the standards of qualification based on these competencies. Each standard qualification is described by the following elements:

- *Basic data* - name and code of the profession, the required level of education, jobs, and tasks on which employees will work
- *Workplace and equipment information* - place of supply of interest (eg. office, etc.) And assets (eg., computer, software tool, etc.)
- *Competencies* - general and more specific competencies and ability
- *Education* - appropriate educational qualifications and profile specific requests (eg. licenses, certificates, attests...).

The qualification standards are defined by people hired in Economy, industry, the National Employment Service, and the education system. Relevant educational programs which are partially implemented in secondary education are created in accordance with defined standards of qualification.

This is how it should look like the process of creating educational programs. Unfortunately, in practice, sometimes we can see big differences, of the fact that NQF has not been established or has not been revised for many years, despite the fact that the labor market is changing rapidly, to complete non-compliance and obsolescence of educational programs.

3.2 The lifetime of education business

The education business is characterized by the fact that the first real results can be seen after one educational cycle. This term is considered to be a period of four-year education, and three years for educational programs which are defined by a three-year education. This further implies the increasing demand for treated educational business, founder (a person who invests capital) must initially take into consideration the negative business to achieve break-even point. Also at the first signs of falling demand for relevant training programs, should be done properly analysis which can show whether to take strategic decisions: start a new cycle (the first grade) or 'shut down' 'the educational program without waiting for the operating result becomes negative (below the break-even point). Partial changes (less or more) also can be done in the educational program, which is expected to decline demand in the market. It should be noted that educational

programs are defined by the competent ministry and that the adoption of amendments is usually a long process, so the question arises whether to indulge or choose another educational program which is wanted. In making such decisions it should be considered professional work area in which is school already recognized in the market.

Based on the stated speculation, it can be concluded that the key interest of founder is to define a good strategic plan that sets clear straight line and direction of movement of the education business in the longest possible period which longer implies the realization of positive business results.

In this connection, the founder must pay particular attention to the point in time when the yield curve begins to stagnate, which for him is to be a sign of holding your negative business or end life of the treated business. At that moment, the founder would have to intensify efforts on identifying educational program whose implementation should improve treated business or replace it with a more likely market educational programs. Therefore, this analysis should be the basis for evaluation of achieved economic results in the education business.

4 THE MANAGEMENT OF PRIVATE SECONDARY SCHOOLS

The management of private secondary schools founders, as owners of the invested capital are the supreme administrative body that brings big, strategic administrative decisions (status, entrepreneurial and other). In contrast, the Director manages the organization and through this function delivers operational control decisions (about the process of work, investing a certain amount, earnings, employment, etc. issues relevant for the functioning of schools).

It is especially important to emphasize that the practice connected to the founders and directors are not harmonized in terms of their competence, but often comes to the overlapping of their activities. Founders are generally interested that through investing capital subordinate their personal interests to the common good. Given that the educational activities are of great importance, founder, except capital investing and obligation to participate in its placement, must have adequate managerial educational competencies.

The practice of managing private secondary schools in the EU predominantly is characterized by following factors (Ristić, 2009): legal regulation of the education system as a whole, the existence of basic standards in the operation of private schools, the unevenness in the field of school management and the vagueness of the competence of the management body.

Founders often form their executive bodies (board) which, because of the greater efficiency of management and leadership, confide their particular jurisdiction. Therefore, the administrative bodies of contemporary organizations make the unity of action of the founder and director, who are together commonly referred to as the administration. Within that, when it comes to school boards, they make the specific executive authority of the founders of the school and their responsibilities are primarily related to the decision on the realization of educational work in school.

4.1 Research results and their analysis

The management of private secondary schools has not been explored yet, and therefore there is a lot of practical problems in this area. In such situations management of private schools is necessarily realized in analogous (apparently identical) manner as in public secondary schools-where within the school board, the school is managed by certain representatives of the founders, employees, and students` parents. However, such a management model of private secondary schools is unacceptable as it severely limits the rights of the founder, as the subject who has invested capital in the school and that by that logic takes care of the development of the school and settle any losses in the business of the school. In such a situation the legislation power management to private secondary schools is not processed, but by default management solutions to public schools are applied to private schools.

In order to establish a realistic picture, respectively, to show what the opinion of people who are directly engaged in private secondary education is, a survey was conducted by the method of interviewing. The survey was

anonymous and was conducted on a sample of 60 subjects consisted of the founders of private secondary schools (30 of them) and directors of private secondary schools (30 of them). The respondents were familiar with the object and purpose of the research. The survey was conducted in the Republic of Serbia and carried out in cooperation with the Union of private secondary schools in Serbia.

That legislation is largely ill-defined in the field of private secondary schools considered 55.00% of respondents (Table 1). By reviewing the Law on Basic Education System of the Republic of Serbia (Law on the Basis of the Education System of the Republic of Serbia, 2015), it was shown that the legislator paid full attention to the educational institutions where the state or the local government is the founder, and for the institution where founder of another legal or natural person left insufficiently regulated.

Table 1. How do you evaluate the current legislative managing to the private high school in Serbia?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a) mostly good	2	6.70
	b) average	6	20.00
	c) predominantly poor	16	53.30
	d) not familiar	6	20.00
	∑	30	100.00
B. School directors	a) mostly good	2	6.60
	b) average	11	36.70
	c) predominantly poor	17	56.70
	d) not familiar	-	-
	∑	30	100.00
C. Total	a) mostly good	4	6.70
	b) average	17	28.30
	c) predominantly poor	37	55.00
	d) not familiar	6	10.00
	∑	60	100.00

The next few questions are about the same stage of the realization of the education business (which was explored in more detail in the previous part of this paper). The goal was to determine how all of these stages carried out in accordance with updated scientific based theoretical assumptions or more are applied subjectively and improvised approach.

When making plans for the development of secondary schools, a half of respondents from the group founders of private schools considered that a modern development planning was a basis for drawing up specific plans for development while the other half believed that improvisation was a better solution. In the case of school directors, the situation is drastic. In fact, 70.00% of directors conducts improvised development planning, but only 13.30% of them carries out modern business planning (Table 2).

Table 2. What is the basis of making plans for the development of our private secondary school?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a) modern planning development	15	50.00
	b) improvised planning development	15	50.00
	c) subjective development planning	-	-
	d) not familiar	-	-
	∑	30	100.00
B. School directors	a) modern planning development	4	13.30
	b) improvised planning development	21	70.00
	c) subjective development planning	-	-
	d) not familiar	5	16.70
	∑	30	100.00
C. Total	a) modern planning development	19	31.60
	b) improvised planning development	36	60.00
	c) subjective development planning	-	-
	d) not familiar	5	8.40
	∑	60	100.00

Changes by the boards in private schools are mainly carried out on the basis of a subjective

approach that considers the director 80.00% or 65.50% of all respondents (directors and founders) (Table 3).

Table 3. Which basis the administrative authorities organize changes in our private high schools on?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a) on the basis of the Development Plan	15	50.00
	b) by improvisation of the Development Plan	-	-
	c) based on the subjective approach	15	50.00
	d) not familiar	-	-
	∑	30	100.00
B. School directors	a) on the basis of the Development Plan	2	6.70
	b) by improvisation of the Development Plan	-	-
	c) based on the subjective approach	24	80.00
	d) not familiar	4	13.30
	∑	30	100.00
C. Total	a) on the basis of the Development Plan	17	28.30
	b) by improvisation of the Development Plan	-	-
	c) based on the subjective approach	39	65.00
	d) not familiar	4	6.70
	∑	60	100.00

In the implementation phase of the education business, the situation is better in terms of applying theoretical approaches recommended. In fact, it applies 50.00% of the respondents, 28.30% preferred personally conceived approach, while improvisation conducted 18.30% of respondents (Table 4).

Table 4. Which principle do managers of our private schools use to manage the realization of treated educational activity?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a) the theoretical approach recommended	15	50.00
	b) the personally conceived approach recommended	8	26.70
	c) improvised approach	7	23.30
	d) not familiar	-	-
	∑	30	100.00
B. School directors	a) the theoretical approach recommended	15	50.00
	b) the personally conceived approach recommended	9	30.00
	c) improvised approach	4	13.30
	d) not familiar	2	6.70
	∑	30	100.00
C. Total	a) the theoretical approach recommended	30	50.00
	b) the personally conceived approach recommended	17	28.30
	c) improvised approach	11	18.30
	d) not familiar	2	3.40
	∑	60	100.00

During the valuation of the results of operations personally conceived approach applies 50.00% of the respondents, 38.30% preferred theoretical recommended approach, while improvisation implemented 11.70% of respondents (Table 5).

Based on the results can be concluded that a total of four stages in the realization of the education business, the administrative authorities of schools (school founders and directors) only at the stage of implementation apply the theoretical recommended approach, while in the other three phases rely on personal feeling and subjective approach.

Table 5. Which approach do administrative authorities of our private secondary schools use in the evaluation of the results of business?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a)the theoretical approach recommended	8	26.60
	b)the personally conceived approach recommended	15	50.00
	c)improvised approach	7	23.40
	d)not familiar	-	-
	∑	30	100.00
B. School directors	a)the theoretical approach recommended	15	50.00
	b)the personally conceived approach recommended	15	50.00
	c)improvised approach	-	-
	d)not familiar	-	-
	∑	30	100.00
C. Total	a)the theoretical approach recommended	23	38.30
	b)the personally conceived approach recommended	30	50.00
	c)improvised approach	7	11.70
	d)not familiar	-	-
	∑	60	100.00

In terms of management competence of administrative organs, 70.00% of the surveyed directors believe that he is mostly intermediate level, while the founders of the school are equally divided between thinking that the administrative authorities of schools have a middle and high level of management competence (Table 6).

It can be said for the current survey s that it is representative, as it involved 30 control boards of private schools or 58.8% of the total number of private secondary schools in the Republic of Serbia, and therefore the results are important for the conclusion.

Table 6. What average level management competencies have administrative authorities of our private secondary schools?

Respondents	Offered answers	Number of answers	% answers
A. Founders of schools	a) mostly high level	15	50.00
	b) mostly average level	15	50.00
	c) mostly low level	-	-
	e) not familiar	-	-
	∑	30	100.00
B. School directors	a) mostly high level	6	20.00
	b) mostly average level	21	70.00
	c) mostly low level	-	-
	e) not familiar	3	10.00
	∑	30	100.00
C. Total	a) mostly high level	21	35.00
	b) mostly average level	36	60.00
	c) mostly low level	-	-
	e) not familiar	3	5.00
	∑	60	100.00

CONCLUSION

Starting from the universal fact exposed to global trends in the economy and society, modern high schools are required to develop their work and adapt to the demands of their specific environment in terms of realization of a particular education in accordance with the specific needs of the education market. Private high schools should take into account the specific educational standards of their country and at the same time fit into the appropriate international educational trends. The main implications of modern developments in the legal regulation of business high school come down to its principled equality with other business entities, except that it takes into account the specificity of the core business schools, as well as activities of special public interest. However, when it comes to the

management of secondary education, it is in principle identical to the management of any other undertaking. It is, in fact, on what all of them are managed by the competent management authorities which include founder and CEO.

The status of private education in the EU and countries in transition, according to their experience, cannot be regarded as a clear and definite, that is, can not be accepted as a single model or a model that could be applied universally. During the search form and functioning of private education EU countries went to specific mutually different paths. However the common understanding of private education as an alternative and complementary state sector in most countries.

Therefore, it is necessary to legally regulate the internal management of private high schools just like the regulatory management of all market-orientated organizations. Thereat must be respected the specificity of private secondary schools, as well as educational institutions, have the character of an organization of special public interest. Therefore, all its management factors (administrative authorities, administrative authorities and the competence of administrative authorities) must be implicitly tied to the essence and importance of educational activities. In addition, this implies the need for standardization and implementation of permanent education for holders of administrative functions (in particular: the director, president of the school board and president of Assembly of the founder), since it greatly affects the time to raise their administrative competence of - which consequently contributes to the performance of work and the development of private and public high schools.

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LOGISTICS MANAGEMENT IN THE ARMED FORCES OF THE SLOVAK REPUBLIC

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JEL Category: **H56**

Abstract

Logistics in the Armed Forces of the Slovak Republic (AF SR) now gains importance and is irreplaceable in the comprehensive security of the complex combat activities of troops. Logistics management is implemented in activities such as planning, organization, implementation, control, and assistance in all logistics functional areas. Modern logistics management in the Slovak armed forces must be flexibly adapted to the individual levels of command and control of troops. Managing the flow of material flow in the Slovak Republic according to the proven principle: "just in time" requires adequate structures at individual levels of management, closely linked to the information, communication and recording system. The Military Doctrine of the Slovak Republic establishes three levels of war - strategic, operational and tactical, which are applied in war and non-military operations. However, in today's international environment, it is not possible to determine with certainty at what level the organizational structure operates. All levels are interconnected. The Ministry of Defence and the General Staff of the Slovak Armed Forces focus on the strategic logistics management. The logistics office resolves operational and some strategic logistics issues. Logistics departments of ground and air forces deal with operational logistics management, influencing the tasks imposed on the commander in the operational plan for the use of Slovak armed forces, including the creation of procedures, doctrines and training documents. At a tactical level, the logistics of departments and units are organically integrated into the structures of their headquarters with their subordinate logistics units. The paper deals with the structure of logistics management in the AF SR and the role of its individual elements at the strategic, operational and tactical level. Finally, it shows possible ways and goals of logistics management for the future.

Keywords: *Logistics Management, Armed Forces of the Slovak Republic, Strategic, Operational and Tactical Logistics.*

1 INTRODUCTION

Due to the limited amount of funds available and the need to respond to the changed source framework, it is assumed that the construction of the Slovak Armed Forces logistics will continue

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according to the set priorities of importance in the following content.

The construction of units and equipment for logistic support of high-preparedness units is one of the most important tasks in the construction of logistics support of the Slovak Republic in the fulfillment of the commitments declared to NATO, in particular, the construction of units allocated to high-preparedness. In order to ensure the continuous logistic support of Slovak Armed Forces units operating outside the Slovak Republic, their logistic support units must be built first.

Construction and filling of inventories for units deployed in high-level forces are a further challenge for units of high alert forces, which must be preferentially equipped with specified supplies, to cover the needs for 30 days.

Equipping high-security troops with NATO-armed forces, equipment and materials compatible with NATO forces where the aim is primarily to provide strategic means of transport, material handling, compatibility in the basic areas, in particular, the single fuel on the battlefield, the transport of fuel and the possibility of confusion of ammunition on the battlefield. Once these basic objectives are met, further steps will be taken leading to greater compatibility.

Organizational and material security of the tasks of the Slovak Armed Forces are resulting from the obligation to provide security by the host country presupposes in this area the initiation of the preparation of the territory of the Slovak Republic and the assigned forces to fulfil the tasks arising from the Slovak Republic's commitment to the host country towards NATO.

The gradual replenishment of inventory for lower-level units will be timed according to the real availability of funds and other necessary resources.

Removing surplus and unnecessary material will allow a more efficient use of limited available resources.

The gradual modernization of logistic elements for logistic support on the territory of the Slovak Republic clearly declares the needs for the logistic support infrastructure in the Slovak Republic, which will allow efficient replenishment from sources outside the defense sector. The fulfillment of these tasks will be technologically tied to the acquisition of a new or modernization of the existing technique. This will be based on the perspective of the crew.

The gradual replacement and modernization of equipment, technology, and materials will allow increasing the required capabilities of the Slovak Republic as a whole in the long run.

The logistics system must be prompt, capable of anticipating logistical requirements in a timely manner, maintain inventory flow and concentrate limited logistics resources where necessary, depending on the operational tempo and combat requirements. Organization of logistics must be based on real possibilities, to be modular and capable of rapid reaction. Distributed logistics is a new way of support whereby the amount is replaced by the speed and the flow of material through its stream. The key is the material in motion, with the stock becoming a distribution network. In such a supply network, the amount of stored stock is reduced and replaced by rapid transmission of material in the distribution network.

In the sphere of logistics, the development of the Slovak Armed Forces will focus on functional areas with an emphasis on the acquisition of the required competencies in the following areas:

- the strategic, operational and tactical mobility of logistics: to rapidly adapt to the requirements of strategic aviation, maritime and rail strategic transport, and to have the necessary transport and handling equipment, military and strategic transportation material, and to master standard operational procedures in the field of strategic transport and munitions.
- the resilience of logistics: Introduce material to the Slovak Armed Forces in order to ensure the fulfillment of the logistic support tasks in difficult climatic conditions (catering, material reserves, etc.) and to have trained and appropriately armed personnel.
- multinational integrated logistics: to contribute value to the planned integrated logistics structures of the Allies.
- countries in the role of specialist: to improve the supply and repair system and to modernize the technique. Services to customize or purchase.
- ensuring the sustainability of national forces and contributing to the sustainability of the coalition

forces: deploying sufficiently large national support elements (NSEs) with sufficient reserve capacities and supplies.
- providing logistical support in the contract placement area: on the basis of a logistic survey, provide ready staff with efficient logistical support and services in the contract placement area.
- building and maintaining stationery and field infrastructure: Building and modernizing accommodation, catering and other facilities, thereby contributing to improving the lives of professional troops
- use of intelligence: Use them effectively in planning and implementing logistical support

Learning and use in the logistics support planning method based on effects (EBO – Effect Based Operations, EBA – Effect Base Approach): A new approach to planning an operation. It is conditional on a new type of operations against structured systems (CAS Comprehensive Adaptive System, against terrorist organizations), which differ significantly from classical military structures.

2 MANAGEMENT OF LOGISTICS IN INDIVIDUAL STATISTICS ARMED FORCES OF THE SR

The Military Doctrine establishes three levels of war - strategic, operational, and tactical, applied in both war and non-military operations. However, in today's international environment, it is not possible to determine with certainty at what level the organizational structure operates. All levels are interconnected. The battalion commander may, for example, be the commander of a national contingent in the field of war operations that deals with tactical activities. However, it can also perform tasks (such as interaction with other types of forces or host states) that are usually associated with the operating level. To perform these functions, organizational structures must be strengthened in many cases. Military activities at one level can simultaneously meet higher-level goals. Logistics activity takes place at all levels. There is no definitive line of differentiation at each level. The difference lies in the sense and not in the type of activity. For example, the development of logistics equipment may be an activity at any level (Trebula, 2016). The development of a brigade space of support by a logistic support battalion to maintain troops in combat represents the function of logistic support at the tactical level. The development of a base to support a joint operational group in the implementation of a complex operation is a function at the operational level, but the establishment of a base in the area of war operations outside the Slovak Republic is an activity at the strategic level. The establishment of a permanent logistics base in the territory of the state is a strategic task at the national level to support a military strategy not only of one operation or mission within the combat area. The Ministry of Defence of the Slovak Republic and the General Staff of the Armed Forces of the Slovak Republic concentrate on the problems of strategic logistics. The Headquarters of Training and Support forces resolve operational issues, and some issues of strategic logistics and ground and air force logistics departments address operational logistics issues affecting the performance of the tasks outlined in the Plan of Use of the Armed Forces of the SR, including the creation of procedures, doctrine, and training. In responsibility, subordinate commanders and unit-level logistics officers deal with tactical tasks (Skolnik & Belan, 2015). However, the resolution is not always clear. The logistical support system for the armed forces is one-sided and one level overlaps with the other. This is particularly true in non-military operations, in which support personnel does not provide support to armed forces in combat in a traditional sense. The Ministry of Defence and the General Staff of the Slovak Armed Forces focus on the issue of strategic logistics.

After reorganization logistics, the many competencies will be transferred to the newly established Logistics Office directly subordinated to the GS Slovak Armed Forces and to the components of ground and air force logistics.

The Ground and Air Forces Logistics Departments address the issues of operational logistics affecting the role of commanders in the operational plan for the use of the Slovak armed forces, including the creation of procedures, doctrine, and training. In responsibility, subordinate commanders and unit-level logistics officers deal with tactical tasks. All levels are interconnected. The current basic structure of Slovak Armed Forces logistics is shown in Fig. 1.

