

New Business Tendencies

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PREFACE

Science and education strive for new knowledge and discoveries, creating new opportunities and conditions for further development of technologies which contribute to the overall progress of society and result in new employment opportunities, healthy competition, development of entrepreneurship, etc. The thematic proceedings called “New Business Tendencies” is the result of the scientific and research interdisciplinary international project (No. IP1) of the same name, implemented in the period from **03/07/2018** to **29/12/2018**.

The project holder is Faculty of Business Economics and Entrepreneurship from Belgrade, a unique higher education institution of this profile in Serbia, which through scientific research, expert and advisory work reviews and directs education towards modern trends, takes care of the educational process quality, studies and assesses the quality of education outcome, explores new paths and educational needs in line with new business tendencies. The project was participated by over sixty researchers from higher education institutions from Serbia, Russia, Bulgaria, Hungary and Kazakhstan who made significant efforts towards finding common ways of cooperation and joint development of new business tendencies in the fields of IT, marketing, finance, insurance, banking, entrepreneurship, education, international business, organizational culture, and human resources.

In business practice, the role of modern information systems and technologies, the effectiveness of management and the application of scientific achievements are irreplaceable.

For this reason, many consider science as part of an entrepreneurial chain that ends with a successful business, just as we can call the development and use of technologies the basis for new business tendencies and general economic development. Their efficient use depends on the economic policy and the development of society, the infrastructural possibilities, the creative and innovative human potential possessing appropriate scientific and technical knowledge, governing the methods and techniques of solving problems and the principles of finding new ones.

What the authors agree with is that prosperity can only be expected with the expansion of initiatives and the introduction of new ideas, production, market, management and other technologies in business. That technological innovations and their application are a condition for the survival and development of enterprises, and information literacy is an imperative of modern age and modern business. Also, they agree with the significance of the role of private entrepreneurship, small and medium-sized enterprises in the market and technological flexibility and innovation in approaching production, services, and business through transferring technology, managerial and marketing skills and competencies, and above all in strengthening competitiveness and profitability in national economies.

And finally, what makes the essence of this project – to unite our efforts, to better coordinate and relate them to the common goal – a modest contribution to the modernization of business through research, analysis, and responses, is how to achieve business results by combining new technologies, knowledge and market opportunities.

Project Manager
Professor Edita Kastratović, PhD

USING NEUROMARKETING TOOLS TO FORM A DIGITAL IMAGE OF A REGION

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ABSTRACT

The article is devoted to one of the actual problems – digitalisation of economy, which becomes the impetus for formation of certain digital images. The purpose of the article is to identify opportunities for formation and promotion of a digital image of a region using the example of neuromarketing tools. To achieve the goal, methods of analysis, synthesis, and generalisation are used in the article. In particular, by analysing the concepts of an image of a region, a media image of a region and a digital image, the essence and the content of a digital image of a region are defined. The possibility of its formation and promotion using the tools of neuromarketing is also taken into consideration. Formal and informal restrictions on use of these tools are determined.

Keywords: information economy, digitalisation of economy, an image of a region, a media image of a region, digital image, digital image of a region, neuromarketing

JEL: M31

1 INTRODUCTION

In modern conditions, the development of the digital economy necessitates search for new business opportunities for businesses at the federal and regional levels, improving the quality of life in a separate region, competing for human resources, and the need to take into account absolutely all quantitative and qualitative analytical data in the field of digital transformation, as stated in the work of Institute of Emerging Market Studies of the Business School SKOLKOVO (IEMS) “The Digital Life of Russian Megalopolises” (IEMS, 2016).

2 MATERIALS AND METHODS

Regulatory acts, scientific works of domestic and foreign scientists in the field of digital economy, neuromarketing, image studies served as an information base for the research. As a methodological base of the study we applied analysis, synthesis, and generalisation. Analysis of various approaches and points of view concerning the concept of neuromarketing, its tools, an image of a region, a media image of a region, and digital image allowed us to synthesise the concept of a digital image of a region, to generalise its characteristics. Ultimately, this made it possible for us to explore the possibilities of forming and promoting a digital image of a region using the example of neuromarketing tools.

3 RESULTS

In response to digital challenges a number of regulations that formalise use of various tools of economic impact on behavior of market subjects was adopted in Russia. The normative acts mentioned in the article by N. D. Bublik, I. I. Lukina, D. V. Chuvilin, T. A. Shafikov, and R. F. Iunusova (Bublik, Lukina, Chuvilin, Shafikov, Iunusova, 2018) can be attributed to

them, namely the Strategy for Development of an Information Society in the Russian Federation for 2017-2030, the programme “Digital Economy of the Russian Federation”, the programme of the National Technology Initiative, the Concept of the Bashkir Technological Initiative, and the Concept of “Smart Region” Intelligent Digital Technologies Deployment in the Ulianovsk Region for 2017-2030 (Morozov, 2017), etc.