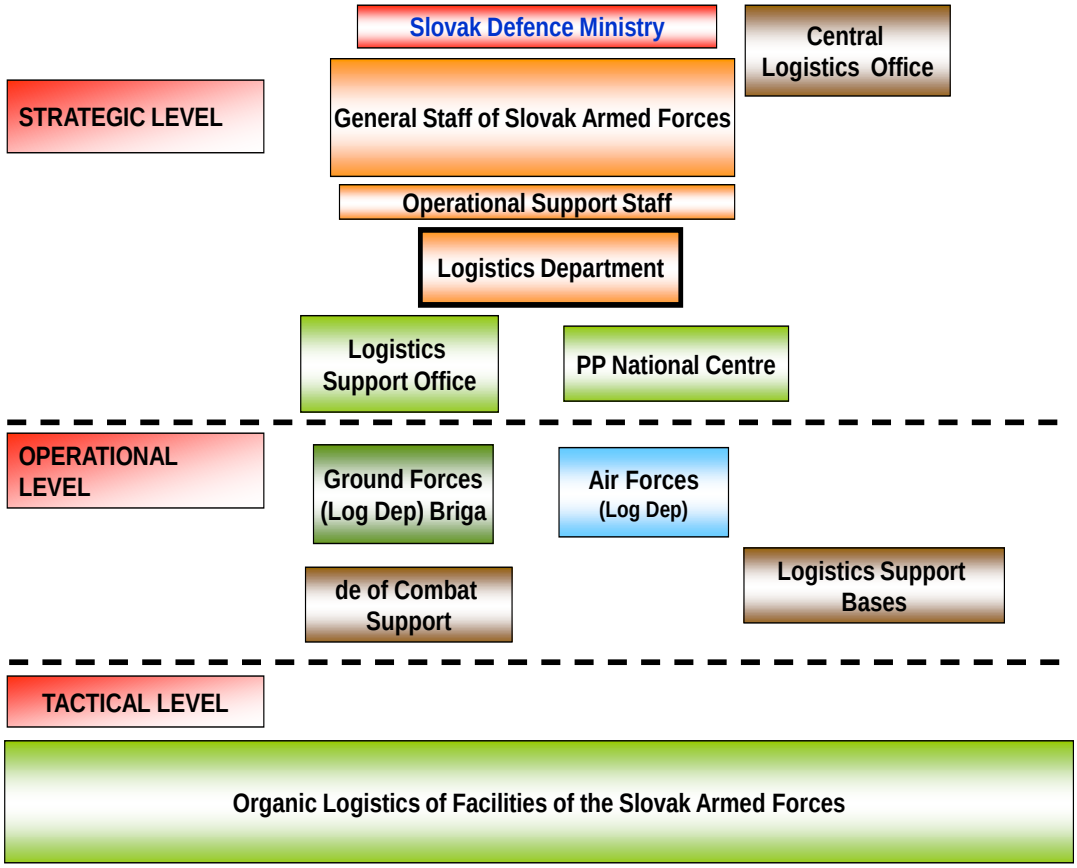

Fig. 1 Organizational structure of logistics of the Slovak armed forces (Source: Logistics Department - Operational Support Staff of the SAF)

3 STRATEGIC LEVEL OF LOGISTICS MANAGEMENT

At the national strategic level, logistical support to a large extent is within the competence of the industrial and civil sectors. Armed forces include political and military-strategic leadership as well as civilian and military contractors. At this level, logistics combines the state's economic base (human and material resources, industry) with military operations in the area of war, enabling the state, and especially its armed forces, to achieve its goals.

The ability of the defense industry to produce and supply military material has a decisive impact on the conduct of armed conflict (Marchevka, 2015). Logistics authorities at the strategic level are the linkages between the industrial base and logistics at the operational level.

At the strategic level, the Ministry of Defence of the Slovak Republic, the General Staff of the Armed Forces of the Slovak Republic, other central government bodies (in particular the Ministry of Economy, the Ministry of Transport, Post and Telecommunications, the Ministry of Construction and Regional Development, the Ministry of Agriculture, the Ministry of Health, material reserves) and civilian suppliers.

Logistics authorities at the strategic level are focused on:

- establishing the necessary resources,
- acquisition of resources,
- integration of information systems for the management of resources of all elements of the armed forces and state administration bodies,
- maintaining national healthcare systems and facilities,
- identification of mobilization requirements and mobilization stocks;
- maintaining the productive capabilities of military material in peace and industrial growth,

– base in time of war,
– ensuring strategic moves,
– concentrating forces and logistics resources before starting the operation,
– the re-establishment of the military capabilities of the state,
– demobilization of the armed forces.

The strategic level of logistics consists of the following bodies, agencies and facilities of the Slovak Ministry of Defence:

– Management Section of Slovak Defence Ministry,
– Central Logistics Office,
– Modernization and Infrastructure Section of Slovak Defence Ministry,
– Logistics of the Operations Support Staff of the General Staff of the Slovak Republic (J-4),
– Budget Chapter Administration Office,
– Investments and Acquisitions Office,

The strategic level of logistics is shown in figures 2 and 3.

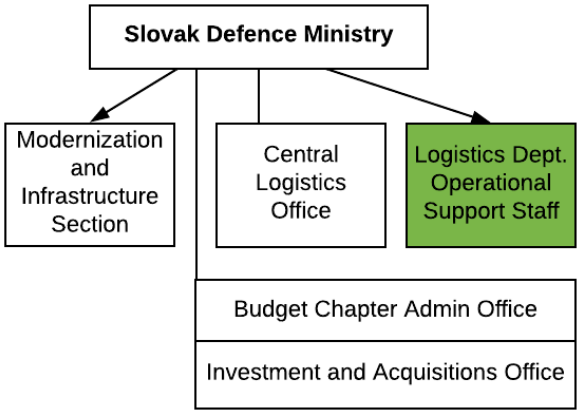

Fig. 2 Strategic level of Slovak Armed Forces logistics (model)

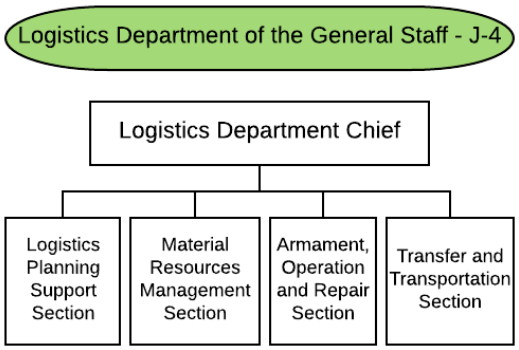

Fig. 3 Department of logistics of General Staff of the Slovak Armed Forces -J-4 (model)

4 OPERATIONAL LEVEL OF LOGISTICS MANAGEMENT

At the operational level, the tasks of consumer logistics are planned, coordinated and fulfilled. The following bodies, units and logistics units of the Slovak Armed Forces:

a) Logistics Department of the Ground Force Command of the Slovak Armed Forces,

b) Logistics Department of the Air Force Command of the Slovak Armed Forces,

c) The Office of Logistics.

The operational level of logistics in the Ground Force Command of the Slovak Armed Forces is shown in Figure 4.

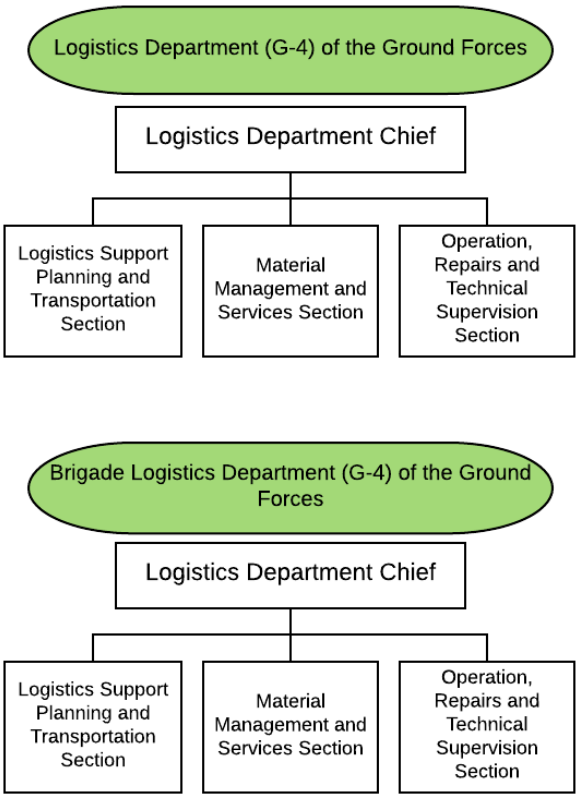

Fig. 4 Operational Level of Logistics in Ground Force Command of Slovak Armed Forces, (model).

The operational level of logistics in the Air Force Command of Slovak Armed Forces is shown in Figure 5.

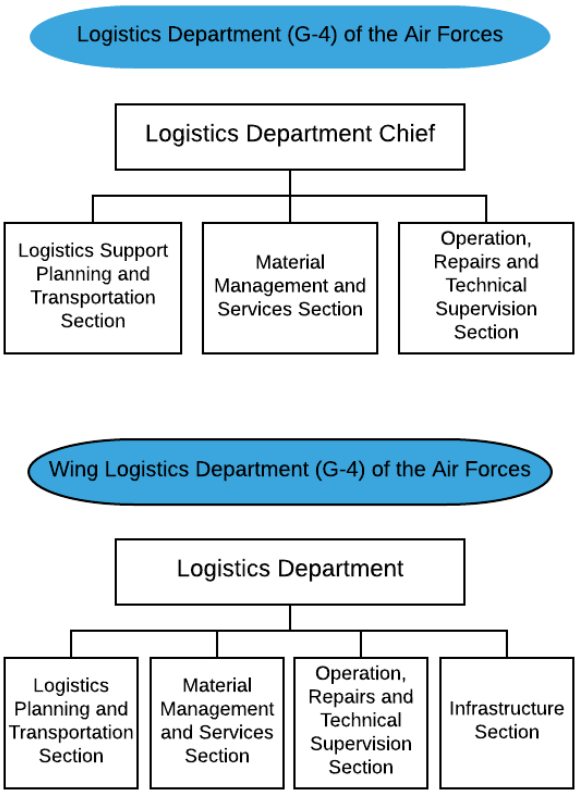

Fig. 5 Operational level of logistics in the Air Force Command of the Slovak Armed Forces (model)

Common principles of logistical support at the operational level will be detailed in the forthcoming Operational Logistics Doctrine of the Armed Forces of the Slovak Republic.

5 TACTICAL LEVEL OF LOGISTICS MANAGEMENT

The tactical level is the lowest, efficient level of logistics. At the tactical level, the tasks of consumer logistics are planned, coordinated and fulfilled. To support the fulfillment of these tasks, the logistics authorities at the tactical level of the Slovak Armed Forces, shown in figure 6, are designated.

Organic elements of ground forces are units and logistics units. They perform tasks in the field of transport, technical security, tire services and all-round material security (Brezula, 2017). The organizational structure of the Ground Forces Brigades incorporates logistics support battles. Separate battalions have battle organizations in organizational structures.

Similarly, the organic component of the air force is the logistics unit. It fulfills tasks in the field of engineering - airport, airport - engineer, airport - technical, technical security, transport, versatile material security and support services.

The tactical level of logistics of the Ground Force Command of Slovak Armed Forces is shown in Figure 6.

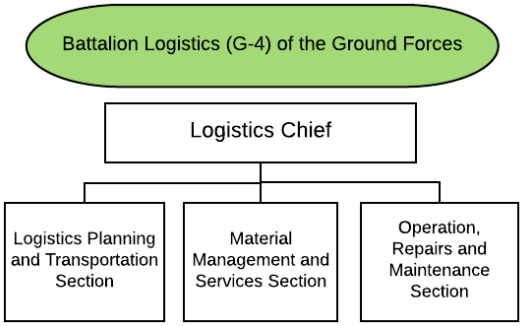

Fig. 6 Tactical Level of Logistics of Ground Force Command of the Slovak Armed Forces (Model)

The organizational structures of logistics are currently undergoing further reorganization and transformation (Sahin, 2017). The final conclusions on the structures are in the course of the discussions and remarks of the MOST top logistics authorities. There are no definitive decisions or resource aspects of building logistics structures. For these reasons, organizational logistics structures, logistics management, hierarchy, competencies, and dislocations will be addressed in the next logistics transformation period.

CONCLUSION

The long-term trend towards the future is the development of integrated logistics with the increasing demands for support of the management of NATO's expedition operations. To ensure a full range of operations, logistics should be versatile, agile, accessible, mobile, quickly deployable, and tailored to the task with minimal presence of forces and resources. Logistics for future operations must be highly prepared to withstand operations within 30 days (after the development of the supply system, of course, longer), capable of ensuring the arrival and deployment of units, and capable of acting independently or acting within a multinational joint task force (CJTF - Combined Joint Task Force).

The main priorities of the construction of logistics are the realization of all measures aimed at the timely and comprehensive security of troops, which include in particular: providing information

processes in logistics, maintenance, operation and repair, supply, transport security, securing and provision of services.

Logistics in the Slovak Armed Forces has its organs at different levels of command. The Military Doctrine of the Slovak Armed Forces establishes three levels - strategic, operational and tactical, which apply to military and non-military operations (Brezula, 2017). The Ministry of Defence and the General Staff of the Slovak Armed Forces focus on the issue of strategic logistics. The Headquarters of Training and Support addresses operational and some strategic logistics issues. After its abolition, its competencies will be transferred to the newly established Logistics Office directly subordinated to the GES of Slovak Armed Forces and to the components of ground and air force logistics. Territorial and Air Force logistics departments deal with operational logistics issues affecting the role of commanders in the operational plan for the use of the Slovak Armed Forces, including the creation of procedures, doctrines and training documents.

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EU ENLARGEMENT TO AUSTRIA, FINLAND, AND SWEDEN

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JEL Category: **N14, N24, N34, N44, O19**

Abstract

The end of the Cold War meant several dramatic changes in the European integration process. The first obvious consequence was the German reunification and the acceleration of the integration in order to avoid a dominant Germany inside Europe. The enlargement to neutral countries during the confrontation between West and East was just possible because of the end of the conflict. It meant the incorporation to the European Union of three countries strongly united to Western Europe with strong and functional market economies and healthy democratic systems with a long tradition. These three countries contributed to change the EU from a community focused on one specific regional area to a wider union aspiring to entitle the whole continent. The following enlargement to Central and East Europe can be understood as the next logical step after the incorporation of Austria, Finland, and Sweden.

Keywords: *EU enlargement, EU integration, Austria and the EU, Finland and the EU, Sweden and the EU, European Economic Space.*

1 INTRODUCTION

The end of the Cold War was a very important historical fact for the European Communities because it changed the internal situation of Europe and the international status quo established after the IIWW.

During the American-Soviet confrontation, the European Communities were seen by the USSR as a weapon of capitalism (USA) to fight against the workers of Europe, and hence an enemy of the Soviet Union, the self-proclaimed protector of the workers of the world. As the European integration started working primarily in the field of economy and the development of a common market in the coal and steel, and afterward in other products, it was clearly a capitalist organization, opposite to communism. The doctrine Birkelbach and the emphasis on democracy were seen as another clash between the Communities and the Soviet Union, democracy against the dictatorship of the people and its representative the communist party. On the other hand, the leading role of USA in the creation of the first community, the ECSC, and the later support of the Americans to further integration in order to have a strong Europe able to face the Soviet threat, made the relations between both areas even more difficult. Some of the most important leaders of West Europe, as de Gaulle or Willy Brandt, had relations with the Soviet Block, as they tried to build a third way in the dual confrontation of the Cold War, but it did not have any influence on the relation between the European Communities and the Soviet Union. So, these two blocks had bad generic relations and

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belonged to two different worlds, two different sides in the context of the Cold War (Beloff, 1970)

Nevertheless, the European Communities were not the only attempt in the field of European integration, because the Soviets launched another community based on principles link with the communist doctrine, the COMECON. It was a Soviet-dominated community created in 1949 as an answer to the plan Marshal and the beginning of the European cooperation in the West in the economic field. (Chochia, 2012) This organization was led by the Soviet Union but officially the decision making was based on consensus; in practice was based on the will of Stalin, leader of the Soviet Union. In any case, the organization included the Eastern bloc, plus other partners in the world, and was based on the cooperation of different national policies of the member states. The decisions were taken in collegially and afterward, the states had to implement them by their own means and interpretations in their countries, without any power for the common institutions.

The situation of some countries of Europe in relation with both blocks was complicated because they belonged to the western world from the economic and cultural point of view, but their political status after the Second World War was of neutrality. Hence, these states could not join any association link with the blocs involved in the confrontation. The European Communities as a part of the capitalistic world supported by the USA, or the COMECON under the influence of Soviet Union were vetoed as international options (Majone, 2009). This was the case of Sweden, Finland, Austria, Switzerland, and Lichtenstein. Another significant European association at that time was the European Free Trade Association, promoted by the UK as an alternative to the integration model ruling the European Communities. As the EFTA was just a common area for trade based on industrial production, without any political cooperation or integration in any field, it was seen as a neutral association from the prism of the Cold War, and hence these neutral countries joined it without breaking the equilibrium established after the IIWW (Brinkley, 1991)

The neutrality of these countries was deriving from their historical development, at the end of the Second World War, Finland signed an agreement with the Soviet Union where it was included the neutral role of the country in the relations between East and West. Austria was occupied by Soviet and American troops, and they withdrew with the condition of neutrality of the country. Sweden was a neutral country even before the war and the beginning of the conflict between communism and capitalism and wanted to keep this status in the context of the Cold War (Troitino, 2008).

2 AUSTRIA

The country was occupied by USA and Soviet forces at the end of the war, and hence was a conflictive area in the context of the confrontation between the USA and the Soviet Union. Both powers decided to give full independence to the country with the condition of having a neutral status. The agreement was signed because of the geographical position between East and West because it was a part of the German nation, already divided in two blocs, or areas of influence, plus the interest of the USA of stabilization of the area before moving the war effort to the Pacific (Birkenmeier, 2003). The situation was formally adopted in 1955 with the Moscow memorandum were the neutral condition of Austria was expressed. As a neutral country, Austria could not join the European Communities but was a member of the EFTA. As the economic relations between Austria and West Germany were very important for the country, the EC and Austria signed a special agreement based only on trade in 1972. It paved the entry of Austria in the Communities as most of the communitarian legislation on trade was already incorporated into the national legislation.

After the end of the Cold War, the country showed interest joining the European Communities, as the confrontation was finished and its status of neutrality was no longer important in the case of the European integration. The main problems of Austria joining the European Communities were based on environment and the traffic of trucks, because the Austrian legislation was more restrictive than the communitarian in this field, and the conditions for the circulation of heavy trucks were very deterring in order to protect the environment. Nevertheless, it was an important obstacle to the Common Market, because most of

the transportation at that time was done by trucks, and it could have a strong influence on the free movement of goods. Another important problem was the transition periods for Austrian farmers and Austrian agricultural markets to adapt to the level of prices of the Common Agricultural Policy. Here the problem was basically that Austria has its own policy protecting its farmers, and joining the Communities meant joining the CAP as well. As the prices in that Austrian market were higher than those in the European market, the Austrian farmers were going to lose money with the integration of the country in the Community. As the candidates have to accept the whole European Communities and its policies when they join, here the main problem was the transitional period of joining fully all the European Communities and policies; trying the Austrians to make it longer to soften the economic damage to the Austrian farmers.

Another problem was the prohibition of Austrian authorities to foreigners for buying real estate properties in Austrian soil. There were many restrictions in that sense, but it was clearly against the principle of no discrimination because of the nationality of the European integration (Kerikmäe, 2014) and had to be abolished.

The referendums in the candidate countries started with Austria, where 66.6% of the population supported the accession of the country to the European Communities. Besides the problems already mentioned before, the accession of Austria was very smooth and no big problems or conflicts occurred. The main European consequence of Austria inside of the European Communities and the European Union is its strong link with Germany and their common position in most of the issues. It means that Germany, already the strongest country inside the Union, almost always has the unconditional support of Austria in its positions (Martín de la Guardia, 2005). As an example, Austria is one of the few member states without the sea, but as it is a full member of the European Union, it has a full presence in all the policies of the Union, as the Common Fishing Policy. As this policy also includes fishing in rivers and other variants, the country has some interest in this field, but the main thing of the policy is a link with fishing in the seas. (Braghiroli, 2015) Austria almost always supports the German position in that sense, even when Austria has no interest at all in this matter and could just support other positions. So, the relation between Austria and Germany, obviously very close because of cultural reasons, is also very important inside the Community because it provides Germany, already a powerful state inside the Union, an extra power.

3 FINLAND

The confrontation between Finland and the Soviet Union was even before the IIWW, with the Finn-Soviet war. The Scandinavian country could resist the attacks from the Soviets, but the armistice meant important territorial loses for Finland. During the IIWW the Finish became allies of Germany and collaborated with them actively in the war against the Soviet Union. Nevertheless, during the last period of the conflict when the German position was weakened, the Soviet forces were hasting to reach central Europe before the Allies in order to secure their influence over the area. Hence the Soviet Union and Finland signed a peace agreement because otherwise, the Soviet Union had to diverse too many troops to this part of Europe (Pando, 2017). As Germany was collapsing on two fronts and it was obvious that the war was lost, the Germans and its allies surrendered much more easily to the forces led by USA, and resisted heavily to the advance of the Soviet troops, making more difficult the Soviet advance and more necessarily for the Soviet army to concentrate its troops (Vernygora, 2016). There were some ideas in Germany at this time about the relations of Europe and the Soviet Union link with a clash of civilizations. Rommel, a well-known German officer, thought of resisting the Soviets and the collaboration with the Western troops in the inevitable conflict between West and East that was going to follow the IIWW. (Gates, 1981)

Nevertheless, in 1948 a treaty was signed between the Soviet Union and Finland, which included bilateral friendship, cooperation and mutual assistance stressing the neutral status of Finland (Northedge, 1986). It also meant special economic relations between this country and the Soviet Union and afterward economic relations between Finland and Russia. Meanwhile, Finland had a cold relationship with the European Communities and became an associate member

of the EFTA in 1961. After the end of the Cold War, Finland started the negotiations with the European Communities and became a full member after a referendum where 53% of the population supported the enlargement. (Dutton, 1981) As in the case of Sweden, the main division in the country related to European issues was, and in some sense still is, between the rural areas and the cities.

4 SWEDEN

The country was neutral during the IIWW, even though it had strong economic links with Germany and other contenders. After the war, the country opted for keeping this status to protect themselves in case of a confrontation between the Soviet Union and the USA, even when the model of the country was much closer to the West than to the Communist thesis. The country was heavily industrialized and depended on international trade and free access to foreign markets. The EFTA, as a non-political association based on trade, was a good option for the country, and hence it was in Stockholm where the Treaty founding the EFTA was signed. During the 60s the economy of Sweden was performing well when in the European Communities the situation was not so virtuous, and hence there were no reasons for joining the organization and at the same time risk the neutral status of the country. Nevertheless, the situation changed in the 70s when the country had an economic crisis and the opinion towards Europe changed in the country. Also, the personality and policies of the then Prime Minister of Sweden, Olof Palme, a supporter of the integration of the country, helped to change the perception of the Communities inside Sweden. (Dinan, 2004) During the 90s, after the creation of the Single Market with the SEA, the European countries inside the Communities were performing well in the economic field, and at the same time, the Swedish economy was suffering. This situation and the end of the Cold War meant the application of the country to the European Communities membership (Mearsheimer, 1990).

There was a referendum in the country and 52.3% of the Swedish voters supported the accession of the country. The campaign preceding the referendum showed a clear division between the rural and areas and the cities, between the South and the North of the country. It was a similar situation as in Norway. Nevertheless, the country was not fully convinced of the benefits of the integration and has been a complicated partner in the European building process afterward, having a cautious position always when deeper integration is discussed. The first elections for the European Parliament in Sweden meant that almost half of the Swedish seats went to anti-European parties. The reasons said at that time were basically economic, because the economic situation of the country did not improve after its accession to the European Communities.

5 COMMON PROBLEMS WITH THE ENLARGEMENT

The main problems of Austria, Sweden, and Finland joining the communities were:

- Neutrality: All of them had this status before they joined the European organization, and kept it after the accession. The problem comes currently from the attempts of developing an effective Common Defense policy inside the Union, as these countries are still neutral and are not willing to get involved in an active foreign and defense policies. Also, the so much discussed European army cannot be developed inside the European framework because some of these countries are against it because it would break their neutral status (Kant, 1795) unless it is under the reinforced cooperation system.

- Environment: All these countries had higher standards of environmental protection than the systems developed inside the Union. When they joined the EU there were different options, as downgrading the environmental protection in these countries forcing them to adopt the European standards, or upgrading the European protection to one of these countries. As the first option was not popular among the citizens of these countries and could harm the environment, and the second option was very expensive for most of the member states of the Union, a third was adopted. The EU allowed members to have a more progressive legislation than the EU in the field of environment. Hence, the European legislation in the field became the minimum standard to follow by the member states. The environment became an exception for the free

movement of goods and an obstacle to the Single Market accepted by the Union.

- Health Care: Here the situation is similar than the environmental issues. The health protection in these countries was higher than in the Communities and the European legislation became the minimum standard, and healthcare an exception to the free movement in the Single Market. Here is important to point out the importance of the healthcare from an economic point of view as an aspect with great importance in the competitiveness of the companies. (Polese, 2015)

- Public monopolies: These monopolies are against the EU rules because they are an obstacle for the free movement of goods, and the candidates had to finish with this system in order to adapt their countries to the European legislation. But some exceptions were accepted, as in Sweden and Finland with the alcohol monopoly. As these countries have some problems with drinking and its consequences over their population, there are some controls of the state over the alcoholic drinks, but it is not an obstacle to the free movement of goods because these monopolies sell what people want, without discriminating any brand or alcoholic drink. Because of this system based on the preferences of the consumers and reasons linked with health care, these countries were allowed to keep their state monopolies (Radaelli, 2017).

- Trade with third countries: The trade agreements signed by these countries with other partners in the world had to be readapted to the European situation, as no bilateral agreements are allowed in the common area because it might have a negative effect on trade for the whole area even if they benefit just one part of it. So the EU had to renegotiate these agreements making similar agreements between the EU and the third countries or finishing them. In this case, according to the WTO, the EU had to pay economical reparation to the third countries (Stirk, 1996).

- Agriculture: It was a big problem in the negotiations, because the three candidates had a higher level of prices in their respective agricultural markets than the European level, with some exceptions in the case of Sweden. Anyway, the enlargement could mean economic problems for the farmers of the candidates. The solution was paying economical compensations to the farmers (Troitino, 2013).

- Economic aid to less developed areas: this was a problem especially in the less populated areas of Sweden and Finland in the north of both states. As the states were, compared with the average of the member states, rich, they had a problem receiving the Structural funds of the Union for developing these areas, and hence the European Communities included this target, less populated areas, in the Development Funds of the Union.

- Fishing. This problem did not include Austria, because of obvious geographical reasons, but it included Sweden and Finland. The problem again, as we have seen often with the fishing, was opening the national waters to the European fleet. The problem was solved with a calendar specifying a gradual access to their waters by the European fleet.

6 THE CASE OF NORWAY

Norway had already applied to the European Communities at the time of the British enlargement in 1973 (Chochia, 2015), but an internal referendum rejected the application. At the end of the Cold War, and following the example of Sweden and Finland, the Labor of Norway, by a small majority of delegates, voted for applying again for the membership of the European Communities, and in the following two years there was a hard debate about the benefits and loses of the membership of the country, anyway, again, in 1994, after the negotiations between the Europeans and Norway were already finished, in a new referendum 52.2% of the population voted against it. The reasons for the rejection were similar to the previous referendum, basically South against North, urban areas against rural areas, center versus periphery, or secularism against religious.

As the country had strong economic links with the members of the EFTA, a new association was created to keep these relations between the still members of the EFTA and the European Union, where important partners of Norway were now members, as Sweden or Finland. The new entity was called the European Economic Area, and its members were Norway, Iceland, and Lichtenstein

plus the European Union (Troitino, 2014). The EEA meant the creation of a single market between its members, the suppression of all barriers to trade with the exception of agricultural production, custom union, common trade policy, common foreign and security policy, justice and home affairs (even these countries are part of the Schengen area) and monetary union (Polese, 2016). The situation is a bit chaotic in the sense that Norway is a part of the single market, and hence contributes to the budget of the European Union, and its representatives are in the European institutions when issues link with the single market are discussed. But as it is not a member of the Union, when the decision making starts, the delegates of Norway withdrawn from the negotiations as they cannot vote. So the country is forced to accept the decisions of the Europeans without influencing the voting process with its positions. It is like being part of the Union because it is part of the main policies of it, but at the same time being outside as it cannot vote because it is not a member of the organization. This system can last as long as Norway has economic resources, mainly oil, to keep the situation, because it is expensive for the country to accept the European legislation without influencing it. About the contribution of Norway to the EU budget is important to remark that is very important, and in terms of population, is one of the countries of the organization which pays more, around 340 million a year. At the same time, Norway does not get money back from the EU via the communitarian policies as it is not a member of the Union, increasing then the net contribution of the country (Polese, 2017).

An example, we see the European legislation concerning salmon and the different ways to farm this fish, that has a huge impact in Norway, as the main exporter of salmon, but at the same time, the Norwegian government cannot influence this legislation because the country is not a member of the Union.

7 THE CASE OF SWITZERLAND

The country was interested in membership in the European Communities, but in the early stage of the process, there was an internal referendum where the Swiss people rejected the idea. The idea of the government was keeping the links with its partners of the EFTA plus enjoying the freedoms of the single market. Anyway, the opposition was strong, mainly coming from the farmers and the main banks. Farmers were against the enlargement because the Swiss level of protection for its farmers is higher than the European one, and an accession would have meant a reduction in the incomes of the Swiss farmers. The main banks were concern about the role of Switzerland as a tax haven. Finally, the complicate confederation system made difficult the approval of the referendum because it is based on 26 parliaments and direct democracy in some places. So, any referendum needs to be passed by all the cantons and the majority of the citizens (Mill, 2005).

As the country rejected the possibility to join the European Union, it also rejected the possibility of joining the EEE because it was just based on EU legislation and it did not allow their members to participate in the legislative process unless they were members of the European Union. Also, there was a fear that the EEE could, in reality, mean the creation of a mini supranational organization (Polese, 2016), with the consequent lost in terms of sovereignty for Switzerland. Anyway, the economic relations between Switzerland and the EU are important and they are developed in the frame of bilateral agreements whereby the Swiss adopt EU legislation in order to participate in the Single Market.

8 CONCLUSIONS

The enlargement to Austria, Sweden, and Finland in 1995 was not very problematic because these countries were already members of the EFTA and already had strong economic relations with the Communities. Also, as these countries were relatively rich made things easier. The enlargement meant that the European group took over USA and Japan in terms of Gross Domestic Product, but not in terms of rent per capita. It gave to the Communities a stronger position in the world affairs, especially in the economic and trade international negotiations. Also, these new members were net contributors to the Communitarian budget with the exception of Finland in the first two years after the enlargement, and hence the European Communities had more money to spend on its policies. The ratification of

the enlargement Treaty was made in a way that the countries where the support to the accession was higher voted before, trying to influence the less friendly countries to the European integration to support the Treaty. (Foucher, 2012) So, the positive support to the enlargement goes down from the popular support in the referendums from Austria, Finland, and Sweden, ending with the rejection of the Treaty in Norway.

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THE TREATIES OF MAASTRICHT, AMSTERDAM, AND NICE

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Abstract

The Treaty of Maastricht in 1992, along with the following treaties of Amsterdam and Nice, were the consequences of European development in the field of integration. They just were the next logical step after the Single European Act, following the pattern based on the spillover effect; further integration solves different problems, as the mentioned treaty of 1986 improved the performance of the Common Market in the European communities, but also generated new problems that could be solved only with deeper integration, with a new treaty, with the Treaty of Maastricht. According to this development, the European Union is just a part of the process and never the final shape of the European organization. Hence this research analyses the contribution of these three treaties to the integration of Europe focusing on what existing problems they solved and what new problems they generated. Some of the new necessities created by these essential treaties were solved by the treaty of Lisbon, but others still need to be addressed. The three treaties are important for Europe because they meant a great step forward in terms of integration, as they created the European Union (before European Communities) and some other fundamental milestones as the common currency the Euro.

Keywords: *European Union, Treaty of Maastricht, Treaty of Amsterdam, Treaty of Nice, European Union Integration, European development.*

1 INTRODUCTION

The treaty of Maastricht and the following amends in Amsterdam and Nice are the consequence of fulfilling the necessities created by the previous treaties, especially the Single European Act. Neofunctionalism is a theory of integration based on the replacement of power politics with a new supranational style that applied to the European integration process could help to develop the political, economic and cultural union of the European continent. This approach was firstly y used in Europe by Jean Monnet, the so-called father of Europe, being developed from a more theoretical approach by Ernst B. Haas and Leon Lindberg using the European experience for creating a general model of integration but their success was partial. Wayne Sandholtz and Alec Stone Sweet have been contributing to this theory with their research updating the results and clarifying different aspects.

The main aspects of this theory influencing the conception and implementation of the three treaties under study in this research are based on:

1 Integrating areas of low politics but ensuring that these are key strategic economic sectors. It reduces the inclusion in the treaties of

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policies that could attract too much attention from the citizens and other stakeholders in the process of Europe. The key sectors have to have the necessary connectivity with the problems faced by Europe back then and the future necessities. Maastricht, Amsterdam, and Nice also needed to connect needs and expectations of the European citizens in order to increase the popular support for further developments closer to the political arena.

2 Give more power to the European Institutions to oversee the integration and give them the ability to act as a sponsor of further integration when these treaties would become obsolete in order to meet the necessities of Europe and solve the arising problems.

3 Integration of particular sectors creating functional pressures for integration of related economic sectors. The spillover effect needs that the economies of the States are reasonably interdependent prior integration. A conflictive issue in relation to the treaties under study as the differences between North and South were still important, and the economic model between continental and Anglo-Saxon states was also too different. Spillover needed political activism to give a push in the right decision because States would have bargained down to a lowest common denominator position any European proposal (Troitino, 2014). The complexity of these treaties in political terms meant that the main political actors behind them were two French politicians, Francois Mitterrand, president of the French Republic and Jacques Delors, president of the European Commission. This duality meant the intermingling of the European and French interest in the Treaties, generating problems for the future as they did not pursuit exclusively the European interest (Moravcsik, 1993).

4 Incorporation of new actors to the process of building Europe: Developing deeper integration focus on solving the social necessities of the European citizens will lead to a transfer of loyalty from the national level to the European level. Any supranational organization at some point needs to have the loyalty of the political subjects included in it, the citizens. Therefore, the treaties developed different concepts to address this issue as the European citizenship (Pérez, 2016) or the inclusion of a social chapter for the first time at the European level. Basically, creating a new level of integration, Europe substitutes the states in these specific policies, influencing the citizens who see how Europe solves their problems. Hence, when they have new problems they will ask Europe to solve them and not their own states (Sandholtz, 2010).

5 The development of deeper integration must create the need for further European Institutions. In the case of these three treaties, the most obvious action in that sense is the creation of the Common Currency, the Euro. It will most probably lead to the creation of a minister of Economy for the whole Eurozone, a new institution in the European Union level to solve the current problems generated by the misconceptions of the Euro.

6 Finally, the economic integration must generate necessities of political integration to achieve the desired unity of Europe. In this case, the Euro and the creation of an Economy Minister of Europe in the short term must be controlled by democratic means. It would be unacceptable to leave in the hands of a technician the economic destiny of Europe without the involvement of the citizens in the decision-making. Hence, the democratic deficit of the soon coming new European institution will lead to a much deeper integration in political terms to provide a democratic essence to the process.

Beside the internal reasons for creating new treaties consequence of the Neofunctionalism, there were also external motives as the end of the Cold War and its consequences in Europe, as German reunification, new democratic states in Central and Eastern Europe, or the new international situation.

The first visible consequence of the end of the Cold War was German reunification when West and East united in 1990, and it could be considered as another enlargement to the Communities because as East Germany united with West Germany, it also became part of the European Communities.

The fall of the Berlin Wall in 1989 meant the beginning of the reunification process. It had had, from the very beginning, an influence in the European Communities, as for example with the Schengen agreement, because this agreement was delayed in order to study how East Germany could influence it. The European politicians mostly supported the process; Delors, president of the European Commission supported reunification and the enlargement of the Community to East Germany. Mitterrand, the president of France, had many doubts about German reunification because it could tilt the balance of power in Europe away from France towards Germany, but as he had no real chance to stop the process, as Kohl just acted without the permission from the Western powers that somehow supported the process but wanted it much slower. Then, Mitterrand thought of tying Germany closer to Europe by accelerating European integration under Franco-German leadership. This meant the creation of the Treaty of Maastricht. The position of France was clear: a strong united Germany could repeat the economic miracle of after the war and create a much bigger and stronger German state which could dominate European politics. To avoid an independent Germany, more Europe was needed, uniting Germany to its European partner and dissolving the German influence in the European framework (Moravcsik, 1995).

Nevertheless, the so-called German miracle did not repeat in the case of East Germany, and the country had, and to some extent still has, problems uniting East and West. Margaret Thatcher, British most influential premier in the second half of XX century, had lost the leadership of the conservative party in November 1990. She positioned clearly against the reunification because the equilibrium in Europe could be damaged by a too strong Germany. But as she lost her power in the UK (Chochia, 2015), she just became a bitter enemy of reunification without real possibilities for influencing the process. Felipe Gonzalez, the socialist president of Spain, was a keen supporter of German reunification and worked intensively in this direction becoming a strong advocate of the German cause. Reunification was finally achieved in October 1990, and the problems started for Germany and hence for the Community, as the process did not work as well as expected.

The main problems were:

- Too high a conversion rate of the East German currency to the German Mark; one to one
- West Germany could not absorb East Germany, as had been initially thought; the expected new economic miracle like the one after WW II did not happen. And the process became much longer than expected, with consequent financial problems for Germany.
- The European Communities got involved in the economic effort of incorporating East Germany to the capitalist system. The European Structural Fund helped Germany, as the new 5 German regions received a special structural fund specifically created for the German reunification, showing the solidarity of the member states with Germany. Nevertheless, it also led to a problem balancing the European budget and less investment in other European policies.

Hence, the treaties of Maastricht, Amsterdam, and Nice were the consequence of internal reasons, Neofunctionalism, and external reasons deriving from the end of the Cold war. As the integration needed or planned included too many aspects and deepened most of the European policies, it was decided to be implemented in three different stages, Maastricht, Amsterdam, and Nice. This design intended to reduce the opposition of the Euroscepticism to a great treaty included so many innovations that could foster the fears of the Europeans. Therefore, Amsterdam and Nice were basically amendments to the Treaty of Maastricht.

2 THE TREATY OF MAASTRICHT OR THE TREATY OF THE EUROPEAN UNION

The Single European Act created a Single Market, and it meant the creation of a common economic area. One of the remaining obstacles to trade in the area was the existence of different currencies and its negative effect on trade. The logical next step was the creation of a single currency for a single area. Another fact influencing the new Treaty was the fall of the Soviet Union and a new era in international relations. Europe needed to define its own position in the new scenario after the end of an international world dominated by the

USA and the Soviet Union, and hence a new treaty was needed. The European weakness during the 1990-1991 Gulf crises and the war in Yugoslavia showed the necessity of Europe's adopting a common position in the international arena because individually, the member states did not have enough power to interfere effectively in international problems.

The German reunification, as mentioned before, was another important factor in the elaboration of a new treaty; it was needed to bind Germany closer to the Communities to avoid an independent and powerful Germany dominating European relations.

Finally, the European institutions were pressing for reform in the treaties, especially the European Commission and the European Parliament considered the Single European Act insufficient because of its working system tilt to intergovernmentalism. Therefore these two institutions were demanding deeper integration and more power for the European Parliament (Troitino, 2015).