It should be outlined that in addition to formal institutions in the form of various regulatory acts, there are also informal institutions. One of them is neuromarketing. There are different scientific approaches to the concept of neuromarketing. For example, M. Akulich (Akulich, 2011) defines neuromarketing as marketing, encouraging action with the help of various stimuli that affect the human brain. According to M. Lindstrom (Lindstrom, 2010), neuromarketing is a senior marketing, the capabilities of which include the ability to create conditioned reflexes that cause associations with a particular brand in the minds of people. S. Romaniukha (Romaniukha, 2010) compares neuromarketing with a science, which is capable to explain functioning of unconscious processes that are realised in neural structures.

In other words, the neuromarketing tools are no exception. According to K.A. Berlinskaia (Berlinskaia, 2017), visual neuromarketing (visual merchandising), sound design (functional (background music), aromamarketing (using odors and aromas), measuring brain activity (obtaining consumer responses to advertising at certain times) and implicit associations (measurement of networks of thoughts and reactions storing in the human brain), tracking eye movements. In the opinion of M. A. Shatalov and S. Iu. Mychka (Shatalov, Mychka, 2016), the neuromarketing tools are cognitive dissonance (a conflict on a psychological level, arising from a collision of contradictory ideas or emotions in the human mind), the effect of social proof (embodiment of a collective sense) and the effect of compulsion (the placebo effect). If we consider the neuromarketing tools applied at the level of power, then they should include the tools identified by O. S. Medvedeva and D. Iu. Kardash (Medvedeva, Kardash, 2017): media (as a feedback between the government and the people), behavioral experiments (formation of information to establish relationship between the government and the electorate through study of its needs), eye tracking (formation of a certain worldview with the help of visual effects). Their application should be limited not only by formal rules (laws, regulations, orders, instructions and other ones fixed in writing by the state or its authorities), but also by ethical standards, i.e., informal rules.

In the context of general informatisation, the formation of images in the digital space has a particular importance. Before talking about the formation of a digital image of a region, in our opinion, we should consider the concepts of an image of a region, a media image of a region, and a digital image.

Let us turn to the concept of an image of a region. In the work by A. N. Arlashkina and I.G. Napalkova (Arlashkina, Napalkova, 2014) the main part of the formation of an effective communication strategy in the marketing of a region is a need to develop an image of individual territories and the search for all the necessary means to create individuality of the region, ensuring its competitive advantage not only among the regions similar to it, but among any other regions as well. According to the authors, an image of a region is a real managerial resource, a spatial image, which is purposefully constructed for political, economic, socio-cultural and other purposes. This is a reputation of a region, formation of which is carried out in the consciousness of a regional society by image makers at the local, national and international levels.

Forming of a positive image of a region involves active use of integrated marketing communications. In the conditions of an information society functioning, the process of forming a media image of a region that is able to ensure and improve the effectiveness of integrated marketing communications has become inevitable. For example, in the article by Z. V. Melnichuk and A.I. Iashina (Melnichuk, Iashina, 2011) an informational image of a region

is presented as a combination of associations, feelings, beliefs and knowledge of a consumer, formed in his mind under the influence of image, brand, logo, business reputation, brand name, trademark, quality of and service, etc., initiating his awareness of quality of goods and services. On the one hand, integrated marketing communications are necessary for formation of a complete positive media image of a region, on the other hand, this image is required to ensure a certain level of efficiency of integrated marketing communications.

A media image of a region is both an integral part of the region's image and its continuation. However, current trends of digitalisation not only of economy, but also of all spheres of life in a region, developed from a digital point of view, according to our opinion, predetermine the need to talk about a digital image of a region. Let us consider what a digital image is.

From the point of view of D. I. Spicheva (Spicheva, 2013) a digital image is created through use of various digital technologies, both on-line and off-line. In her opinion, a digital image can be considered as a socio-technological phenomenon. In this case, a digital image acts as a communicative sign and symbolic construct, created by new media technologies and publicity capital, that are able to reach the subconscious and the collective unconscious of a target audience for a desired impact on it. According to V.V. Matsko and V. Iu. Mamaeva (Matsko, Mamaeva, 2016), a digital image is not only an image, created through emotional perception, but also a full-fledged product and an object of management.

Basing on analysis of concepts such as an image of a region, a media image of a region and a digital image, and also on the fact that in Psychological Science an image is a result of perception, a subjective picture of the world and an idea of social objects and phenomena, we assume a possibility of defining of a concept "a digital image of a region" as a complex concept, that combines properties of an image of a region, a media image of a region and a digital image. In our opinion, a digital image of a region is nothing but a complex managed system of reputation, image and brand, integrated into the digital space with the help of various tools, including digital on-line and off-line technologies and publicity capital, which provides awareness of market subjects about a high quality of a territory and forms a community of real partners of a region. If we take into account a psychological aspect of perception of a digital image of a region, it is possible to assume that tools of neuromarketing can be used in the process of forming of this image.

In some publications neuromarketing is presented as a process of finding of certain deep psychological and physiological reactions, that literally make a person shop or execute other actions. Such a mechanistic view on this tool is not true. Naturally, no digital image can force an investor to put money in a project in the absence of infrastructure or residents to move to environmentally unfavorable territories. A digital image of a region is a tool for competition of territories under objectively fixed indicators of potential, such as, for example, the expected rate of return or the intended market size. Therefore, it is necessary to objectively understand capabilities of this tool and intelligently form structural elements of a management system of a digital image of a region.