The negotiations for the new Treaty were very difficult because the positions of the member states were very different, national interest was in some cases more important than the common management of the common necessities. The United Kingdom refused any deeper integration in the European process as their participation in the European integration was highly influenced by its own national character and peculiarities. The position of the British was clear because, for the government of Thatcher, the SEA had been already too much, and deepening integration would have meant a new loss of British sovereignty. The inflexible position of Thatcher against this new Treaty was one of the reasons for the discontent towards her government that finally meant the end of her time as British Prime Minister after an internal revolt. Nevertheless, the participation in the process initiated by Maastricht, Amsterdam, and Nice lacked a strong popular support among the British citizens and never was explained properly by the British politicians, influencing negatively in the BREXIT. The kingdom of Spain was afraid of losing the much needed financial support from the Communities and asked for a new Cohesion Fund as a condition for accepting the new Treaty (Moravcsik, 1998). Therefore Spain asked for more financial support to agree on such an important step in the European process. Also, Spain, united with Portugal, asked to keep the unanimity in the decisions link with the environment. Both Iberian countries were afraid about the more developed countries in the Communities because their legislation provided higher protection for the environment, and hence extending it to the Communities could have meant problems for the economic development of Portugal and Spain because of the financial cost. This problem also influenced the enlargement to Central and East Europe, as the candidates were afraid that protecting the environment could have made their economies less competitive (Monar, 1993). The already united Germany refused to create a new fund because the country considered that it was already contributing sufficiently to the European budget and a new fund could mean higher contributions to the Community at a time that German financial resources were needed for German reunification. Germany and the Benelux countries asked for federalization of the institutional system, but the other partners of the Community were not willing to advance so much in the political integration. Hence, the internal reasons, Neofunctionalism, and the external reasons, the end of the Cold War, and the European institution's lobby were complemented by the national interest of the member states shaping the treaties of Maastricht, Amsterdam, and Nice.

After hard and long discussion, the final draft was adopted by the Council, but the European Parliament found it insufficient and threatened to reject it (Ramiro, 2014). This European institution, representing the European citizens, opposed the internal organization of the treaty based on pillars. The parliament disagreed about the exclusion of the Common Foreign and Security Policy from the first pillar (under the control of the communitarian institutions) because it could mislead European citizens and the rest of the world about the essence of the Union. The Parliament argued that the division based on pillars was not democratic because the only democratic institution of the Union, the Parliament, did not have any control over the second and third pillars. The Commission, in similar terms, asked for a Treaty-based just on one pillar. Nevertheless, the

organization of the treaty based on three pillars was maintained, lasting till the last treaty of Lisbon in 2009.

2.1 Innovations of the treaty

The Treaty of Maastricht introduced a new working system based on three pillars. It was called a temple approach, the pillars supporting different policies supporting the European house. The first pillar including the European Communities was based on:

Qualified majority: The decision-making was based on a system where most of the member states, following some rules, decided about the common procedures. It means a de facto loss of national sovereignty in the sense that one member state could be outvoted by the other members and forced to adopt any rule against its national interest. The idea is united with the concept of sharing sovereignty rather than losing it, a big difference in legal terms. It created a common framework system to allow the approval and implementation of legal measures positive for the majority of the area, positive for Europe, even though it could have some negative influence on individual states (Moravcsik, 2013).

Subsidiarity: This principle was included in the first pillar because it was linked with the European building process itself. Subsidiarity mainly means that the institution dealing with an issue or a problem in the most effective way will prevail in this field (Shaw, 1996). So, local problems can be solved better by local authorities, regional issues by regional institutions, national issues by national institutions, and European issues by European institutions. It is one of the main principles of federalism and a clear concession for those who were afraid of the European Union as a strongly centralized organization.

The previous policies of the Community were included in the first pillar where the power was divided among the European institutions, mainly balancing the power of the Council of the European Union and the Parliament under the surveillance of the High Court of Justice and the executive powers of the Commission. New policies included in the first pillar with the Treaty of Maastricht were ones such as consumer protection, culture, development, education, public health, Trans-European networks, and, under a special protocol, social policy.

The second pillar was the intergovernmental organization for the Common Foreign and Security Policy. This pillar depended on the member states and was out of the control of the Communitarian institutions. Only the political will of the member states was taken into consideration as a way of developing this policy within the Union. This pillar also included the possibility of developing a defense policy in the Union under the umbrella of the Western European Union. It was not the first time that coordination of the external policies of the member states was promoted, but it was the first time it was included in the treaties as a way to integrate the different positions of the member states, but almost always working with a system based on unanimity, avoiding the loss of sovereignty of the member states in such a sensitive policy (Vernygora, 2016).

The third pillar of the structure of the Union was based on cooperation on justice and home affairs, mainly asylum, cross-border problems, customs, drugs, fraud, immigration policy, judicial cooperation, and police's coordination. All these problems were a consequence of the Single Market and the Schengen agreement, a common area with free movement of goods and free movement of persons with the negative side effect of free movement of illegal products and free movement of criminals within the common area (Pipkorn, 1994). As it was necessary to control these problems from a common position, and integration was not possible because security is one of the main attributes of any state, cooperation was chosen as the means by which to eliminate these negative effects from the common area. In the future, deeper cooperation will lead to some kind of integration in this field, that being more effective for Union for solving the problems related to justice and home affairs. The member states at the moment are still not ready to take such an important step in terms of integration because it would mean the creation of the United States of Europe (Chochia, 2012).

The ratification of the Treaty was complicated, and the Danish citizens rejected it at first by 50.7% against 49.3% of the votes. As Denmark is a small state, not crucial in the European process, it was decided that the Treaty should not change

because of Danish rejection. If any big state of the Union would have rejected it, as France did with the so-called European constitution afterward, the Treaty might have had to be reformed and changed. So, there was a second referendum in Denmark where defense cooperation, European citizenship, and the common currency were excluded for Denmark. Then it was approved by the Danish citizens without major problems. The United Kingdom did not approve the Treaty until the resolution of the Danish rejection and opted to stay out of the social chapter included in the Treaty. France also had problems with the ratification of the Treaty, with a narrow victory of less than 2% of the votes. Finally, Germany had to wait for ratification until the German High Court gave its approval (Laursen, 1994). A German citizen started the process in the German justice system because the German government pretended to pass the new Treaty in the parliament and was not planning any referendum. He argued that the parliament was just a body representing the German people, the real holders of sovereignty; and, as the Treaty of Maastricht meant a big loss in terms of national sovereignty, it was illegal to pass it just in parliament without consulting the German people. The German Court ruled against this idea, arguing that Germany was not giving away the sovereignty of German citizens; it was just sharing it because the European Union was not an international organization but a supranational one. After so many obstacles, the Treaty was finally approved and started working in November 1993.

2.2 Social Policy and Maastricht

The European Communities had based their development on a common management of a common European market (industrial production and agriculture) eliminating physical barriers to intracomunitarian trade and establishing common external borders. The integration, fundamentally economic, did not include common social policies and neither mitigated the pernicious effects of the market economy on the weakest elements of the system. The basic social redistribution of the wealth generated by the capitalist economy was managed individually by the member states when the market itself was common, providing higher benefits to those economic agents operating at the European level, medium/big size companies mostly. This situation served the USSR to criticize the European integration process as a capitalist tool under the influence of the USA against the workers of Europe. Francois Mitterrand, president of France and precursor of social Europe, already in the late 60s included social aspects in the debate about Europe, the idea of the European Communities as a process towards the integration of Europe carried intrinsically his worries about the Europeanization of social aspects. The French president, a pioneer in the social democracy of Europe, proposed a Community built for the benefit of the people, for the benefit of the workers or it would not be Europe and would certainly collapse in the long term. The ideas of Mitterrand were based on a society working with a market economy but with high level of social protection communitarizing a part of the benefits to achieve a balanced social reality based on equality of opportunities and the protection of the least favored by the market; and obviously wanted to implement it at the European level (Troitino, 2015). He went further stating that Europe will be nothing until a defined social European policy was implemented. It was actually a confrontation of two models of integration, the Europe of merchants versus the Europe of the people, a debate still alive today.

Following his election as French president in 1981, Mitterrand made the Europeanization of the social policy a basic complement to the European market for its proper functioning but he found the opposition of important European partners, UK, Holland, and Germany. The British rejected the idea of a Social Policy in the Communities as their national model was far from the continental social model mostly spread in the rest of the community members with the exception of the Mediterranean model of Italy. The Anglo-Saxon model advocates for less state intervention in the market beyond its basic regulation and lower public unemployment protection to foster the participation in the labor market, reducing the expenditures of the state and increasing its revenues (Pando, 2017). The Continental social system mostly implanted in France and Germany is very different and more costly but also more effective in terms of equality but more ineffective in terms of competitiveness. Nevertheless, the creation of a Social Europe meant (and still currently means) the convergence of the different social models of Europe, a key

element in the national identity of each European nation and hence a very problematic area to integrate. Germany and the Netherlands were more concern about the competitiveness of their economies, as social policies are related to employment/unemployment policies, taxes, basic state services and other measures that obviously have a big impact on the economic agents. The negative respond of the European partners and the problems of the Mauroy government in its French domestic social reforms eliminated the chances of success including social aspects in the European integration at the beginning of Mitterrand's term (Sverdrup, 2002).

The creation of a real European market without national obstacles to the intracomunitarian trade and measures of equivalent effect was introduced by the Single European Act in 1986. The new treaty meant deepening Europe in economic terms and was supported by all the members of the Communities, especially by France, Germany, and the UK. During the negotiations, Mitterrand showed the opportunity to include social aspects in the development of the European market, but the strong opposition of the rest of the members, especially the United Kingdom, led the proposal to a dead end. Nevertheless, the fast evolution of Europe due the end of the Cold War paved the way for more cooperation in the social aspects, by 1988, as he pointed out, the atmosphere had relaxed, and during the 1989 Council, under the French presidency, the Social Charter and Social Action Programme came to the frontage. By the time of the Maastricht Summit in 1991, only UK opposed a social chapter in the European Union text (Troitino, 2014).

Finally, the Social Policy of the European Union came into force in 1992 in the Treaty of Maastricht. The inclusion of social aspects was paved by the opt-out of the UK that removed the main obstacle to the implementation of a common policy in this field. Nevertheless, there is still an obvious social deficit in the European Union as the member states are afraid of developing the integration in this field because of several reasons. The treaty of Maastricht created the framework for the further development of the Social Europe but later there has not been the political will in Europe to push for deeper integration in the field. Hence, currently, the European Union lacks the social aspects that could give coherence to the European integration project.

2.3 German Reunification, Economic Integration and the Common Currency and Maastricht

Europe's stance on economic integration was based on the special Franco-German relationship and on the necessity to firmly integrate a reunified Germany into the Communities. While West Germany assumed economic leadership of the Communities after WW II, France was eager to secure its political predominance over communitarian affairs. To this aim, France chose economic means, namely the creation of an economic monetary union (EMU) including a common currency.

It was in this context that the idea of a multi-speed Europe was first accomplished: as a single market logically can only fully function when common costs are reduced, Mitterrand and Kohl agreed to gradually abolish controls at the Franco-German border in 1984. This triggered a spill-over effect from the bilateral to the European area. Only one year later, the Schengen agreement was signed by all members of the Communities. Although this agreement enormously favored the power position of both West Germany and France, it was Mitterrand who clearly took on the leading role due to the division of Germany, which provided for an asymmetrical distribution of power between the partners.

The Communities' common objective was stated for the first time in the SEA (1986), namely the creation of an economic and monetary union, including a single market, by 1992. Article 13 of the SEA defines the single market as an "area without internal frontiers in which the free movement of goods, persons, services, and capital is ensured" (European Communities, 1987). According to the timeline set forth in the SEA, an intergovernmental conference on a monetary union was to be held to discuss possible designs of such union. West Germany, however, refused to agree to a date due to large domestic protests demanding the unification of West and East Germany. European politicians' and leaders' reactions to the possibility of unification ranged from skepticism to blunt refusal, fearing the threat

that might originate from a newly strengthened Germany.

The Maastricht Treaty was the outcome of a process set forth the aim to establish a common currency by 1999 and enshrined the objective of an EMU in its Protocol on the Statute of the European System of Central Banks. While this step would "effectively eliminate the monetary sovereignty of the Community's members" as it expanded the competencies of the newly founded European Central Bank (ECB), a common currency would further unify the member states of the Communities. Satisfying the French security interests, Mitterrand thus "anchor a now greatly enlarged and strengthened Germany into a more vigorous, more permanent, organic form of European Community" that found its major expression in the creation of the euro (Ramiro, 2013).

In the following development process of the EMU, France proposed a union that would focus solely on economic issues arising from the introduction of a common currency. Doing so, he had a two-fold aim: on the one hand, he wanted to improve France's bargaining position vis-à-vis Japan and the USA, which were the economic superpowers at that time, by strengthening the Communities. On the other hand, Mitterrand anticipated consolidating French predominance over European affairs. To him, a political union had several strategic flaws, including a bettering of Germany's position and a reduction of the value of France's special prerogatives in the area of security and defense policy (Troitino, 2008). Consequently, he stressed the economic benefits of the introduction of a common currency: the euro "will be the strongest [currency] in the world, stronger than the dollar, because it will be much more stable and will allow Europe to assert itself as the first economic power on the planet" (Balassone, 2004).

It is important to note that Mitterrand did not envisage any further enlargement of the Communities when drafting his plan for the EMU. As shown above, he aspired a deeply integrated Western Europe under French leadership with amicable relations with Central and Eastern Europe. A common currency then served as the focal point in his European design, firmly integrating states that had a similar economic performance. Today, however, the Eurozone (EZ) counts 19 highly heterogeneous members. As a result, the occurrence of asymmetrical crises becomes more likely.

An asymmetrical crisis is a shock to the economic system that affects various parts of the system differently: while France and Germany recovered quickly, a severe blow has been dealt with Greece's economy. This shows an inherent flaw in the EU's common currency: as it was designed for a homogenous, small group of states, the ECB lacks the instruments to effectively counter an asymmetrical crisis. Due to the widely different economic performances of EZ members, financial tools such as devaluation or revaluation of a currency can never reflect the reality of all economies. While Greece, for example, is in dire need for a devaluation of the euro, this would overheat the German economy. Thus, a common currency precludes vigorous action in times of crisis and leaves weaker economies in the system largely unprotected. The question remains whether or not the euro would function better if Mitterrand's plan had been fully adapted, including a deeply integrated homogeneous Western core.

3 THE AMSTERDAM TREATY AND THE TREATY OF NICE

The next Treaty in the European process had already been decided in its precedent treaty because Maastricht left some issues unresolved and the member states decided to postpone any decision about them to the following years with a new Treaty. The difficult and long process of ratification of the Treaty of Maastricht, and a growing resistance from European citizens to deepening the Union resulted in the treaty of Amsterdam's having just modest provisions in order to avoid problematic situations (Gaja, 1998). The main contributions of this Treaty were basically adapting the European Union for the biggest enlargement of its history to Central and Eastern Europe, and including more policies in the first pillar. It followed the European logic that when member states cooperate in some field (Pernice, 199), they solved the main problems there; they then feel sure that this policy can be managed properly on the European level, and they share their sovereignty in this field with the rest of the

members of the Union in order to act more quickly and more effectively (Langrish, 1998).

The European Council had long and difficult discussions before an agreement was reached. But it was an agreement that did not satisfy most of the parties involved in the negotiations. The main target of this new treaty was the power of the states in a Union of 27 members and other reforms of the European Union in order to work properly under the new situation with so many new members. It was trying to give the Union the tools to avoid the collapse of the working system of the European institutions because they were not adapted for so many countries, so many wishes, and so many different interests. At the end of the summit, the Council reached a swift agreement but pointed out a reference for a further reform, a reference to the future European Constitution proposed by Germany, Belgium, Italy, and Sweden (Troitino, 2013). The Treaty was basically a revision of the Treaty of the European Union and took 11 months of negotiations for ending with a hasty agreement taken in the last days when the time for an agreement was almost over. The new treaty started working in February 2003 after ratification by Ireland in a second referendum. Again, a small country rejected the treaty, and, instead of forgetting the new reform in the whole Union, the referendum was repeated until the Irish gave their consent. It would be interesting to see what the reaction of the big countries and the answer of the European Union would be if a country rejected any treaty twice. As all new treaties need to be passed by all member states, the possibilities would be mainly three: expelling the country from the Union, stopping the reform in all of Europe, or starting a parallel integration including the states interested in deeper advancement. All of them would damage the European building process enormously.

The Treaty of Nice gave new values to the votes of the member states in the European institutions and to their representation in the European Parliament. It also changed the internal composition of other institutions, as the HCJ or the European Commission. The new values of the national votes in the European Council were:

Germany, France, Italy and UK 29, Spain and Poland 27, Romania 14, Netherlands 13, Greece, Czech Republic, Belgium, Hungary and Portugal 12, Bulgaria, Sweden and Austria 10, Denmark, Finland , Ireland, Slovakia and Lithuania 7, Luxembourg, Latvia, Slovenia, Cyprus and Estonia 4, Malta 3.

The number of votes was decided according to different patterns, as economic importance, size, or size of the state, respecting the unwritten principle of equilibrium between France and Germany in the European Union (Galloway, 2001). Also, the small countries are over-represented if we compare the number of votes and the number of votes of the big countries. The Treaty also redefined the concept of a qualified majority, establishing it in 255 votes of 345, adding two ways that the decisions could be blocked:

a. If half plus one of the member states vote against any rule, it cannot be approved. It is clearly a way to protect the smallest countries in the Union, and avoid a situation where the big countries, allied and voting together, impose their decisions over the majority of the states. It does not take into consideration the population of the countries, or its size, just that they are countries. In this sense, it is closer to a confederation.

b. If there is an agreement among states representing more than 62% of the European population, any decision can be vetoed. This is a measure to protect the biggest states from being outvoted by most of the member states representing a minority of Europeans. It is an action closer to a federation, where the population matters more than other factors.

The composition of the European Commission also changed. Previously, the big states had two nationals as Commissars, and the rest of the states just one. As many new countries were going to join the Union, the work of the Commission would have been very difficult with so many Commissars. Even now, when each member state has a national working as Commissar, the system is sometimes too slow and the efficiency could increase with fewer members, but all the states want to keep a member in the Commission because of its influence and national prestige (Moravcsik, 2002). According to the internal rules of the Commission, the Commissars make an oath protecting the European interest and hence

forgetting about the national interest of the countries they are from. The states should not worry about the number of Commissars or whether they have a national in the Commission if this rule is respected. Moreover, the Treaty of Nice established that after each enlargement the number of Commissars will increase. The last reform of the Commission was about the election of the president of the institution; previously he had been chosen by consensus and after the reform, by qualified majority.

The European Parliament changed the number of its members, with different representation for each member state according to its population. It follows a democratic principle, because it is supposed that the EP is the representation of the European people, and hence, it should take into consideration the number of voters of each member of the Parliament. Germany, as the most populous member state of the EU, in Nice got more seats than any other country, breaking the traditional balance between Germany and France; but the small countries got more representatives in terms of population than the big states. Germany, with almost 82 million people, got one member of Parliament for each 828,000 people; France needed a similar number of people for each of its members of the European Parliament; the middle states, as Portugal, just needed half of this number for getting a member of Parliament, and countries as Malta just needed 84,000 people for each of its 5 members. This means that for election to the European Parliament, the vote of a person from Malta counted the same as the vote of more or less 10 German citizens. The protection of the small member states of the Union was clear here, but maybe the differences were too big and there was a lack of democracy in terms of equality among European citizens. Nevertheless, this was accepted by the member states of the Union, and no reforms have been planned in this matter in the near future after the Treaty of Lisbon.

Other reforms of Parliament were the right to go to the European High Court of Justice and ask for the opinion of the Court about the compatibility of European international agreements with current Treaties.

The European High Court of Justice also suffered some reforms by the Treaty of Nice, adopting the institution for the enlargement to East and Central Europe. The numbers of the HCJ changed and there was just one person from each member state before the big countries had two. Also, it was established that just the most important cases will go to this court to grant the unity and coherence of the Communitarian law and the industrial protection. The rest of the cases go to the other Communitarian courts (Shaw, 2001).

On the procedures, there was a very important reform introduced by Nice, the reinforced cooperation. As the Union was going to undergo its bigger enlargement ever, it was thought that the operating system could not handle unanimity or consensus in many cases, and it could cause the paralysis of the integration process. In order to avoid a situation in which a member state uses its veto to stop any further integration even when this country was not included in it, unanimity was abolished in this kind of measure. After Nice, if a member state wants to stop any reinforced cooperation, it must ask the Council of the European Union, and this institution will decide by qualified majority, except for cases related to Common Foreign and Security Policy. The rules to start a reinforced cooperation, to start a new policy in the Union with just some of its members when others prefer to stay aside, also changed with this Treaty, making it easier. Previously, most of the states were needed in order to launch reinforced cooperation and start a new policy in the Union; after Nice, it was established that just one-third of the member states could start a new policy in the Union for themselves if the rest of the partners do not want to widen the Union. The reinforced cooperation after Nice was allowed in Foreign and Security Policy, just by unanimity, but not in the field of defense because of the fears of some member states of losing their neutral status in international relations. Reinforced cooperation was accepted and was made easier after this treaty despite the reluctance of some member states afraid of the creation of different levels of integration within the European Union, or what is called now a multi-speed Union. The problem is the creation of the Union of a central core of countries more integrated and that would dominate the rest of the Union. If it is going to happen, it is more likely that France and Germany are going to be members of this central part of the EU, and some new members and the periphery of the Union will be in the second group because of

free choice or incapacity of their economies. Also, a multi-speed Union will confuse both European citizens, already distant from the European institutions, as well as the international world. Nevertheless, there are some policies already working with this system and there are no major problems concerning these issues. For example, the UK decided to step aside in Social Europe because of free choice and fear of European interference in the competitiveness of the British economy, and nothing exceptional has happened. On the other hand, we see how states outside the common currency wanted to be in all the meetings about the Euro in the last crisis because they said that all the decisions taken there would influence the whole Union, not just the eurozone. Of course, the leader of this group of countries was the United Kingdom (Moravcsik, 1999).

In the field of decision-making, the Treaty also enlarged the policies decided by qualified majority, previously based on unanimity, because the enlargement to Central and Eastern Europe would have made decision-making in the Union, if it were based on unanimity, where all the members had to agree, more difficult and, especially, slower. Hence, 29 policies ruled before by unanimity were included in the qualified majority voting system. There were some policies were the member states still felt the necessity of keeping the national veto, or unanimity, as France with Cultural and Audiovisual services, or Spain with the Cohesion Fund, or the United Kingdom with Taxes and Social Security.

Another novelty of the Treaty was the inclusion of the European letter of fundamental rights in article 52.2. It has only political value, but it could be the beginning of a wider reform where the Communitarian law will be much influenced by this chapter. The rights included were rights like protection of personal information, rights of children, rights of elders, protection from being fired without reason, integration of handicapped people, etc.

Finally, the treaty reformed article 7 of the TEU because of the case of Haider in Austria. This politician, who later was killed in a traffic accident, created a problem for the Union when his political party became an important force in Austria, and even took part in the Austrian government, because of his radical right political beliefs. The Union could not stop his accession to power because there were no European tools for acting in the domestic politics of Austria. After Nice, if the European Council finds an important violation of the fundamental rights in one member state, it can suspend some of the rights of this state. It also adds to this action some preventative measures for the violation of fundamental rights. Before that, fines could be imposed only after the damage had been done, never before.

In that sense, if one-third of the member states, the European Parliament, or the European Commission asks for a penalty, the Council by a qualified majority of 4/5 of its members with a previous agreement with Parliament can send recommendations to a member state as a warning against further actions (Sinnott, 2003).

4 CONCLUSIONS

The main problem of the Treaty of Maastricht was the EU's complexity, the impenetrable language, and lack of transparency. The problem here was that just specialists could understand it, and regular citizens could not comprehend the significance of the Treaty. It made the Union even more distanced from European people. The treaty also did not achieve one of the original targets of more democracy and more subsidiarity, and hence did not increase integration in these basic fields. The different rules on different policies about decision-making made it more difficult to understand the working system of the Union for European citizens, again separating the people from a process which influenced their everyday lives.

The treaty of Amsterdam did not address really its priorities as the problematic approval of the Treaty of Maastricht influenced the European leaders who were a concern of a rejection from a major member (Shaw, 1998), as France, leading to the collapse of the whole reform. Hence, the treaty was too timid and postponed the solutions to the European problems.

Finally, the treaty of Nice was facing a different environment with different political actors representing the main stats of Europe, focusing primarily on the share of power of their own states, postponing again the necessary reforms to the treaty of Maastricht already envisioned in 1992.

In terms of European integration, these three treaties must be understood as a whole, a pack of reforms addressing the internal problems of the European Communities derivate from the Neofunctionalism approach. The process also responded the external influences, mainly the end of the Cold War and the rise of a new world order.

Nevertheless, the treaties did not fully fulfill the necessities generated by internal and neither external reasons because the process was designed in a stepped reform with three consecutive treaties implementing a comprehensive reform. The resistance to the first leg, Maastricht, weakened the process and left unfinished the reforms as Amsterdam and Nice were too modest.

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INTERNATIONAL AND SERBIAN LEGAL FRAMEWORK OF THE RIGHT TO PRIVACY IN CYBERSPACE

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Abstract

With the usage of the Internet, transmission of digital data and information has become even easier. As soon as certain personal information is published on the Internet, it becomes public and available to anyone to read and use. The right to privacy in its origin indicates a person's desire not to be disturbed. Privacy on the Internet consists of the right to personal information, and informational privacy includes informational security, meaning that informational society exists when everyone can decide how to dispose of his personal data, regarding his needs and community requirements, and it is often referred to as 'e-privacy'. The right to be informed must not affect the right to privacy, within the legal framework on both international and national levels. Being that computer crime has become a transnational problem, it is clear that the mechanisms to counter fight this type of criminality should not merely focus on the changes in national criminal law legislation, but should also involve undertaking appropriate technical, structural and educational measures, followed by ratification and implementation of relevant technical and legal instruments in order to minimize the risk of computer misuse activities.

Keywords: *Privacy, e-privacy, information privacy, right to be informed, legal framework*

1 INTRODUCTION

The right to personal privacy in the virtual space has been endangered by the development of modern technology. The fact that it is possible to collect, store, distribute, reproduce, publish and make personal data available to a wide range of people in cyberspace, developed a feeling of insecurity and lack of safety and protection. A few decades back, while computer systems were just in a phase of development, all these data were transferred from the virtual space in a variety of digital media, making the 'digital dossiers' of each internet user. The development of information technologies enabled the connection between different databases, which further increased the risk of endangering the privacy of individuals.

The usage of the Internet made transmission of digital data and information even easier. Initially, the 'primitive' internet has allowed the anonymity of users - the information is forwarded via IP address, so both the sender and the recipient can keep their anonymity. Today's 'progressive' model of internet communication is entirely different and even more dangerous for the privacy of its users

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2 THE PRIVACY OF SOCIAL NETWORK USERS

The use of information and communication technologies has infiltrated into all spheres of human life (Vilic, V., & Radenkovic, I., 2016), and social networks have created detailed and comprehensive database of personal details from the lives of its users (Viegas, F. B., 2005) and this database is daily, complemented with increasing number of information that is public and accessible to all stakeholders of virtual interaction in cyberspace. As soon as certain personal information is published on the Internet, it becomes public and available for anyone to read and further use and the owner of the information loses control over the fact who has the access to his intimacy and the information that is published. The users of social networks and internet in general usually overestimate their power of having control over the information they have published via social networks because they are unaware of their technical ignorance and the possibilities of privacy settings of user profiles.

There are four main reasons why there is a possibility of violating the right to privacy on social networks (Shah, M., 2013):

1 The imperfection of social network users, related mainly to the imperfections of a man as a human being and his need to share his own privacy with other people and the lack of awareness that the privacy does not exist in cyber;
2 Flaws in the programs (software) that social networks use, resulting in lack of privacy protection mechanisms on social networks, making users' privacy unprotected from all direct malicious attacks;
3 Inadvertent disclosure of personal data;
4 Conflict of interest between social networks, advertising companies, and the users.

Internet users can protect their privacy in cyberspace through controlled disclosure of personal information. By the definition given by Joseph Cannataci, data protection means the protection of an individual from abuse or improper use of personal data by any other person, organization or the state (Cannataci, J. A., 1987).

Privacy on the Internet consists of the right to personal information concerning their preservation, use, safety and displaying this personal information in the cyberspace, as well as identification of information relating to particular website visitors. This is why the privacy in virtual space can be defined also as 'limited access to personal data / limited control of personal data' (Tavani & Moor, 2001. in Spinello, R., 2011:44). Privacy can be defined as 'a state of carefully limited access to personal data' (Spinello, R., 2011:44). Any behavior different from those described above can result in privacy rights abuse and the collection of sensitive personal information about someone without their consent and knowledge that the personal information could be manipulated.

In electronic communications, privacy can be understood as 'freedom from systematic observation, recording of activities and personal data, or the right of individuals to self-determine when, how and to what extent information about their communications can and should be available to others' (Nikolic, M., 2009).

Besides the fact that other social networks and Internet users could violate the privacy of another user by manipulating its personal sphere, the state also can often misuse the personal data stored in the virtual space. In this case, the question is to which extent is the collection of personal data necessary and justified for the functioning of a modern society, as well as the scope of the other social network users' right to use and to access other people's personal information. Edward Snowden, a former computer analyst, in June 2013 revealed that he collected certain information about how the official state governments violate the right to privacy of internet users in the virtual world, by unlawfully monitoring them and publicly disclosing their personal information.

3 THE CONCEPT OF PRIVACY AND INFORMATIONAL PRIVACY

In its origin, privacy indicates a person's desire not to be disturbed (Nikolic, M., 2009). Discussing the theoretical concept of privacy and the very content of that concept, Anglo-Saxon literature referred to Judge Louis Brandeis and attorney Samuel Warren and their article 'The Right to Privacy', published in 1890, in which they defined the most accurate and the most specific concept of privacy,

as the 'right to be left alone' (Surlan, T., 2014). This concept of privacy is protecting the privacy of personal autonomy, moral and physical integrity, the right to choose a lifestyle and the way of life, the interaction between people etc.

The right to privacy is one of the fundamental human rights, it is recognized both on the international and constitutional level, it is incorporated both in public law and civil law provisions, obligatory for everyone (lat. *Erga omnes*). The right to privacy allows the individual to selectively show to other people as much as that individual wants (Jovanovic, S., 2014: 94). Privacy in electronic communications includes the collecting, processing, and dissemination of information about users to third parties, whereby the individuals who record and publish their activities and personal data, determine when, how and to what extent should and can make available to others (Jovanovic, S., 2014: 94). The central point of this multidimensional structure of the right to privacy consists of the urge to retain personal data private and to prevent other people to interfere. Confidentiality of information that users share with others in virtual space should not be compromised: the user needs to be sure of the identity of the information sender and that received information is identical to the originally sent message. Any deviation from this rule reduces the trust of users.

Privacy, as such, has many critics. According to one, the right to privacy does not exist, because any interest protected as the private right may be equally well protected by some other human right, first of all under property ownership or property rights, or the right to physical integrity and security (Thomson, J. J., 1975). Other critics refer to the argument that the right to privacy that wishes to be protected, is not economically profitable (Posner, R., 1981), i.e. the protection of this right is not based on any known legal doctrine (Bork, R., 1990). The third critics are the feminist critique of the right to privacy, which refers to postulate that the special emphasis on the need to protect the right to privacy is actually harmful to women, because this right could be manipulated in order to control women and to make women under the constant domination of men, under the guise of their own wish to be protected (MacKinnon, C., 1989).

Privacy can be reviewed and defined from several different aspects: as a political right, as a civil right and as a right that exists to protect the interests of citizens (Barnes, S., 2006). As a political right, the right to privacy can be defined as 'security of the citizens that the state will not interfere with their personal civil rights' (Schement, J. R., & Curtis, T., 1995: 136). Privacy as a civil right does not mean to hide something from someone, but to control something that belongs to an individual, its autonomy, and integrity, or as 'the right to control what details of its' own life will be familiar to others' (Garfinkel, S., 2000:4). Concerning the limitations of the privacy right, it is essential to what extent one can reveal the privacy of an individual without violating the privacy.

The right to privacy, as an individual right, can be understood as controlling, editing, managing and deleting personal published information when the owner of the information decides so (Westin, A., 1970). In the context of social networks, privacy and personal information include all information that one individual can publish on its public profile, including photos, comments, information about the daily actions and friendly gatherings, etc. (King, J., Lampinen, A., & Smolen, A., 2011). From this point of view, the possibility for abuse the right to privacy on social networks can be viewed through two conceptual categories: social threats or organizational threats (Krasnova, H., Gunther, O., Spiekermann, S., & Koroleva, K., 2009).

Privacy can be divided into spatial, communications and informational privacy (Boban, M., 2012: 595). *Spatial privacy* refers to maintaining a privacy in someone's home and other space in which people lead their own lives separately from the others. This type of privacy includes the respect of the right to have its' own space, both within home and family and in the workplace. *Communications privacy* refers to privacy of correspondence and other forms of communication with other people. *Informational privacy* is closely related to the development of information technology and refers to collecting personal data about internet users, to managing these data and to their further use. It refers to a need of an individual, a group or an institution to independently decide when, how and what information about themselves they wish to cede to others, but also include information security, when

each individual can decide how to dispose of his personal data, regarding his needs and community requirements. Informational privacy consolidates legal values of protecting the rights of an individual in a society that have developed information technology and the concept of personal data, referred to as 'e-privacy'.

The right to informational privacy includes the right to be informed, the right to an adequate use of personal data, the right to control these data, the right of correction published data and the right to use legal remedies and appeals (Drakulic, M., 1996: 65). From this point of view, the possibility of abuse of the right to privacy on social networks can be viewed through two conceptual categories: social abuse or organizational abuse (Krasnova, H., Gunther, O., Spiekermann, S., & Koroleva, K., 2009: 97). *Social (interpersonal) abuse* may relate to individuals who use social networking and without authorization 'transfer' and 'spread' other people's personal confidential information to unauthorized third parties (e.g. When someone, using the status of friends on social networks, transfer someones' personal data to a third party or prospective employer). *Organizational (institutional) abuse* is imposed by accepting the rules of the social network itself, because of the existing threats to the privacy of users by the companies funding the social networks through its services and platforms (e.g. selling personal information about social networks' users to advertising companies).

Despite the daily development of information technologies and new forms of potential abuse, Internet users expect that each information system has the capacity to reject attacks that can endanger system data. Also, the problem is the fact that users voluntarily and on their own initiative publish a large number of their personal information in cyberspace, without thinking about whether this information will be misused or not. The most common methods of disrespecting the right to privacy on the Internet is unauthorized access, collection, and processing of personal data of users, misuse of collecting data, the interception of sending information etc. However, according to a European Commission report on EU citizens' experience and perceptions of cybersecurity issues in 2012 (European Commission - Special Euro-barometer 404: Cyber Security Report, 2013: 89), the majority of respondents expressed that they have changed their behavior when using the Internet by not giving their personal data or not opening e-mails that comes from the unknown people and whose in the content seems suspicious. One-half of respondents said that they have changed their password in the past year, several times for security reasons, especially due to the increase of security of personal data and financial transactions carried out via the Internet. One-third of respondents said that at least once have received an email that it could be considered as an internet fraud, that they were victims of a potential attempt of identity theft, hacking attempts or potential cyber violence or sexual harassment.

4 THE RIGHT TO PRIVACY AND THE RIGHT TO BE INFORMED

Internet, since the 1970's, transformed the society into three specific areas: privacy, freedom of expression and the free flow of information. Technological progress allows processing, storage, accessibility and transfer of information in any form, regardless of distance, time and quantity. Despite the fact that there is no generally accepted definition of the term 'information society', in the related literature there are three constitutional elements of the information society: information and knowledge; the proliferation of information and communication technologies; access and use of information and communication technologies (Alen, R., 2009, p. 174). Information or information flow is important both from a social as well as the psychological and legal aspects, and on the other hand, the right to public information and the right to privacy are basic human rights guaranteed by both international and national legislation, primarily as constitutional rights.

When we talk about the right to privacy, we need to emphasize that the right to be informed must not affect the right to privacy. Legal regulation of these two rights should lead to their balance and adjustment. In some cases, there is a legitimate interest of the public to have access to certain information and the legitimate interests of the individual to be 'left alone'. In such cases, it is necessary to estimate what principle should be given priority, but in such a way that the second principle affirms to the maximum possible extent.

The past few years, there is considerable debate in the feminist literature about freedom of expression, information published via the Internet and social networks, Internet censorship, as well as on how the Information communication technology (ICT) affects the awareness of women's rights. Information communication is not gender neutral since women are often excluded from the process of technology development and its application because of the cultural prejudices that exist. Better access to information and networking that ICT provides could contribute significantly to the process of economic empowerment of women, on counter fighting patriarchal stereotypes and cyber violence, in order to create a more equitable society.

Therefore, at the 59th session of the United Nations Commission on the Status of Women in the report by APC (Association for Progressive Communication) as the main objectives of the WRC (Women's Rights Program) was highlighted the struggle for women's freedom of speech, the prevention of 'technological violence' against women, counterfeit negative consequences of technological development and media reporting in a way that does not threaten the privacy of women. It was also mentioned that privacy is an important segment in the struggle for women's rights and that censorship of information about sexual health, reproductive rights and violence against women prevents women from exercising the rights guaranteed by international documents.

In the digital world, female privacy is compromised and significantly associated with new and fearsome forms of cyber violence. Female journalists and bloggers are most of all exposed to severe forms of online harassment, which often have sexual and violent character and it is often justified by freedom of speech (Vujnovic, A., 2015). Studies show that in the digital environment female journalist is three times more likely to be targets of very aggressive and insulting comments than their male colleagues (Zikic, B., 2014). As a participant in a public speech and information, in the process of giving their own opinion and attitude, female journalists are often victims of threats, sexual harassment, sexism and cyberstalking, which shows that online communication is a visible trend of gender inequality. Female journalists vividly describe what will happen to them: rape, murder, assault on children and other family members. Emma Watson has received threats that her nude photos would be published immediately after she appeared at the United Nations in the campaign 'His For Her'. British journalist and feminist Caroline Criado-Perez launched a public action for women to appear on British banknotes, after which she was exposed to such online campaign that she had to cancel her Twitter account because she could not bear the vulgar threats that she will be killed, massacred and first of all raped. Azerbaijani female journalist, characterized in cyber media as a 'national traitor', has received similar threats which included a description of the act of rape and the location where she will be buried after she got murdered. (See: Zikic, B., 2014). Threats, offensive comments, aggressive behavior and degradation occur in brutal forms in cyberspace, resulting in their removal from digital space. Therefore, it is very important that social networks take certain measures to prevent these phenomena, but also to build the feminist movement (both offline and online), which will strive to protect the privacy of information and fair media reporting.

5 PROTECTING THE RIGHT TO PRIVACY IN INTERNATIONAL AND NATIONAL DOCUMENTS IN REPUBLIC OF SERBIA

The right to privacy as a fundamental human right has a special significance in the corpus of human rights. The international normative framework of the right to privacy consists of more international instruments: The Universal Declaration of Human Rights (1948), International Covenant on Civil and Political Rights (1966), European Convention on Human Rights - Convention for the Protection of Human Rights and Fundamental Freedoms (Rome, 1950), Convention on the Rights of the Child (1989), Resolution of the Parliamentary Assembly of the Council of Europe (1970), Charter of fundamental rights of the European Union (2000), EU Directive 95/46/EC (1995), Directive of the European Parliament and Council Directive 97/66/EC(1997), Directive on privacy and electronic communications 2002/58/EC (2002).

These documents make a general regulatory framework for the establishment and understanding of the right to privacy, but they differ in the way of application, interpretation and sanctioning. Protecting privacy rights at the international and national level refers to the private sphere of life, family life, home and correspondence, honor and reputation of individuals.