Another objection against use of neuromarketing tools when forming an image of a region may be the fact, that traditionally neuromarketing is aimed at the consumer audience, and for development of a region, not only are end users important, but also investors, who make their choice not basing on impulsive desires, but on professional knowledge and experience.

However, at present there are quite a large number of experimentally confirmed models demonstrating limited rationality of professional investors. For example, models based on beliefs of investors: the model of a sentimental investor (Barberis, Huang, and Santos, 2001); DHS model by Daniel, Hirshleifer, and Subrahmanyam, 1998); the model of Hong and Stein (Hong, Harrison, and Jeremy C. Stein, 1999) and others. Most of these models are confirmed

using short-term investment trends, however, there is no evidence that these effects do not the same for long-term investment.

Importance of formation of a digital image of a region is also arises from the fact that in the process of digitalisation spreading into all spheres of economy and society, significance and psychology of perception of information and images, distributed in the virtual environment, also changes.

It is assumed that a management system of a digital image of a region, taking into account tools of neuromarketing, should consist of the following elements (functional contours):

1. The target audiences control contour. Formation and monitoring of reactions of target groups should be consistent with a socio-economic development strategy of a region, covering potential consumers and investors. At the same time, it is important to track both traditional audiences (for example, vacationers and travel agencies for resort regions), as well as emerging target segments (for example, convenience of work in the field of offshore programming).

2. The digital environment control contour. It assumes tracking and adequate formation of the following virtual clusters, ranked by the degree of controlling influence opportunity: a cluster of official resources and information; a cluster of support and interested actors; a social media cluster; a cluster of opposing resources.

3. The basic reactions dynamics monitoring contour. That is, in fact, the contour of neuromarketing, which is designed to capture and transfer information about presence and change of typical reactions in the target groups to other control contours.

4. The digital infrastructure contour. In the development of digitalisation proceeds, elements of a digital infrastructure, which means such elements of a virtual environment that allow interested persons to get faster and cheaper access to information and services and are associated with a certain territory, become the most important elements of an image.

Examples of digital infrastructure can be presence of a direct line with authorities of a region for investors, as well as availability of an actual schedule of suburban trains.

A complete system can be formed both by including special units, that are focused on managing of a digital image of a territory, in existing management structures, and by creating appropriate competencies among individuals within the framework of established management systems.

4 CONCLUSION

From our point of view, formation of a digital image of a region is possible to implement, first of all, by conducting neuromarketing studies of target segments (target audience) of this image, which can be households, individuals, investors, entrepreneurs, etc., but not absolutely any, and only those who are distinguished by high level of their potential. The purpose of a digital image of a region in this case is to form necessary perception for the region in the minds of target segments, not only to attract attention of target segments to a region, but also to direct them to make a choice in favor of a region having a digital image, contributing to accumulation of additional human capital, investments, resources, creation of additional competitive advantages, improvement of well-being and quality of life, provision of comfortable business conditions in a region. Certainly, a digital image of a region should include an image of a smart region, an image of a healthy region, an image of a socially, culturally, politically and economically developed region.

As it has already been noted, one of the tools for forming a digital image of a region can be neuromarketing. Neuromarketing research of target segments of this image will allow you to identify tools for its formation and promotion.

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THE CONCEPT OF A COMMERCIAL ORGANIZATION FINANCIAL STRATEGY

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ABSTRACT

The article is about a company's financial strategy concept. The study subject is to determine the financial strategy according to interpretations of different authors. The purpose of this work is to study the essence of financial strategy. The 'financial strategy' interpretation study has a well-founded relevance. In addition, this work contains a review and analysis of the scientific literature on relevant topics by domestic and foreign authors. As well as this, various concept definition approaches have been scrutinized closely. Analyzing the existing concept definitions of 'financial strategy' has helped to draw a conclusion about the lack of knowledge about the issue and the need to clarify and supplement the definition. Moreover, the concept definition of 'financial strategy' has been clarified additionally. The scientific literature analysis has revealed a significant variety of financial strategy definitions. It has been concluded that the authors mainly focus on various aspects of financial activities; they highlight areas in which company executives must set goals of their financial strategy.

Keywords: Commercial organization strategy, functional strategies, financial strategy, financing, forming and use of financial resources

JEL: L10

1. INTRODUCTION

At the core of any business underlies the strategy development, without it a company can lose its competitiveness. Today, the strategy is the art of managing a commercial organization and it is an essential element of each company. Seeing this, the formation of an optimal strategy is the object of interest of several scientific fields such as economics, cybernetics, finance, company economics, organization theory and management.

In current economic conditions, the successful work of a business entity depends on a proper way of setting goals, ways of achieving them, identifying and preventing business risks, and assessing the success. Therefore, there is the need for a company's management to set current, operational and long-term goals, develop its business growth concept and prospects for both market and external entrepreneurship environment, in other words, to develop a company's strategy.

There are a number of strategy interpretations in scientific publications. Generally, they all boil down to the ability to prepare, organize and conduct various activities, while using the amount of resources available in order to achieve the goal. Unfortunately, there is no definite understanding of the strategy essence. In Russian and foreign literary sources, this category is interpreted differently: from an extremely narrow understanding of it to a detailed one, that includes almost all areas of finance. The problem concerning the essence of financial strategy logically leads to the need to develop further theoretical foundations of this category.