1. *The Universal Declaration of Human Rights* is the first comprehensive document about human rights, with undoubtedly an influence on the later adoption of international conventions on human rights and domestic legal provisions at the national level. Article 12 of the Universal Declaration provides that 'no one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of the law against such interference or attacks'.
2. *The International Covenant on Civil and Political Rights* also contains provisions on the protection of the right to privacy, as in Article 17 provides that 'no one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honor and reputation'.
3. *The European Convention on Human Rights* is the most important international legal document on human rights in the territory of Europe, which, together with its Protocols, establishes the most comprehensive and the most effective system for the protection of human rights and fundamental freedoms. Given that private life is an intimate sphere of life, every individual has the right to live as he wants, to be protected from the public and from the attack on the spiritual and moral integrity, to have the right to establish communication and emotional relationship with other people in order to satisfy the needs and for personal development. Therefore, the Convention as one of the fundamental rights and freedoms provides the right of the individual to respect his/her private and family life, his home and his correspondence, with 'no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others' (article 8). The Convention provided also certain restrictions on the right to privacy, as stated in the Article 8 of the Convention. This defines the scope of private life: the right to respect private life shall be limited to the extent as the individual himself/herself brings his/her private life into contact with the public or in connection with other protected interests. Related guarantees concerning the right to privacy are reflected in the freedom of thought, conscience and religion (article 9) and freedom of expression (article 10).
4. *The Convention on the Rights of the Child* in article 16 provides that 'no child shall be subjected to arbitrary or unlawful interference with his privacy, family, or correspondence, nor to unlawful attacks on his or her honor and reputation'.
5. *The Resolution of the Parliamentary Assembly of the Council of Europe* defines right to privacy as a set of individual rights (live with a minimum impact on the third unauthorized parties that concerns private), family life at home, physical and moral integrity, honor and reputation, libel inadmissibility, unauthorized publication of private photographs, protection from disclosure of information that are part of secret communicated between individuals.
6. *The Charter of fundamental rights of the European Union* in article 8 paragraph 2 stipulates that the data processing needs prior consent of the owner of personal data. This way, the application of these provisions prohibits the social networks to take any action in order to change the purpose and objective of the published information, without the consent of the owner of personal data.
7. *Directives of the European Union.* The European Union has adopted several Directives concerning the protection of privacy through the protection of personal data. The most comprehensive is *Directive 95/46/EC*, as an alternative vision to protect the right to

privacy, particularly through the protection of individuals as consumers, as well as the protection of privacy which is threatened by the economic interests of large corporations and the state. The directive applies to automatically and processing collected data, as well as to data collected by traditional methods that do not require computer processing. Personal data must be collected in accordance with the law and fairly, and should only be used for exactly certain purposes envisaged in the law. The Directive aims to encourage the development of national legislation that would allow proper protection of collected personal data. This construction of the right to privacy, especially emphasizes the protection of the privacy rights due to computer misuse and in the virtual space. The legal application of this directive in practice is very important in cases of violation of the right to privacy on the social networks. Most of these violations are: the lack of unambiguous and explicit consent of the social network user to the data processing and collecting, collecting the data without having given opportunities to users how to respond in case of violation and by setting the privacy option through the Privacy policy option settings, which is often at a very low level of protection and not easily replaceable.

8. When it came to the intensive development of telecommunications and computer procession of personal data, the need occurred to specify the conditions under which personal data can be disposed, stored and distributed (Tomic, N., & Petrovic, D., 2009), so the European Parliament and the Council in 1997 passed the *Directive 97/66 / EC*, and a few years later the *Directive 2002/58 / EC* concerning the processing of personal data and the protection of privacy in the electronic communications sector. This directive was changed in 2009 with the amendments concerning violation of confidentiality of personal data, the use of 'cookies' and the authority of the operators' to take action against broadcasters' unsolicited messages and spamming.
9. *The Anti-Counterfeiting Trade Agreement – ACTA (2011)* represented one of the threats to privacy and the right to free access to information in the cyberspace. The agreement was signed on October 01, 2011, by the following countries: USA, Japan, Canada, Morocco, New Zealand, Singapore and South Korea. The agreement was signed in 2012. by some of the member states of the European Union: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Slovenia, Luxembourg, Malta, Poland, Portugal, Romania, Spain, Sweden and the United Kingdom. Although the aim of this Agreement at first hand was to tighten the fight for the respect of intellectual property rights as well as combating Internet piracy and forgery of any kind, some member states have begun with allegations that this Agreement does violate some of the basic human rights such as the right to privacy, freedom of expression, the right to medical treatment and access to medication and the right to a fair trial (Maletic, V., & Dakic, J., 2012: 774). The final text of the agreement contains provisions relating to the protection of intellectual property rights that could lead to the adoption of inappropriate national legislation in the field of Internet communications and online services, which can seriously endanger the privacy and freedom of expression of Internet users. In particular, the worry was that the provisions of the Agreement could lead to a number of consequences, such as the violation of basic human rights and the rule of law (like forwarding the collected personal data of Internet users to certain institutions without previously issued court decision), non-standard ways of sanctioning that are not in accordance with the rule of law,[1] the suspicion

[1] Article 27 of the Agreement stipulates the obligation of States to support the implementation of criminal and civil sanctions in the Internet environment, which even include the police procedure and punishment outside regular court proceedings, based at the request of private companies that might even implement end execute these sanctions. The agreement, on the other hand, does not provide effective legal remedies for protection in order to protect fundamental human right on a fair trial by the principles of the rule of law.

that there is a mass surveillance of personal data that are not in accordance with the Charter of human rights,[2] the undermining of democracy, fundamental freedoms and the rule of law,[3] the introduction of severe criminal punishments etc. The Agreement caused considerable discussion by the European Parliament, because of the threats to fundamental human rights. The European Union decided to forward this document to the European Court of Justice, in order to declare whether there is indeed a possible violation of civil human rights and that the implementation of this Agreement is in accordance with the fundamental rights and freedoms of the European Union.

10. In the legislation of the Republic of Serbia, different dimensions of the right to privacy are guaranteed by the Constitution of the Republic of Serbia (Ustav Republike Srbije, 2006), Law on Personal Data Protection (Zakon o zastiti podataka o licnosti, 2008), Act on Free Access to Information of Public Importance (Zakon o slobodnom pristupu informacijama od javnog znacaja, 2004), Electronic Communications Act (Zakon o elektronskim komunikacijama, 2010), Public Information and Media Act (Zakon o javnom informisanju i medijima, 2014) and the provisions of the Criminal Code of the Republic of Serbia (Krivicni zakonik Republike Srbije, 2005). All these documents together form the overall regulatory framework for the establishment and understanding of the right to privacy but differ in the way of application, interpretation and sanctioning. Protection of privacy rights at the international and national level refers to the private sphere of life, family life, the inviolability of the home and correspondence, honor and reputation of individuals.
    a. Constitution of the Republic of Serbia *(Ustav Republike Srbije, 2006)* guarantees the right to be informed (article 51), meaning that everyone has the right to be accurate, completely and timely informed about all issues of public importance and that everyone, in accordance with the law, has the right to access information held by the state authorities and organizations entrusted with public authorization. Several articles of the Constitution of the Republic of Serbia are guaranteeing the rights arising from the right to privacy. Privacy encompasses, inter alia, the right to inviolability of the home, the right to secrecy of letters and the protection of personal data. According to the constitutional provisions, the right to inviolability of the home shall be inviolable and no one may, without the written court decision, either enter against the will of the owner or specific permission or search it without a court warrant. The Constitution also guarantees the inviolability of the secrecy of letters and other means of communication, with the exception based only on a court decision (article 41).
    b. Law on Public Information and Media *(Zakon o javnom informisanju i medijima, 2014*) states in article 1 that the public information is accomplished through the media, but that the private information or personal records may not be disclosed without the consent of the person whose private life the information contains, or of the person whose words, image, or voice it contains, if such publication could be harmful to the person's right to privacy or any other constitutional right. Minors are in particular protected by that provision (article 80). This Act has, however, provided a long list of exceptions, which

[2] The agreement requires from the Internet intermediaries to disclose personal data of all those who think they may have done some legal violation, which makes problem for citizens across Europe. Because of this contention, the Agreement is criticized that it gives priority to various state holders, and not to the freedom of speech, privacy and some other fundamental rights. Another criticism is due to the possibility that the agreement may allow monitoring of millions of individuals and internet users, regardless of whether they are under suspicion or not.

[3] The provisions of the Agreement endanger the freedom of speech, the right to privacy and freedom of communication and association, by giving the priority to the protection of the private sector and the implementation of repressive measures aimed at protection of intellectual property, which is in contradiction with the European Convention on Human Rights.

imposes limits on the rights to privacy (article 82).

c. Law on Personal Data Protection *(Zakon o zastiti podataka o licnosti, 2008)* provide the conditions for collection and processing of personal data, the rights of individuals and the protection of the rights of individuals whose data is collected and processed, the restrictions of third unauthorized parties for protection of personal data, the procedure before the competent authority for protecting the personal data, data security, data records, transfer of data out of the Republic of Serbia and supervision over the implementation of this law (Article 1). Article 3 defines the concept of personal data as any information relating to a civilian individual, regardless of the form in which it is expressed (paper, tape, film, electronic media, etc.) at whose order, behalf or benefit the information is stored, the date of the information creation and storage, the way of learning the information (directly, by listening, watching, etc.), or indirectly (through the access to a document containing the information) or regardless of other characteristics of the certain information. The aim of the Act is that, when processing personal data, every individual, regardless of citizenship, race, age, gender, language, religion, political or other opinion, nationality, social origin and status, property, birth, education, social status or other personal characteristics, ensure the realization and protection of the right to privacy and other guaranteed rights and freedoms (article 2). The Act explicitly states that its provisions are not applicable in cases when data are published in the public media and different kind of publications, which lead to conclude that the Act cannot be applied to the protection of users of social networks in the misuse of published personal data by a third party. In article 8, the Act state that data processing is not allowed when an individual has not given clear consent to the processing of data. This way, the Act still leaves the possibility for protection of personal data that have been published and for which there is no explicit consent given by the owner, which is in full compliance with the prohibition of an Article 146 of the Criminal Code of Serbia which sanction unauthorized collection of personal data. The exception can be made only when it is necessary to protect someone's life, health or physical integrity, as well as for the purpose of compliance with legal regulations (article 13).

d. Law on Free Access to Information of Public Importance *(Zakon o slobodnom pristupu informacijama od javnog znacaja, 2004)* provides the right of access to information of public importance held by public authorities, in order to achieve and protect the public interest to be familiar with certain data and to attain a free democratic order and an open society. This Act also establishes the function of the Commissioner for Information of Public Importance, as an autonomous state body whose duty is, among other things, to monitor compliance with the obligations of the authorities regarding the collecting the information of public interest and to give reports to the public and the National Assembly.

e. Law on Electronic Communications *(Zakon o elektronskim komunikacijama, 2010)* defines a series of concepts that relate to electronic communications (‘Definitions’, article 4). The Act set up a number of provisions regulating the issue of privacy, personal data in electronic communications, delivering data and the protection of confidentiality, security and integrity of public electronic communications networks and services, confidentiality of electronic communications, lawful interception and data retention.

f. Criminal Code of the Republic of Serbia *(Krivicni zakonik Republike Srbije, 2005)* incriminates every violation of privacy rights done by the authorities, other individuals and institutions, including the mass communication. In all criminal acts and offenses, the target of a criminal act may vary (an apartment, room, person, letter, shipment, file, photo, a computer), but the object of protection is the same – the privacy. Legal protection of the right to privacy is a subsidiary in its nature, which means that in most cases it applies only when privacy protection cannot be achieved by any other means. Criminal Code specifies the protection of privacy rights by providing certain legal measures which

protect the following rights: (1) the privacy of belief and religion (violations of freedom of religion and performance of religious rituals - article 131); (2) the privacy of home (violation of principle of the inviolability - article 139, unlawful search - article 140); (3) personal data (unauthorized disclosure of secrets - article 141, unauthorized collection of personal information - article 146, disclosure of business secrets - article 240, unauthorized access to a protected computer, computer network and electronic data processing - article 302, violation of proceedings confidentiality – article 337, disclosure of business secrets – article 369); (4) the privacy of letters and personal correspondence (violation of the secrecy of correspondence and other items - article 142); (5) the privacy of personal conversation (unauthorized wiretapping and recording - article 143); (6) the privacy of personal character and personal life (unauthorized photographing – article 144, unauthorized publication and presentation of someone else's file, portrait and images – article 143); (7) personal honor and reputation (an insult - article 170); and (8) the privacy of family life (disclosure of personal and family matters - article 172).

6 CONCLUSIONS

The principle of controlled disclosure of personal information is the best way to protect the privacy of all Internet users. Users who want to protect their privacy, even more, could try to achieve complete Internet anonymity - to use the Internet without giving an unauthorized person the possibility to connect to someone's Internet activities involving its personal identity. 'Posts' on social networks and published personal information could be harmful to privacy of the individual because the information (blogs, images and web pages) that were once posted on the Internet last forever and can not be removed from the virtual space.

Being that computer crime has become a transnational problem triggering impacts that reach far beyond the borders of any singular country and go deeply into the cyberspace, it is clear that the mechanisms to counter fight this type of crime should not merely focus on the changes in national criminal law legislation, but should also involve undertaking appropriate technical, structural and educational measures (Vilic, V., 2015), as well as adoption of relevant international technical and legal instruments and ways of raising awareness regarding importance of the information that can potentially generate a risk for the emergence of computer misuse activities.

According to all of the mentioned above, it has become obvious that the protection of the privacy of the internet users and the security of information and communication technologies are not solely a problem of guaranteed human rights and freedoms, but it also represents a serious socioeconomic, political and security issue for each national legislation. Clearly, addressing privacy and security issues in electronic communications requires a comprehensive approach, involving a wide range of stakeholders that must match many, often different needs and interests. Considering the development of the legislation of the European Union, together with the national legislation of the member states, Republic of Serbia has made a major shift in the past 12 years, but it still has a lot of European standards for the protection of privacy and security of information and communication technologies to deliver and to meet.

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AN ANALYSIS OF THE SUPPLY CURVE: DOES IT DEPICT HOMOGENEITY AMONG ITS CONSTITUENT ELEMENTS? ANOTHER REJOINDER TO NOZICK.

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Abstract:

The supply curve embodies prices and quantities offered for sale of a good. But need each element of this supply be interchangeable? If so, then the person to whom the supply curve applies much necessarily be indifferent among all of these homogeneous components of the supply curve. However, Austrian economists reject the notion of indifference. Must they then jettison one of the most basic elements of economics, the supply curve? In this paper, we aver that the supply curve presupposes the notion of the same good and we approximate 'the same good' in steps. First, we delve into the concept of a good as such and only then do we consider what an economic good is, the latter being a proper subset of the former. Eventually, we order the set of economic goods by the relation of sameness, thus arriving at non-overlapping equivalence classes with their respective elements being the same goods. Equipped with this framework, we ultimately try to resist the Nozick's challenge.

Keywords: *Supply curve; indifference; Austrian economics*

1 INTRODUCTION

Nozick (1977) offered a challenge to Austrian economics. On the one hand, he averred, they reject the notion of indifference.[1] On the other hand, they, as in the case of virtually all

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[1] This cannot be denied. For example, Barnett, 2003; Block, 1980, 1999, 2003, 2007, 2009A, 2009B, Block and Barnett, 2010; Hoppe, 2005, 2009; Hudik, 2011; Hulsmann, 1999; Machaj, 2007; O'Neill, 2010.

economists, not only accept the concept of the supply curve but, as in the case of most others, positively revel in it; enthusiastically utilize it in their analysis.[2]

Block (1980) attempted to reconcile the seemingly irreconcilable; namely defending the Austrian support of the concept of supply, and, also, upholding its rejection of indifference.[3] He argued that we can make sense of equally serviceable goods but only prior to human action, thus saving the notion of strict preference when it comes to action and preserving the idea of homogeneity by moving it into the realm of thymology.

The present paper is an attempt to revisit this issue in the light of the literature engendered by these two articles. In section 1 we probe the notion of a good as such and of an economic good in particular. In section 2 we explain why the notion of the same good must be necessarily prior to an action. In section 3 we order the set of economic goods by the relation of *sameness*, therefore obtaining the equivalence classes whose respective elements are *the same economic goods*. In section 4, we demonstrate how to adjust the idea of a *unit* to do full justice to the law of diminishing marginal utility and obviate any confusion. In section 5, we try to face Nozick's challenge. We conclude with section 6.

2 A GOOD AND AN ECONOMIC GOOD

First and foremost, to approximate the notion of *the same good*, we should first get clear on what goods as such are and then delineate its subspecies, that is, economic goods. In this respect, we cannot do any better than use the Mengerian (2007) incisive analysis of goods and economic goods.

Menger (2007, p.52) understands goods as things distinguished by four necessary properties, all of them in combination amounting to a sufficient one. The extensive quote would come in handy:

"If a thing is to become a good, or in other words, if it is to acquire goods-character, all four of the following prerequisites must be simultaneously present:

1 A human need
2 Such properties as render the thing capable of being brought into a causal connection with the satisfaction of this need.
3 Human knowledge of this causal connection.
4 Command of the thing sufficient to direct it to the satisfaction of this need."

Menger (pp. 52 – 53) then goes on to say that the absence of even one of the above-stated properties would result in the thing losing its goods-character. After all, as identified above, all of the four properties are necessary conditions for an item to be a good. And, the second and third of these causal-realist conditions will prove vital in our forthcoming analysis. It will allow us to filter out any false beliefs on the part of economic actors as to certain apparent goods serving illusory ends.[4] For example, if an economic actor attributes to his scooter the ability to fly him to the moon, then at least with respect to this end, the scooter does not have a character of a good merely because condition 2 is not met.

Second[5], to understand what an economic good is, we should try to understand the concept against the background of the set of goods as such. Not surprisingly, we are treating the qualifier

[2] This contention is so obviously true, we do not feel the need for any support of it

[3] Hoppe (2005, 2009) maintains that Block's (1980) effort was a failure; he offered what he considered a better refutation of Nozick (1977). Block (2009A) and Block and Barnett (2010) responded to Hoppe (2005, 2009).

[4] It should be noted that Menger's four conditions are not fully logically independent of each other. It is enough, however, to focus on conditions 2 and 3 for our purposes. It can certainly be the case that there is an objective causal law that makes a thing capable of satisfying a given human need. On the other hand, 3 presupposes 2. Human knowledge, being *factual (*and the phrase 'to know' is a *factive* transitive verb) presupposes 2. That is, there cannot be human knowledge of a causal link without this very causal link obtaining independently of human knowledge.

[5] Trivially, we could approximate the notion of *the same economic good* via the reversed order: first, from the notion of *a good*, we can derive *the same good*, as equivalence classes obtained by the relation of *sameness* ordering the set of goods. Then, *the same economic good* would be only those classes of *the same good,* where the utility of each unit is still more than zero.

"economic" as *differentia specificae* of goods. This will allow us to distinguish economic goods from non-economic ones. As it will transpire, our distinction, adopted after Menger (2007), will also shed some light on the problem of indifference. To carve out the subset of economic goods from the set of goods, we pick up the Mengerian criterion of *how satisfactory* a given stock of goods is relative to human needs. Let us quote Menger (200, p. 95) at length:

"[…] wherever men recognize that the requirements for a good are greater than its available quantity – they achieve the further insight that no part of the available quantity, in any way practically significant, may lose its useful properties or be removed from human control without causing some concrete human needs, previously provided for, to remain unsatisfied, or without causing these needs now to be satisfied less completely than before."

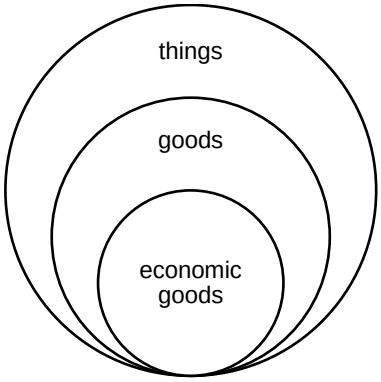

Fig. 1 Venn diagram: the relation between things, goods and economic goods

To put this in other words, a good remains an economic good when its marginal utility is greater than zero. This means that the good is able to satisfy some other human need or satisfy more completely the need previously attended to. By the same token, we can deduce that a good is not an economic one when its marginal utility is literally zero[6]; that is, as we have more and more of it, it eventually ceases to satisfy any human need at all; or, to use Mengerian language – the stock of the good in question, relative to human needs is too large (e.g. air).[7] The Venn diagram (Fig. 1) illustrates what has been said so far about the relation of our fundamental concepts.

Finally, a few words of explanation are due. First of all, Mengerian necessary condition 1 for a thing to become a good is, as we remember, 'human need'. What may arouse confusion is the question: 'but whose need?' Because of a good, in general, is neutral between its economic and non-economic aspect, we stipulate the following two definitions:

Definition 1:

A good is a thing such that there is at least *one person* for whom this good *would at least potentially* satisfy at least one *need*, the person (correctly) realizing how to employ (obeying physical causal laws) the said good to satisfy the said need.

This stipulative definition rightly abstracts from the question of whether the marginal unit of the said good is of some positive value or equals zero[8].

What is more, the "at least potentially" caveat used above is very important indeed for, intuitively speaking, air is a good although it is a non-economic one. However, the marginal unit of air *at least potentially satisfies at least one human need.* After all, it does not take much to imagine that air can be so polluted that it is sold or rationed or whatever.[9] Then, the utility of the marginal unit of air would be definitely positive and the previously non-economic good would acquire the character of an economic good. What is more, "at least potentially" makes sense of the fact that all economic goods are goods. It might seem that classifying economic goods as goods on our grounds looks like a category mistake. But it is not because of "at least potentially" caveat once

[6] Or less. There is, after all, such a thing as a garbage "good," or a superfluity. For example, when we continually add apples to our larder, after a while, we reach a point when we would be willing to pay someone to take some of them away, lest we have no room in our home for anything else.

[7] A common objection to this example is that we do not have enough *clean* air. But this does not counter our point. On Mars, or the Moon, or beneath the sea, the air of which we speak does not exist at all, clean or not.

[8] What our definition of a good rightly excludes is marginal utility below zero because then we would be speaking of a bad.

[9] But, again, in this case there would be no shortage of *air.* Rather, there would be the presence of pollutants, an entirely different matter.

again. At least potentially predicts that it may be also "actually". And when economic goods (see: next definition) are actual, they may be justifiably classified as goods too.

By the same token, we arrive at the definition of an economic good.

Definition 2:

An economic good is such a good that there is *at least one person* for whom this good would satisfy *at least one need* and the marginal utility of the said good is above zero (in other words, the stock of this good is relatively scarce given the said actor's needs).

We should finally note that both a good as such and an economic good, in particular, are always relative to a given economic actor. It is a trite to say that one man's meat is another man's poison, but our proviso makes sense of this proverb. After all, a given item (or a scarce resource) may satisfy some need of person A but fail to satisfy any need of person B. In our analysis, we will keep the economic actor constant so as to avoid an absurd conclusion that something is an economic good and is not at the same time (or it is at the same time an economic bad, horror).

Armed with this conceptual framework, we are ready to probe the notion of the same good in the next and next-but-one section.

3 WHY IS HOMOGENEITY LOGICALLY PRIOR TO THE LAW OF DIMINISHING MARGINAL UTILITY?

Machaj (2007, p. 231) starts off on the right foot in his abstract by explicitly saying that his task is "[…] to explain the concept of homogeneity, the basis for the law of diminishing marginal utility". The concept of homogeneity (or, equivalently, the same good) must be prior to the law of diminishing marginal utility because this law assumes it. That is, this law applies only when it considers homogeneous *units of the same good.* What is more, the relation between human action and homogeneity is very complex indeed. This is because of the fact that a person treating homogenous units of a given commodity as the same good cannot ever demonstrate this in action. For example, let us imagine the following series of actual human choices. First, an actor picks up the first unit of commodity A; second, he does so with some other unit of commodity B etc. From this alone, we cannot draw the inference that commodity A is the same as commodity B[10] and that the actor employed two successive units of the same good and employed them to different purposes. It might be the case that he was economizing two distinct goods according to his value scale; that is, he made use of good A to satisfy his most pressing need first and only then did he employ good B to satisfy his less pressing need. Therefore, human action alone cannot instruct us as to whether the actor was acting on the same good or not while making choices.

Moreover, we know that inaction all goods are necessarily heterogeneous even though they seem (and even *are* for that matter) physically homogeneous.[11] The above is simply true *ex definitione* – what was picked up (or what was chosen) is strictly preferred because this is simply the way we understand preference, that is something that is demonstrated by a particular choice. After all, the action is all about picking up something and setting aside something else.[12] So,

[10] Or that it is not

[11] Apart from location, which is necessarily distinct, a chemist would not be able to determine any difference between them.

[12] As Wysocki (unpublished) argued, the *domain of choice* are particular action-tokens. Action-tokens are particular instantiations of action-types. The former relates to the latter as going to the cinema C at the time T relates to going to cinema in general. The latter, truth be told, is on the other hand, an intentionally and psychologically sound description of the actor's intention as envisaged by him prior to an action. The former, on the other hand, is praxeological through-and-through and is concerned with what choice was eventually demonstrated by action itself. Furthermore, understanding choice as preferring a particular action-token to any other ones available allows us to explain away all the misconceptions about indifference e.g. why did Block (2009A) pay for his purchase with this particular note (notes being physically identical) for this particular sweater (sweaters being assumed to be physically identical too) of Hoppe's. The answer is now straightforward: as long as we act, we choose all those details; after all, it is an action-token (a particular state of affairs) that is brought about by an actor and not some generic state of affairs (as envisaged by a human actor in his mind's eye). Finally, with choice thus conceived,

it is impossible in principle to conclude from the action, based on strictly preferred choices, about the apparent homogeneity of the prior-to-the-action goods.

It must be borne in mind that when it comes to actions (particular action-tokens) geography (specific locations of the good) is very relevant indeed. It is physically impossible[13] for different physically identical resources to occupy exactly the same spot in space. Therefore, the location of a resource must be critical *especially* when homogenous goods are in question. So, there is always some reason, at the very minimum a location, that could account for any particular choice. Still, prior to the action physical sameness implies the same serviceability – a point to which we will turn our attention in the next section.

Summarizing, the same good is a concept which is clearly prior to any action. Therefore, it belongs in the category of transcendental concepts– it provides us with a way of construing human agency and it cannot by any means be inferred from the data of particular human acts. In other words, the notion of the same good gives us *Bedingung der Möglichkeit* for formulating the law of diminishing marginal utility. It is due to the concept of the same good (not being manifested in action itself) that we can better make sense of human action. The same is true about the concept of human purpose. After all, human purpose does not manifest itself in human action. The former is rather assumed *a priori* to make sense of the latter.

4 THE SAME ECONOMIC GOOD

Having probed the notion of an economic good, it is high time to make an attempt to clarify the concept of the same economic good. What we should continuously keep in mind is the fact that we cannot infer the idea of the same good from the action itself. Human action would always leave us in the dark as to whether an economic actor was economizing the successive units of the same commodity or of distinct ones.

Sameness is an equivalence relation, that is it is:

a. reflexive
b. symmetrical
c. transitive,

When this relation operates with regard to all economic goods, it exhaustively divides the entire category thereof into pair-wise disjunctive classes. In other words, if we allow economic goods be ordered by the *sameness* relation, we will eventually end up with non-overlapping sets, where all the elements of a given set are considered *the same good* and any two elements belonging to different sets are not. But what is the criterion for sameness; or, what is it about two economic goods that make them the same economic goods?

Our thesis is that physical sameness is a sufficient condition for two economic goods to be the same economic goods *because* physically identical economic goods necessarily serve the same *list of* (correctly perceived)[14] *ends*. We view this criterion as a definite improvement over Machaj's (2007, p. 236) contention that: "We recognize some things as "supplies" because we realized they could *serve the same end*". We claim that Machaj's grain of analysis is too crude to capture the concept of the same good. For let us imagine that an economic actor is confronted with a car and a scooter. Obviously, the two serve some common ends. Yet, unless the actor is blinded to the non-overlapping ends both serve, he would *falsely* treat them as the same economic goods. If an

there is a very interesting corollary, that is Epstein's (1973) theory of strict liability

[13] It is also logically impossible for two things to occupy the same space. If they seemingly do, for example, Poland has more than one car, we say that Poland is too big a space. Similarly, there are more than two cars in Warsaw, which is subject to the same objection: that is not the kind of space we are talking about. What kind of space, then, are we talking about? That kind in which two things cannot both fit.

[14] We hesitate to say that, but it can be the case that this "correctly perceived" scenario is not necessary at all. For it is hard to imagine that as long as an actor values a unit of commodity A (that is, he treats it as an economic good) that when he notices another physically identical unit, he would regard it as a different economic good (always abstracting from geographical location). We claim that he would promptly realize they must serve the same ends due to their identical physical constitution. Obviously, an actor can be unaware of multiple uses a given economic good may be put to; after all, inventions still occur, and, hopefully, will never cease.

actor's crudely described end is to travel from A to B without specifying either the velocity of the travel or the overall comfort thereof, can these two (with a huge stretch of the imagination) be considered two units of the same good? Continuing with this larger than life scenario, it could be even maintained that such an actor would economize the two along the lines of the law of diminishing marginal utility. Yet, why bother with such fancy scenarios? We assume (and quite correctly) that different physical conditions would translate into different economic goods because any reasonable actor could *correctly* attribute at least a few non-overlapping services the respective economic goods could possibly render.

Summarizing, Machaj's identification of the same good by referring to the fact it can possibly serve *the same end* (it is clear, that Machaj means *one* end) cannot do. First, it is feasible that two physically distinct goods may serve *one and the same end* but apart from this they differ in serviceability dramatically; that is, *one and the same end* is the only overlapping element in two sets of their respective serviceability. For instance, one can lay a book on both a brick (a sufficiently large one) and on a table. Yet, the two would obviously serve dozens of non-overlapping ends[15] and therefore, we cannot see any reason to treat them as homogenous. What probably led Machaj astray is his not finely-grained description of a person's end. Of course, one can mentally frame one's end as traveling from A to B but when it comes to comfort, efficiency etc., two distinct means (say, a car and a scooter) would be valued differentially, thus accounting for their respective statuses as distinct goods. To reduce this to absurdity, at the most general level of description (some means serving some end), everything is everything else. In other words, there is such a vague and general level of description (say, removing any discomfort, however infinitesimally) from which all goods would be homogenous – a most unwelcome conclusion.[16]

5 SYNERGY PROBLEM – HOW TO CALIBRATE A UNIT OF THE SAME GOOD

Our relatively simple criterion calls for one adjustment. Once the definition of the same good has been sharpened, we can successfully reply to the criticism leveled by Nozick (1977). He appeals to the fact that, psychologically speaking, units employed later on may prove to be of greater utility than the ones employed earlier. As Block (1980, p.425) puts it: "In the psychological view with which Nozick seems to agree, marginal utility need not always diminish with command over increased units of the commodity. There can actually be a realm of increasing marginal utility with extra units, perhaps because the additional units allow the actor to do things that were not possible with fewer, or because it takes a few units before he can really begin to enjoy the commodity. ('The second sip of beer tastes better than the first.') The problem with this, of course, is that it would imply that when forced to give up one unit of a commodity, the actor would choose to give up that unit which affords him more satisfaction than those that remain, a manifest impossibility."

Certainly, we do not have to take any heed of the possibility that the second beer may taste better *ex-post*. This is definitely true but is not part and parcel of praxeology. *Ex post* statements can constitute a proper field of study for psychology with all its contingencies[17] but these are of no interest to Austrian economics and are not scrutinized here.

A problem starts to emerge when we realize that a given actor may know that an end that one beer cannot serve can be achieved with a little help from the second beer. Let us consider an example.[18] An actor correctly believes that the first beer will make him tipsy, whereas the second one will make him drunk. As it happens, the actor's value scale is as follows:

[15] We assume (not unreasonably) that these non-overlapping ends are readily noticeable by any almost any ordinary human being.

[16] What is worse, then the predicate *the same good* would be empty for there are would be no two goods that could be said to be distinct, so why use the predicate in the first place?

[17] It is necessarily true that both parties of a voluntary trade gain in the *ex-ante* sense. Whether they also gain *ex post* is an empirical issue and neither the answer 'yes' or 'no' is apodictically true.

[18] This example we owe to Lukasz Dominiak.

1. get drunk
2. get tipsy

Therefore, there is an end served only by *two beers in combination* that is not attained by any individual tipple of this beverage. As it happens, this goal is valued higher than any end that a single beer can serve. This example is interesting since it is not a vague *ex-post* psychological statement. Instead, it directly refers to possibilities of behaviors of which the actor is acutely aware. He correctly believes that the second beer[19], when drunk, is going to be of greater avail than the first one, merely because it is only after drinking the second that he will get drunk, his highest priority. It may seem that, paradoxically enough, the second beer is valued more than the first beer. Is the law of diminishing marginal utility thereby falsified? Of course not! We claim that whenever there is a collection of physically identical units and there is such a number of n units that the n^{th} unit, after n-1 units were already put to use, yields such an over-and-above service that any n-1, n-2 …1 collection of those is unable to render, then the marginal unit should be defined as n-element collection of physically homogenous items.[20] Then, in our case, a marginal unit should be now defined as two beers. Then the law of diminishing marginal utility works perfectly. The first pair of beers would be valued higher than the second, and that higher than the third etc.

To recapitulate, paradoxically enough, having *two* physical cans of beer, we can arrange them into *three* specimens of two *kinds* of economic goods.

a. 1 beer – 2 specimens
b. 1 pair of beer- 1 specimen[21]

It shows that arranging economic goods into equivalence classes does not run along physical lines because of the synergy effect, as we label it.

Incidentally, we would be even ready to make a prediction. Let us imagine that semi alcohol prohibition takes place in the United States and one is able to buy only one beer per ~~a~~ day (for whatever complicated reason[22]). Because one cannot possibly get drunk drinking one beer a day, we predict that any economic actor instantiating the preceding value scale (which is, incidentally, not uncommon) would be ready to pay for a 2-beer package more than he would be ready to pay for two separate beers – *ceteris paribus* holding

6 FACING NOZICK'S CHALLENGE AND REPLYING TO MACHAJ YET AGAIN

Nowhere else in Nozick's (1997) criticism of the Austrian position on indifference and homogeneity does he put as expressly as in his footnote 30 (1997, p. 390), where that philosopher analyses Mises's view on the issues scrutinized in the present paper. It merits an extensive quote:

"However, on p.122 he [Mises] says, "All parts – units – of the available stock are considered as

[19] The ordinal numbers employed here are marked by temporal dimensional and do not refer to any numerical identities. In other words, the first beer refers to the one that happened to be drunk first, and the second to the one after that. The glasses of this liquid would be interchangeable as far as we are now concerned.

[20] Rothbard (2004, p. 73 – 74) defines what counts as a *unit of a good*. He avers: "For example, it is erroneous to argue as follows: Eggs are the good in question. It is possible that a man needs four eggs to bake a cake. In that case, the second egg may be used for a less urgent use than the first egg, and the third egg for a less urgent use than the second. However, since the fourth egg allows a cake to be produced that would not otherwise be available, the marginal utility of the fourth egg is greater than that of the third egg. This argument neglects the fact that a "good" is not the physical material, but any material whatever of which the units will constitute an equally serviceable supply. Since the fourth egg is not equally serviceable and interchangeable with the first egg, the two eggs are not units of the same supply, and therefore the law of marginal utility does not apply to this case at all. To treat eggs in this case as homogeneous units of one good, it would be necessary to consider each set of four eggs as a unit."

[21] There are two kinds of goods in this example but three tokens. Each single beer counts as two tokens because we have two of them and we have a pair of beer units, which constitutes a separate good. And how many specimens of two beers do we have? One! Thus, we have two specimens. If we ignore the specimens there are two kinds of goods here.

[22] As was pointed out to us by always insightful Lukasz Dominiak, for this example to work, we must also assume that this actor has a high-time preference and he does not accumulate beer for at least two days so as to be able to get drunk. He prefers getting tipsy immediately to getting drunk tomorrow.

equally useful and valuable if the problem of giving up one of them is raised." Here, then, we do have indifference. Yet a choice will be made, perhaps at random. One particular object will be given up. Yet, the person does not prefer giving up this one to giving up another one. Therefore, choice entails (at best) weak preference; it does not entail strong preference."

Let us now attempt to dismantle this ingenious excerpt from Nozick and thus try to defend our own position. What needs stressing again is the fact that indifference as such is not anathema to us; indifference apparently manifested in a particular choice is![23] So, can we reconcile the strict-preference view with the homogeneous stock of good (the same goods), the latter of which means nothing else but that the units of the said good are equally serviceable (or are able to satisfy the same list of ends of a given actor). We do believe that we can have our cake and eat it too.

As stated above, action by its very nature cannot demonstrate that an actor is choosing between the units of the same good for the very simple reason that action always demonstrates strict preference. Thus, any inference from the action itself to the homogeneity of the means (goods) employed therein is invalid. Therefore, homogeneity must be defined prior to any action. So, yes, we concur with Nozick – "we do have indifference"; but, not when it comes to an actual choice. We have indifference in the concept of supply but as we argued above, supply and homogeneity are transcendental notions which cannot be observed in action (they rather illuminate action). Then again, as for Nozick's "Yet, the person does not prefer giving up this one to giving up another one", we do not side with him on this at all. Just the opposite: the person *does* prefer this unit over any other simply because he did pick it. It is because Austrians understand preference not psychologically but praxeologically; It is demonstrated in action, in an act of a particular choice. Thus, the Nozickian entailment fails. Not only we do not have a weak preference, but also, we can successfully defend strong preference.

It is for the same reason that Machaj's (2007, p. 232) incisive example concerning the wedding ring actually fails and does not undermine our position at all. Machaj expressed his case against our physical definition as follows:

"Austrian tradition, however, teaches us that the merit of being a good is not derived from the physical nature of a thing, but rather from the human attitude towards scarce resources. This means that two goods may have perfectly identical structure, but can be treated by human beings in a radically different way. Take the example of a wedding ring. The ring that is given to a girl by her fiancé has a much greater value than the exact same ring when it is given to her by a total stranger on the street. Although physically these two rings might be homogenous, they definitely will be treated as heterogeneous goods. Obviously, then, physical properties of scarce resources cannot be the source of defining homogeneity, if we are to speak of human action and valuation."

We find the above passage slightly confused and confusing. First of all, the contention that these two homogenous rings will be treated as heterogeneous goods is indubitably correct. What is more, this is fully compatible with our own position. To stress it yet again, in action all goods are heterogeneous because a particular unit is picked up (thus showing the strict preference for it) and another is set aside. This is what action necessarily consists of. The apparent wedding-ring counterexample misfires so far. Because homogeneity can be defined only as *prior* to action, it obviously cannot be demonstrated *during* the action. What, then, prevents Machaj from defining homogeneity as physical sameness? It is obviously true that the wedding ring already offered to the girl by her fiancé does not meet the definition of homogeneity, prior to an action. After all, one particular ring was acted upon already. The same applies in the case of a ring given by a

[23] There is yet another sense in which we fully accept the notion of indifference: in ordinary language. That word has an entirely valid function to play in everyday discourse. We know full well what it means when someone employs it. Our only objection to it is as a matter of technical economics. A similar situation prevails in physics with "work." Technically, it is force times distance. But, if someone holds two twenty-pound weights still, with arms extended, he will be dripping with sweat within a very few minutes. In everyday speech, he will be "working" and "working" very hard indeed. And, yet, in the technical language of physics, for as long as these bar bells do not move, no "work" will be taking place.

complete stranger to the very same girl. For a succinct remedy and a clear exposition of homogeneity as physical sameness, let us quote Block's (2009, p. 67) comment on wedding-ring thought experiment:

"Machaj is, of course, correct in claiming that the girl is not at all likely to view two wedding rings as a part of the same supply, the one offered her by her beloved fiancé, the other by the stranger in the street. […] In order to make the case for a thymological or physical definition of supply, consider not those two wedding rings, the one imbued with sentimental value, the other not. Instead, look at the couple at the jeweler's store, before any of the wedding rings is chosen by the fiancé. Here, we have a true supply of wedding rings, dozens of them we may suppose, all of them physically indistinguishable from one another. There is no doubt that the law of diminishing marginal utility holds in the case. The first of these rings is of a greater value than the second, etc."

This hits the nail on the head. Homogeneity is defined as a physical identity but the equal serviceability of the units of the same good *cannot be demonstrated in action*. It is necessarily true that only one particular ring will be eventually picked up, thus showing the actor's strict preference for the chosen unit. So, no contradiction arises. Those weddings rings are equally serviceable prior to the act of choice and this is what makes them a supply of the same good *before* an actual choice is made.