A lot of research and publications are devoted to theoretical and methodological aspects of organizations strategy. A significant contribution to the development of strategic management

was made by Ackoff R., Ansoff I., Drucker P., Mintzberg H., Omae K., Strickland A., Thompson A. and others (Ackoff, 2002, Ansoff, 2009, Drucker, 2001, Mintzberg, 2011, Omae, 2014, Strickland, 2007, Thompson, 2007). Various organization strategic management problems are examined in the works of Russian scientists: Ayvazyan S., Balkind O., Basnina T., Chernyshova M., Stepanova G. (Ayvazyan, 1998, Balkind, 1998, Basnina, 1998, Chernyshova, 1998, Stepanova, 1998). The concept regional strategic management is covered in the works of both foreign (Krugman, 1999, Mintzberg, 2011, Porter, 2005), and domestic scientists (Grunberg A., Zhikharevich G., Kleiner G., Liubovniy V., Maracha V., Utkin E., Fatkhutdinov R., Shmerling D.) (Grunberg, 2003, Zhikharevich, 2008, Kleiner, 1998, Liubovniy, 2011, Maracha, 2006, Utkin, 2004, Fatkhutdinov, 2015, Shmerling, 2014). The theory and practice of financial strategic management have been widely studied by Abrutina M., Amosha A., Astakhov V., Bakanov M., Barnholtz S., Geez V., Kovaleva V., Kostyrko L., Kreynina M., Pavlova L., Poddergina A., Rodionova V., Teplovaya T., Chumachenko N. (Abrutina, 2011, Amosha, 2005, Astakhov, 2014, Bakanov, 2007, Barnholtz, 2003, Geez, 2012, Kovaleva, Kostyrko, Kreynina, Pavlova, Poddergina, Rodionova, Teplovaya, Chumachenko). Such foreign scholars as M. Mescon, J. K. Van Horn, G. Wagner, W. Morris, G. Simon, D. Hahn, N. Robert, R. Holt studied the formation of financial strategy.

2. METHOD

The term ‘strategy’ comes from the Greek word ‘strategia’: ‘stratos’ means army and ‘ago’ is to ‘lead’, in a military sense. At first, term ‘strategy’ meant the art of warfare. Historically, ‘strategic’ meant ‘most important’ and later set the total of management terms. For a long time, the strategy had been understood only as a resource management. This approach, originated from the USA in the second half of the 1930s, initiated the development of specific approaches of the strategy formation (Wissema, 2000; Lapygin, 2009; Osel, 1980).

These approaches are primarily concerned about the marketing strategy, but they also include some fundamental aspects, which are applicable to other company strategies, including financial ones. Vorobyov A. V. notes that the development of strategic marketing planning concepts has formed the theoretical basis for the financial strategy’s development. In his opinion, the financial strategies could be referred to as soon as financial ratios are used as indicators of the company market position, and for strategic decisions the financial ones, which are related to the formation and use of financial resources (Vorobyov, 2011).

There is no notion of ‘financial strategy’ neither in American and nor European scientific literature. It is presented as one of the functional strategies in strategic management. In financial management, however, scientists use specific terms such as long-term investment decisions, capital structure, dividend policy, credit policy, cash, inventory management, financial planning, etc.

It should be noted that in modern Russian economic science there are several types and options for a company strategy. According to Professor Blank A. A., the distinction between types of company development strategies plays a key role in the theory of strategic management, according to their levels. As a rule, there are three types of strategies (Blank, 2006):

- Corporate strategy – it determines the overall future development of the organization; it also focuses on the company mission realization and ensures the achievement of its main goal to maximize the status of the owners;
- Functional strategy – is developed in several functional areas such as marketing, production, financial, personnel, innovation. They are focused on detailing corporate strategy and on providing individual businesses with the necessary resources;

- Company business strategies – they are aimed at achieving two main goals – ensuring the competitive advantages of a particular type of business and increasing its profitability.

Thus, financial strategy is one of the five main functional strategies of the company (production, marketing, innovation, personnel and finance).

In our opinion, the implementation of these strategies requires support in the form of basic decisions in finance field; therefore, the financial strategy must be regarded as most important. The financial strategy is also defined by some Russian scientists. For instance, Kleiner G. B. singles out the enterprise financial and investment strategy of and defines it as a set of strategic decisions containing alternatives, priorities and volumes of acceptable sources for attracting and using financial resources (Kleiner, 1998). Bandurin A. V., Gurzhyev R. Z. and Nurgalyev R. Z. also believe that investment and credit strategies make the corporation financial strategy. These authors explain the strategy as a detailed comprehensive and integrated plan designed to accomplish company mission and achieve its goals (Bandurin, Gurzhyev, Nurgalyev, 1999). Their conclusions are based on the works of D. Cleland, W. King (Cleland, King, 1974).

Professor Melnikov V. N. talks about the integration and financial strategy when examining the state of investment and integration issues in modern economic conditions; moreover, he does not consider it as a separate economic category (Movsesyan, Melnikov, 2007). One of the leading specialists in Russian financial science, Professor Pavlova L. N., sets the financial strategy as a part in corporation financial management (Pavlova, 2012).

However, we agree with Professor Blank I. A., who considers financial strategy to be an independent economic category. He defines it as a system of long-term goals in organization financial activities and most effective ways of achieving them. It is all determined by financial ideology as well as choosing ways to achieve goals and adequately adjusting the formation areas and using of financial resources in varying conditions (Blank, 2006).

A similar interpretation is given by Zagorodnikov S. V., complementing the previous definition with a range of financial strategy questions. However, the difference is that in the previous version it is a formed system, and in this case, it is just setting goals, namely defining long-term goals and choosing effective methods to achieve them. Financial strategy solves several problems such as finding sources of long-term financing; optimal cost structure and capital formation; finding technologies to build long-term capital (Zagorodnikov, 2010).

Professor Polyak G. B. supplemented the financial strategy concept with a set of measures aimed at achieving promising financial goals (Polyak, 2012).

Independent expert Nikolenko N. P. expresses a similar idea. He believes that financial strategy includes target and resource financial strategies, as well as financial target strategy has its own variations: company value growth, sales growth, profit growth (Nikolenko, 2009).

This approach largely reflects its focus on income maximizing. There is another interpretation of financial strategy. It is a system designed for capital management. Its main purpose is to optimize profits and reduce the chance of bankruptcy (42).

According to Professor Goritskaya N., the financial strategy is a general action plan for an organization, which includes financial resources formation and their planning in order to ensure company financial sustainability. This plan involves planning, accounting, analysis, financial control; optimization of fixed and current assets; profit distribution (Goritskaya, 2005). We believe that this approach is not entirely justified; moreover, this aspect of finance use is not recognized.

Professor Ilina L. I. shows a similar approach in understanding financial strategy. It is a scientifically based choice of medium-term targeted actions aimed at future cash flows, which are formed under the influence of external factors in uncertain conditions (Ilina, 2008). This interpretation focuses on the goal of financial strategy, which is fairly justified.

The latter definition practically coincides with the version of the financial education portal and determines that the financial strategy theory studies the economic management patterns in market relation conditions, it develops schemes and survival forms in unstable changing conditions (37). It should be noted that this definition fully fits the definition given by Professor Kovaleva A.M. (Kovaleva, 2015).

This definition is slightly broader, but it also does not take into account the use of financial resources. 'Alfa' the Business school offers a rather extensive interpretation, which ultimately coincides with the opinion of Professor Stepanova G. N. According to the source version, the economic entity financial strategy is determined by the strategic goals as well as the financial management guides. Undoubtedly, the primary goal of financial management is to increase the owners' material well-being and maximize company's market value. Therefore, company's financial strategy is to secure the organization with financial resources (cash) and to use them effectively (Stepanova, 2001).

M. Pukemo, the president of Alta Group (Moscow), notes that the financial strategy means a set of principles and rules, which establish company's financial flows and financial risk limits. This interpretation recognizes the level of risk; such an approach is particularly relevant for a rather competitive environment, especially in the period of financial and economic crisis and the post-crisis period.

Nesterenko E. M. provides the following interpretation of financial strategy, it is a long-term financial policy course that is designed for the future and solves large-scale tasks defined by economic and social strategy (Nesterenko, 2009). For the first time, the category is defined as the financial policy course, and financial strategy is presented as an instrument of economic and social strategies. Nesterenko E. M. says that the financial strategy focuses on solving the state economic and social problems.

The Business Development Portal BusinessUGA.ru defines the financial strategy as the main financial policy component. This source explains the term as a long-term financial program aimed at solving enterprise global problems such as its independence, self-sufficiency and profitability; financial strategy is one of the main components of financial policy (26, 2015).

Ilysheva N. N. and Krylov S. I. note that being the most important component of a general economic strategy, financial strategy is aimed at achieving the organization long-term goals by ensuring the formation and use of financial resources. That is, managing the financial flows and guaranteeing the organization competitiveness (Ilysheva, Krylov, 2004).

Professor Gerashchenko I. P. gave a very interesting definition to a financial strategy. It is a system of active and proactive solutions aimed at increasing the company's innovative activity and making it more competitive. It also involves structural changes in the financial sector and takes the company to a new stage of development (Gerashchenko, 2010). It focuses neither on goals nor action plan, nor ways and methods, but on solutions both active and proactive. In addition, the financial strategy is aimed at increasing innovation activity, i.e., the intensity of production activities and the introduction of new or improved technologies, products into economic circulation.

The Strategy and Management.ru portal placed the following definition; the financial strategy involves the formation and use of financial resources to implement the basic enterprise strategy. It allows the enterprise economic services to create and change financial resources and determine their optimal use to achieve the operation and development enterprise goals. We fully support the opinion of this source and believe that it accurately reveals the concept essence being studied.

According to a Professor of Russian-German Higher school of management Lisovskaya I. A., the company's financial strategy is a system of long-term decisions on mobilizing and using financial resources, ensuring financial security, including the tax aspect, and organizing

an effective financial management system. It is central to the system of strategic management, determined by two fundamental principles. It is one of the basic functional strategies that has an important purpose, i.e., to ensure the optimal financial resources formation and distribution, to maintain the financial balance and to manage financial risks in strategic period. On the other hand, the lack of necessary financial resources is crucial in choosing and implementing the company's strategic goals (Lisovskaya, 2011).