Let us consider two thought experiments to put our position as clearly as possible. The first one is only a slight variation on Block's (2009) jewelry store scenario. Let us imagine that an actor is contemplating which particular ring to buy. They seem physically identical to him and he quickly realizes that they must (due to their same inherent properties) be able to satisfy the same ends anyone can possibly have. He remains indecisive until he hears a voice saying that it must be the one in the middle. So, he promptly picks up the one recommended by the strange voice in his head. This accounts psychologically for a praxeologically undeniable fact that once he picked up a particular ring, there must have a reason for his strict preference. Now the question arises: does the occurrence of the voice invalidate the prior homogeneity of the goods? Of course not. How could something as bizarre and accidental as a strange voice have any bearing on the concept of supply? The fact that the voice occurred (at least in the actor's head) does not retrospectively invalidate the fact that the units the actor was choosing among were the units of the same supply prior to his actual choice. On the other hand, the said strange voice undoubtedly had a bearing on a particular choice of our protagonist.

The second variation on Block's case is this: let us now divide the stock of wedding rings into two equal groups. One part remains where it was (and where the actor still is), while the other is transported to the store 10 miles away. Are these two sub-stocks still homogenous with each other (except, of course, for location)? Our theory would say 'yes'. Can an actor demonstrate this fact? The answer is now 'no'. He will most likely pick up a ring from the store he is now in; it is far more convenient.[24] What is more, he cannot even demonstrate that these units in the local establishment are the units of the same good because he will necessarily pick up a particular one, inescapably, once again, demonstrating strict preference. Yet, having assumed this definition of homogenous goods, the law of diminishing marginal utility functions without a hitch. As Block (2009, p. 63) had it: "Even if we assume polygamy, we reach the same conclusion. If the man contemplates marrying four different women, he will give the first of these rings to his favorite wife, the second to the second, etc."

The successive units of the same good will be necessarily employed in such a way that the needs they satisfy will be of lower and lower importance. Still, it is also true that once a given unit was chosen, this very unit (for whatever reason – even fancy ones count, as observed above in our first thought experiment) was strictly preferred to all the others. There is thus no contradiction in our position.

[24] However, we cannot rule out the possibility that he wishes to stretch his legs, and thus prefers a ring requiring a 10-mile trip to the other store.

7 CONCLUSION

We are very grateful to Nozick and Machaj. Without their contributions, the Austrian understanding of the supply curve, indifference, homogeneity, would be far weaker than it now is. We cannot see our way clear to fully agreeing with either of these eminent scholars, but we readily and thankfully acknowledge that they have pushed the envelope in our own understanding of these concepts.

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MANAGER COMPETENCE IN THE PRACTICE OF MILITARY MANAGERS - COMMANDERS

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Abstract

The authors highlight the basic approaches to the current modern education of managers in the military environment using managerial competencies of military managers as military commanders of units. In these turbulent time, the interest in the issue related to competences in the military environment has been growing. Continuous organizational changes and frequent transformations in the field of security lead to unpredictable reactions of people, particularly regarding relationship building in military organizations. This leads to the growth of uncertainty and inappropriate responses of people to existing problems. This is primarily related to the personality of a man - commander as well as to his specific behavior. The use of human and intellectual capital, which represents the basis for prosperous organizations, has been increasingly highlighted. The key combat element of the Armed Forces is well – trained personnel. The Slovak Republic has undertaken that the Slovak Armed Forces will have personnel of such quality that will be comparable to the quality level of other NATO member countries and the EU countries. Based on the practical experience of the authors of the Department of Management of the Armed Forces Academy (AFA) of General M.R. Stefanik in Liptovsky Mikulas, educational courses aimed at the development of managerial competencies have been implemented in the context of career education within the AFA.

Keywords: *key competencies, military managers, training, professional soldier, career, education, development, subordination*

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1 INTRODUCTION

We are witnessing an enormous increase in successful organizations and the increased interest of other organizations in new inspiration

and creativity, which they are grateful for their success.

It is mostly related to managerial competencies and managerial experience in the area of leadership. Nowadays, the concept of managerial competencies (Kubes, M., et al, 2004) is quite well known, which we are beginning to apply also in terms of armed SR.

In relation to the military environment, the concepts of manager are increasingly used as a commander, managerial competencies, managerial procedures, and so on. Not surprisingly, because the manager's function in the organization and the unit's commander have many in common, even a few experts share the view that the manager's and commander's functions are identifiable. Finally, when analyzing the functions of a manager, we can associate his / her characteristics with the following: "... a professional management officer who conducts activities to concentrate human and material resources on their coordination in space and time so as to achieve the goals of the institution, to implement a specific project" (Czirak. P. 2004).

In the past, the commander has been guided entirely by other management practices, and now heavily relies on modern management practices that the OS SR gradually applies to their systems, just like controlling or outsourcing. From a strictly authoritative level, it moves forward to participatory management. The commander is required to command, decide, organize, plan, and control at his command and command level. Clearly here we see the merging of managers and commanders. Experts until the end of the 20th century. revealed that the environment requires highly-prepared, managerial thinkers of military professionals who can effectively use limited resources.

2 IDENTIFICATION OF MANAGERIAL COMPETENCIES IN THE MILITARY FIELD

There are military professionals working in the Slovak Republic in various positions. Other competencies are required from the commander and other personnel. It would be mistaken to think that it is enough to create one competency model for the whole SR. In military practice, we are confronted with the fact that the unit commanders who went to the staff function often had great difficulty adapting and fulfilling completely new types of tasks, and so was otherwise. The staff functions need to have developed organizational talent, know how to plan at the operational level, and manage the burden of working with documentation and regulations (Brezula, J. 2017).

Commanders again need to take responsibility for other members of the unit, social competences, natural authority and rapid decision making. The features and traits of successful managers are now known. Pedler et al. even up to eleven: an overview of the underlying facts, the necessary professional knowledge, non-sensitivity, analytical skills, problem solving and decision-making, learning, social skills and abilities, emotional adaptability, proactivity, creativity, mental arousal, balanced learning habits and skills, self-education (Armstrong, M., 2006).

Even though these are managerial competencies identified by successful managers of civil organizations, they are applicable to the armed SR. They are even competencies that are transferable to the civilian sphere in the event of termination of service and therefore professional soldiers should be motivated.

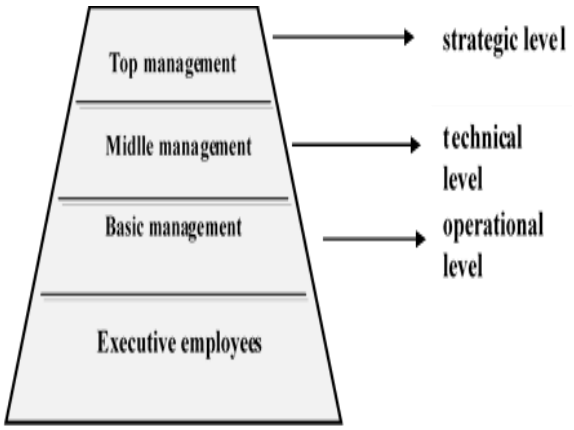

Fig. 1 The Pyramid of Control
(Source: Cimbalnikova 2004, p.16)

In his work, M. Armstrong (2006) supplemented his theory of managerial competencies with his opinion R. Stewart, which gives several key competencies to characterize successful managers: willingness to work hard, endurance and determination, willingness to risk, the ability to create enthusiasm, toughness. These features and capabilities also serve to guide the leader.

The commander must act as a leader in his position. However, many people automatically associate the leader with the concept of a leader. The leader is not the same as a manager. Being a manager does not mean to be a leader! The captain's function is guaranteed by the commander, as he carries out basic management functions - planning, management, organization, and control.

In the literature, we then often meet with the view that a leader is more than a manager because the leader has a vision and pulls the organization forward. Current problems in selecting professional soldiers as Commanders:

1. The commander can come out with people, but is inexperienced on a professional site,
2. The commander is an excellent expert on the issue but cannot lead his subordinates who do not respect or even fight him,
3. The commander is an expert in his field who knows how to work with people but cannot manage himself (self-regulation).
4. All these problems, irrespective of the gravity of the issue, lead to one goal: the commander is unable to fulfill his role at this stage!

Under military conditions, the commander is assisted by a commander, a non-commissioned officer, a company technician, or a non-executive officer, in the sphere of leadership and self-management must rely on their own abilities to gain subordinate authority. The commander must realize that professional soldiers at the lowest level are also an important element of the big chain, and therefore it is important that they pay close attention to their proper leadership. If the commander is a little tough, then there is a danger that the unit will be less disciplined, poorly motivated to well-performing tasks. To show the natural authority requires a leadership personality. Commander - if he is a good leader-leader, he can work with people and can quantify this competence according to the quality of fulfillment of the subordinate tasks. People appreciate it and it can positively influence their work performance. Often the unit commander decides on which function the subordinate is doing.

If the commander is unfair, arrogant, negligent, or lazy, he often comes up with the most capable subordinates. Dissatisfied even if they are able to choose another job because they do not satisfy the place where they work. Information on such a commander is then disseminated in the armed SR, which damages the good menu of the department. Sometimes even the commander cannot slow down the performance of the entire unit inappropriately by the selected approach. In this case, the commander often chooses to replace the commander and occupy the post. His supervisor, if any, follows the trend that we have found in the SR departments - incompetent, the incompetent soldier has a higher chance of getting to the course to get rid of the commander in time. The number of courses completed affects who will be promoted to a higher position. Thus, one can gain significant competencies, for example, in a language area or other professional area, but will still not have, for example, social concepts. As we have seen in units in the form of interviews, this is a very demotivating approach for competent unit commanders, and the only way to overcome this is that each commander must realize that he is responsible for preparing his subordinates and therefore must seek the way for man to force himself to higher performance through the development of their competencies or dismissal from the armed SR. The goal of using management competencies in the day-to-day unit commanders is to see the following areas:

- make the commander's work more efficient,
- to meet the strategic objectives set out to meet the challenges,
- improve the career development system for military professionals,
- to prepare and train the commanders in the desired direction according to the requirements of the armed SR,
- streamline evaluation system,
- to improve the selection of professional soldiers in leadership positions.

The importance of managerial competencies for this sector

The Slovak Republic considers the basic objective of its defense policy to be the security of its citizens and the defense of the state. It uses individual and collective defense participates in the consolidation of peace and stability in the world and prefers preventive security activities in accordance with international law. The Slovak Republic and its armed forces operate in a strategic environment that is affected by an increase in the extent of asymmetric threats,

terrorism, the increasing threat of weapons of mass destruction, failing states, regional conflicts, radical ideologies and unresolved spores (Model 2015). The Slovak Republic has limited economic means, which is caused by the lower number of professional soldiers serving in the armed SR and lower number of equipment and techniques that could be deployed to the operation if necessary. The more the functioning of the Slovak Republic in limited economic conditions requires the use of the latest management practices in the management of its resources. The decisive combat element of the armed forces is very well-trained personnel. The Slovak Republic has committed itself to the armed SR disposal of such personnel, which will be at a level of quality comparable to that of other NATO and EU member states, which already have learning modules for the development of managerial competencies. The commander of the unit must possess the features, capabilities, and knowledge that will enable him to lead his unit and not only to drive because the competent commander is worthy of following. Managerial competencies are a prerequisite for successfully fulfilling tasks with a great deal of deployment in different operations (situations) in different places (Skolnik, M., Belan, L. 2015).

The share of the management department in managerial competencies

Today, it is well known from the work of successful organizations that according to the focus of the institution, in particular: visions, missions, objectives, specifics and especially according to the type of organization, the most optimal model of education is then chosen in the field of education and consequently its further development. Transformation and reform of military education, military education and training always reflect quantitative and qualitative indicators and development conditions. It turns out that at the military schools, much attention has been paid to technology and technology and attention to management education. From the analysis of the officers' professions, it was clear that all the professions are essentially managerial. The subject of the officer's work is a man and the process of management, therefore the foundation of their education and training must be management (in the sense of not just command), social science, law and leadership, and everything, including training and training. It turns out that there are only a few typical engineering functions and they also have the character of an operational officer and an officer in these functions manages the service or activities and does not just work on the technique. This means that the new officer also needs some knowledge and skills in managing technical areas, but he needs to have knowledge and skills from management, social science, and leadership.

For these reasons, the Department of Management has concentrated its educational and educational efforts since its inception, apart from its participation in bachelor, master, and doctoral programs within our Academy of the Armed Forces gene. M. R. Stefanik covers and realizes even today life-long - further education of professional soldiers and employees under the title "Key Competencies of the Manager". However, in relation to adult learning, it is important to note that even in our area, it is now most necessary for professional soldiers and employees to gradually learn to "learn" from certain rooted practices, from a "defensive routine.

Based on our knowledge of the opinions and knowledge from developed countries as well as OECD organizations, our own knowledge and the results of research within the OS SR, we have found that the development of personal qualities of commanders - managers - leaders also needs to be ensured.

In the AOS conditions, in close cooperation with the Learning Center, we have "Know How" - 13 years of courses focused on lifelong learning - short-term vocational courses (KOK) under the title "Key Competencies of the Manager". In the form of modular learning, we have begun to professionalize and improve the key competencies of managers, especially in the following modules:

- Module 1: Fundamentals of Management - Effective Manager.
- Module 2: Communication skills of the manager.
- Module 3: Teamwork - building and team leadership.
- Module 4: Managing stress and psychologist of the manager.
- Module 5: New Trends in Manager Training.
- Module 6: Leadership.

Table 1 Composition of course participants

Module	Logged in	Participants	Ø age	Professional soldier	Employees	Education	Full secondary education
1	21	20	32	20	0	18	2
2	23	20	33	20	0	19	1
3	27	23	31	23	0	21	2
4	23	21	37	19	2	16	5
5	22	17	34	17	0	15	2
6	17	16	36	16	0	13	3
Together	133	117	33.8	115	2	102	15

Table. 2 Analysis of individual courses

	1. module	2. module	3. module	4. module	5. module	6. module
	%	%	%	%	%	%
Organization of the course	87	84.9	82.9	92.4	77.6	86.4
Taking time	80	88.2	90	92	80.5	89
Study manual	89	92	87	91.2	89.8	93
Mediation of knowledge	85	82.8	76	92	86	93
Teaching methods	88	83	82	94.8	88	90.5
Teacher knowledge and access	85	88	85	90.6	87	96.6
Suitability of the topic selection	81	89	80	91.2	82.3	90
Expansion of theoretical knowledge	79	72	73	90	78	89
Expansion of practical knowledge	69	83	75	90.5	73	88.2
Another benefit of the course for practice	73	90.1	92	89.5	81.2	87.9
Overall satisfaction with the course	80	90.5	88.5	89	82.7	92.8

Later practice has shown that it is necessary to expand these competencies on the issue of the manager's label, human resources management, we are currently considering the issues of military diplomacy, manager's management, time management, project management as well as about the manager's creativity, which is also necessary for terms of the professionalism of military managers.

The course lasts for 3 to 5 days, part of the course contents are also practical jobs – training and training of managerial skills and competencies. Responses, as well as feedback, are done through an anonymous questionnaire, as well as direct interviews with participants in courses. Graduates talk about satisfaction with the level, content, and methods and forms used in courses. These modules also include courses focusing on financial literacy, environmental management, as well as armament and logistics courses under OS SR. There are also proposals of specialized departments of the department for further issues within the department such as coaching under the conditions of OS SR, specifics of intercultural communication under OS SR, mass media and crisis communication and many more. The suggested trend is definitely correct, and the variety of courses will only grow.

3 OBTAINING MANAGERIAL COMPETENCIES IN THE UNIT TRAINING PROCESS

The main objective of the armed SR training, as defined in the Defense Strategy (Defense strategy 2015), is to achieve and maintain the required level of training to fulfill the prescribed mission with an emphasis on NATO's goals with the use of available resources. Problematic in this period is the financial provision of training, which essentially hinders the quality of unit training. Armed Forces training should be ensured by intensive training in accordance with NATO standards, performing joint exercises of combat and support units, increasing the level of command and staff exercises, participating in and using the experience of international exercises, using simulation technologies, and upgrading the training base. However, this is not currently possible due to the budget chapter of the Ministry of Defense. In peacetime, the maintenance of a corresponding degree of operational readiness is considered to be a decisive factor in fulfilling the mission of the armed forces. The armed forces will be personally replenished, trained and equipped

to fit into the following three operational readiness categories, in accordance with NATO rules:

- High-power forces - capable of deploying in a very short time to a wide range of operations, including rapid response forces,
- Forces of lower preparedness - capability of deployment in a relatively short time, with some of these forces being able to fulfill their missions only after completing,
- long-term forces developed - with the capability to provide adequate support to forces deployed in operations after the soldiers have recovered from the backup (Defense strategy 2015).

To that end, we have committed ourselves to entering NATO, although it is currently a very problematic issue from an economic point of view. In practice, substitution activities related to the maintenance of technology and armaments and economic work are often performed instead of planned training. it has a negative impact on the preparedness of our units and their deployment to a real combat situation.

The aim of training in armed SR should be primarily to provide high quality training for all units, to ensure the efficient use of resources, to acquire and maintain training to fulfill specified missions in joint and multinational operations, and to fulfill non-military crisis management tasks in accordance with standards set for their operational readiness In order to improve their training, the following are also to be observed: "Basic Military Skills Program of the Slovak Republic soldier and small group (team)" SPJ-3-7 Vsevojsk for the preparation of soldiers of all kinds of troops and services within the framework of the armed SR and represent a comprehensive tool for the implementation of bi-lateral preparation at all levels of command of the armed SR (SPJ-3-7: 2009).

The purpose of these programs is to unify the system of conducting basic bi-disciplinary training within the armed SR so that it is finally unified for all departments. Furthermore, it was intended to determine the minimum level of theoretical knowledge and practical skills from individual subjects of all-around training and to lay down the minimum training requirements for the individual when acting alone or in a small group. The conditions for commanders to form the profile of the professional soldier of the SR are created here. However, they focus on a professional site and not on raising the level of assumptions to achieve this minimum level of training, which would also be a prerequisite for achieving a maximum level of training, even by self-study.

Within the entire armed forces, a system of education based on the development of managerial competencies would allow for the quality of professional service in every area of professional careers. The training of commanders is solved during the training year in the following forms in the form of:

- the methodical preparation of the commanders of wool, squads, and commanders of cooperatives,
- Commander's command preparation,
- Instructional and methodical work.
- In particular, there is a development of professional abilities that move commanders forward at a professional level. We could inspire foreign NATO armies - especially the United States, Great Britain, Germany, France - and their targeted courses to increase the level of managerial competencies, especially leadership (Zibrik, P. 2011).

Armed forces must be prepared to respond flexibly to threats by quickly deploying operations that are practically free of geographical constraints. Depending on the nature of the operations, they will have to have a whole range of capabilities that will enable them to prevail in the decision-making and maneuvering way of conducting combat activity. The competencies of the professional soldiers of the Slovak Republic should be comparable to those of the professional troops of the NATO member states. We have committed to this in our partnership agreements, but we also have to adapt training and material training. According to the Defense Capabilities Strategy, which the armed forces currently need to adopt, they are: deployable to a wide range of operations conducted under diverse geographic and climatic conditions, deployment speeds and mobile the use of information networks for effective decision-making and maximizing the effects of combat activities, effective intelligence, detection, evaluation and assignment of targets, destruction and punctuality, security and resilience, including effective engineering support, air defense, radiation, chemical and biological protection of

forces, in operations, depending on their intensity, scale and pace, adequate contribution to information operations, readiness to use the possibilities of multinational logistics and civil-military cooperation. The required readiness of units and their comparability with other member countries will be achieved by the Armed Forces through an educated and prepared commander's corps, modernized training of combat units with combat support and combat units, their efficient organization, the use of modern technologies, the application of allied and national doctrines. Many military professionals of the armed SR take part in foreign courses focusing on various military fields, resulting in a comparison of the education and training system in the armed SR and other countries. The knowledge gained there is generally good and could serve to bring their experience into practice in the armed SR. Acquiring managerial competencies in the unit training process

4 CONCLUSION

The quality of commanders 'and managers' work is dependent on the prosperity of each organization, that is, our AOS in which we live. In order for each manager, but also a commander in an international and market competitive environment, to be able to withstand and manage a number of management activities, he must constantly develop. The above-mentioned facts convince us even more where to direct our efforts. This is also related to the well-known managerial competencies and qualification standards for managerial work as well as to the specific requirements of the armed SR. The unpredictable security environment and the tasks delegated by the company to the defense sector can only be fulfilled by those members of the department who are well prepared not only theoretically, but who are able to practically solve difficult and often unusual tasks in ensuring the security of the society, protecting the life, health and property of citizens.

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