In our opinion, the financial strategy definition proposed by Lisovskaya I. A. is the most complete. It recognizes the formation strategy, the use of financial resources, their management and risks. It also reveals the nature of relationship and impact on the company strategy; and it focuses on the fact that financial strategy is one of the company functional strategies.

An interesting approach is proposed by Associate Professor Shchesnyak K. E. Financial strategy is designed to position the corporation in the capital market, expand business relationships and use financial resource potential effectively (Shchesnyak, 2011). Let us disagree with the author's opinion regarding the corporation positioning in the capital market and relationships expansion, since the main goal of any business is to maximize profits.

Seeing this, the formation and effective use of financial resource potential and its consolidation should be prioritized.

Karatuev A. G. studies the financial strategy using a process approach as a tool for financial management goal realization (Karatuev, 2007).

Foreign economic science positions the financial strategy as dependent from the marketing strategic planning.

Describing the scientific views development by foreign scientists on strategic planning, Professor Lapygin Y. N. asserts that representatives of the Harvard Business School K. Andrews, M. Porter, G. Hemel and K. Prokhalad are considered to be the leaders in developing strategy formation mechanisms. He distinguishes three chronological stages and three approaches to developing strategies (Lapygin, 2009):

- 1) 1970s – economic strategy by K. Andrews;
- 2) 1980s – Harvard business school Professor's business strategy by M. Porter;
- 3) 1990s – professors leadership strategy by G. Hemel, K. Prokhalad.

The scientist notes that within the framework of these theoretical approaches, the US has a number of strategic marketing conceptual models, most famous of which are:

- product life cycle by T. Levit;
- opportunity evaluation matrix by Prof. R. Carin from Minnesota and Prof. R. from Kent;
- value net by A. Brandenburger and B. Neilbafford;
- strategic groups by Prof. D. Chapel from New York;
- typology of competitive strategies by F. Kotler;
- three criteria by Prof. of MIT Business School M. Tracy and Dr. F. Wiersema from Harvard Business School
- three Cs analysis by Prof. Subhash S. Jane from Connecticut.

Based on the study results by Vorobyov A. V., it is clear that conceptual approaches mainly have to do with the marketing strategy, but contain fundamental financial strategy features (Vorobyov, 2011). To sum up, foreign science has shown that the theoretical approaches had developed as the strategic planning concepts in marketing.

3. RESULTS

Thus, there is no definite understanding of financial strategy in specialized books. As a result, this category is interpreted differently in domestic and foreign sources: from its

extremely narrow understanding (as integrated management of all assets and liabilities) to a more detailed one, involving almost all financial areas (defined by Lisovskaya I. A.) (Lisovskaya, 2012). Consequently, there is still no accepted definition of financial strategy.

However, having analyzed all the definitions, it can be claimed that the financial strategy determines how much, where and when to invest, how much, from where and when to spend funds; it does not get changed in changeable circumstances and it only depends on the level of financial literacy and the investor's risk attitude.

There are two approaches to the definition of financial strategy:

- 1) The general company strategy, since all its indicators are boiled down to financial issues;
- 2) The functional company strategy, which sets goals in the financial sphere to form and use financial resources with regard to any business risks.

In addition, some authors use the process approach, while others use the system approach.

We hold the opinion that the financial strategy is a type of a functional strategy for a business entity.

At the same time, it should be noted that the definition of a financial strategy is very diverse. Take for example, the understanding of a functional strategy, which focus on various aspects of financial activities. It goes without a doubt that if a category is not clear and definite, then it is not fully understood, and there is a need for further research. Therefore, we can single out the following aspects, which must be recognized by company executives should they set their goals:

- financial resources formation;
- use of financial resources;
- financial risks minimization;
- cost structure optimization;
- capital structure optimization;
- profit maximization;
- ensuring financial stability and bankruptcy chance reduction;
- financial condition control;
- core and current assets optimization;
- rational profit distribution.

Based on the opinions of scientists, economists and specialists, the financial strategy must be understood as the system of actions designed to implement the most efficient financing of a company's corporate strategy, which is formed in the following directions: providing financial resources; financial resources usage; financial risk minimization; structure and capital cost optimization; profit maximization (capital increase); ensuring financial stability and reducing bankruptcy chance; financial condition control; core and current assets optimization; rational profit distribution, taking into account environmental changes and stages of organization life cycle.

4. CONCLUSION

Thus, the financial strategy is one of the main tools for managing the work of the enterprise, involves the need to develop strategic, tactical and operational plans in conjunction with financial indicators, should be a clear forecast. The development of the financial strategy of the company is predetermined by certain conditions. The main condition of the financial strategy is the speed of transformation of macro-factors of the economic environment, and also the main macroeconomic indicators, the rate of technological growth, constant changes in the financial and commodity markets, imperfection and instability of the economic policy of the state and methods of regulation of financial activities, etc. The financial strategy is

developed on the basis of all factors of the macro-environment of the economy to avoid a decrease in the profitability of the enterprise. In such situations, the lack of a formed financial strategy, adapted to changes in the external environment, can lead to divergent financial decisions of individual structural units of the company, contradictions and a decrease in the overall efficiency. The implementation of these goals involves the introduction of new technologies, the development of new markets for products, etc

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FINANCIAL AND OTHER ADS IN THE OPPOSITION DIGITAL/REAL

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ABSTRACT

Financial and other ads in the frame of opposition digital/real are analysed here from the standpoints of semiotics.

The literature review includes the following topics – theory of digitality; theory of virtuality; some aspects of financial theory (psychology and economy; insurance theory; financial risks' theory; disaster theory); some aspects of advertising theory (banking and insurances advertising; psychology and advertising – ad appeals; psychoanalysis and advertising; fear appeals; theory of archetypes); semiotics (semiotics and advertising; semantics (semantic field of concept risk; metaphor; litotes); syntactics; pragmatics and literature theory (theory of drama; theory of tragedy).

The main text of article is structured on the basis of the four semiotic branches – alphabetic, semantics, syntactics and pragmatics.

Financial and other ads in the alphabetic's part are examined from the standpoint of opposition real (traditional)/digital as communicative approach and from the standpoint of concept "continuum". Some transformations of traditional (analogue) signs into digital ones and the creation of digital ads in the opposition variant/invariant are also studied here.

The second part of the article is about digitized ads from the point of view of semantics.

The concept of semantic field and its digital dimensions; the digitally connoted ads; the digitized ad metaphors and the digitized ad contrasts (counterpoints, oppositions) are examined in this section.

The ads are analysed from the viewpoint of syntactics in the third part. The connections between the digital metaphors and digital litotes and how they form one and the same stylistic figure are studied as well.

The fourth part is on pragmatics. The analysis of archetype appeals is the main topic here.

Keywords: advertising, ad appeal, opposition "digital/real", semiotics, alphabetic, semantics, syntax, pragmatics

JEL: M37

1 INTRODUCTION

To analyse the communicative approaches of financial and other ads in the opposition digital/real. The article is written on the bases of four semiotic branches – alphabetic; semantics; syntactic and pragmatics. Advertising and other marketing communications gradually acquire digital characteristics. Semiotics is one of most appropriate science to explore and explain these new transformations. With the help of semiotics' scientific apparatus admen can create more efficient digital communications. The article explores only a small part of digitized advertising. The same applies to the semiotic concepts which are used.

The only reason for this is the limitations due to the size of article. This article is for the following specialists:

- university lecturers in the field of advertising and semiotics;
- admen and advertisers who create digital ads and other digital marketing communications.

The article has two practical advantages – it will help:

- the university lecturers on advertising and semiotics.;
- the admen and advertisers.

The article “Financial and Other Ads in the Opposition Digital/Real” is one of the rare scientific studies on semiotics of transitions between traditional and digital advertising. The analysed ads are created the past few years.

Acknowledgement to Admen which Ads are Analysed in the Article

Some of the world’s best ads are analyzed in this article. They are excellent examples of the high communicative abilities and creativity of their innovative authors. The ads are from the following site:

<http://adsoftheworld.com/>

Addsoftheworld.com is one of the leading online mediums in advertising. The site is also quite useful for specialists in the field of advertising and other marketing communications.

The authors of this article express their deep gratitude to the admen who created the ads quoted in the article as well as to the specialists who set up and maintain so well the adsoftheworld.com

2 LITERATURE REVIEW

Digitality

Charlie Gere in his book on digital culture analysed thoroughly some of the most relevant concepts in this area – digital technology in art, music, design, film, literature and other areas. (Gere, Charlie, 2009)

The digital characteristics and their influence on the surrounding world are examined in detail in a book on digital culture and new media. Some of the main concepts of the book are: global network, computer programs, distribution of new digital media products, interactivity, mobility of the media audience, and so on. (Creeber, Glen and Martin Royston (Eds.), 2008)

Virtuality

“The Oxford Handbook of Virtuality” examines in depth most of the key concepts in this scientific field – ethical aspects of this phenomenon; virtuality and the identity of communicators; degree of immersion in virtuality; computer games; eroticism and virtuality; use of virtuality in various social areas; religious aspects of virtuality; different transitions between reality and virtuality; some new technologies such as augmented reality; and so on. (Grimshaw, Mark (Ed.), 2014)

The authors of the book “Real Virtuality: About the Destruction and Multiplication of World” analysed the hybrid communications – their definitions, classifications, how they function both in reality, and in virtuality, etc. The different degrees of virtuality of postmodern communications have been studied as well. (Gehmann, Ulrich and Martin Reiche (Eds.), 2014)

Financial Theory

Psychology and Economy

Richard Thaler, the winner of the Nobel Prize for Economics in 2017, is the author of one of the most important books on economics in recent years – “Misbehaving: The Making of Behavioural Economics”. The author analyses the connections between economy and human psyche. The basic idea in the book is about the big impact of human emotions to the financial decisions. Unfortunately, the economic science does not pay the appropriate attention to this psychological phenomenon.

People often make important economic decisions on the basis of their emotions, rather on economic rules. Therefore, the author used the key concept – “behavioural economics”.

Because of this, economists, psychologists and marketers should jointly develop marketing theory, based on the main psychological and sociological notions. (Thaler, Richard, 2015)

Allan Kimmel explored the links of economy with some important psychological phenomena as attitudes, life styles, etc. They are some of the most important concepts in advertising and in other marketing communications. Due to this reason, a new concepts should be introduced, defined and examined – psychological economy, emotional economy, behavioural economy, etc. (Kimmel, Allan, 2012)

Insurance Theory

Part of the ads, analysed in the article, are for insurances. This is why some important scientific books and articles on insurance theory are part of literature review.

In his book, Rob Thoys explored the most important aspects of insurance theory – definitions, types of, functions, etc. The author analysed also the insurance systems in different cultures. The concept of risk is a key one in his book. The same concept is used often in the ads of insurances’ services. It is besides related closely to the psychological, communicative and literary notions of “drama” and “tragedy”. The effectiveness of communications depends to a large extent on them. (Thoys, Rob, 2010)

Georges Dionne thoroughly analysed the concept of “risk” in his book. These are some of the basic notions in the research-risk prevention, risk management, regulatory mechanism, risk-order attitudes, risk measures, and dependence modelling, prevention and precaution, systemic risk, risk classification, catastrophe risk competition. (Dionne, Georges, 2013)

Financial Risks’ Theory

Financial risks are the main scientific topic in the Jan Grandell’s book. The author studied in depth several of the important phenomena in this regard-ruin possibility; classical risk model; as well as some mathematical models by which the different risks can be measured. (Grandell, Jan, 2012)

“Handbook of Risk Theory” is one of the most relevant researches in this field. The concept of risk here is interpreted also from a cross-cultural stand points – the risk perception in different cultures; fatalism with regard to the risks; etc. (Roeser, Sabine *et al.*, 2012)

Disaster Theory

Disasters are closely related with the concept of risk. That is why they are analysed in many scientific books on risks in insurance business. David Etkin in his book on disasters examined them from different perspectives – economical, financial, psychological, social, etc. (Etkin, David, 2014)

E. Quarantelli studied the social components of disasters theory. Disasters are often results of inappropriate (inadequate) human behaviour – social conflicts, colonial thinking, wars, nature pollution, global warming, etc. Social advertising is one of the most suitable marketing communications to oppose these highly destructive phenomena. (Quarantelli, E, 2005)

Advertising Theory

Banking and Insurances Advertising

Basova and Kakurina analysed in their article the integrated marketing communications of financial services. The article is one of the rare researches in this field. The effectiveness of advertising and other marketing communications depends largely on the proper integration between different marketing communications – the choice of the most appropriate ad appeals, the suitable choice of marketing communications involved, on the proper ratio between different marketing communications, etc. (Basova, N. *et al.*, 2014)

Some of post-modern marketing communications of financial services are part of social media. Ferretti and Graziani - authors of an article on these issues, have thoroughly examined the use of visibility; loyalty; brand awareness; engagement, reputation, etc. enhanced by the use of social media in banks' marketing communications. (Ferretti, Antonella *et al.*, 2017)

Psychology and Advertising-Ad Appeals

The ad appeal is the key concept with regard to the effectiveness of advertising and other marketing communications. The ad appeals are studied in Ernest Gill book "Advertising and Psychology" from different stand points.

The book of Fennis and Stroebe's explores thoroughly ads' mental processing; the attitudes; psychological aspects of persuasive communications; motivational adequacy of advertising; and so on. (Fennis and Stroebe, 2015)

The book of Heath is a valuable study in the field of psychology of persuasive communications and subconscious. One of the most relevant ideas in this book is connected with the Subconscious Seduction Model (SSM). (Heath, 2015)

The books on consumer psychology and consumer sociology are crucial with regard to effectiveness of advertising and other marketing communications. Some of important ad concepts in this field – consumer memory; consumer learning; motivation; persuasion; hedonism and consumer behaviour; etc. are analysed in depth by the authors of "Handbook of Consumer Psychology". (Haugtvedt *et al.*, 2012)

Psychoanalysis and Advertising

Psychoanalysis is of key importance for the psychological foundations of advertising and marketing. It helps a lot in the selection of appropriate ad appeal (motivational psychological drive). The basic reason is that the modern psychoanalytical theories are based on appeals of power which are decisive for efficient communications.

Haineault and Roy's research is quite valuable in this respect. They examine the subconscious and its important role in advertising. (Haineault and Roy, 1993)

Forest's research is also relevant in this respect – because many ads are created on the basis of archetypes. The drama and tragedy are the perfect communicative strategies by which the archetypes' appeals can be expressed in the ads. (Forest, 2016)

Fear Appeals

Admen use actively fear appeals in financial and other ads – especially in insurance ads. Witte and Allen analysed the effectiveness of fear appeals in the continuum "low – high intensity". (Witte and Allen, 2000)

Theory of Archetypes

The most important ad appeals are result of our archetypal thinking. The founder of the theory of archetypes is Carl Jung.

Vance Packard published his book “The Hidden Persuaders” in 1964. So far, this book is the leading study on archetypes’ appeals of power and might in advertising. This monograph will continue to inspire the scientists many years ahead. (Packard, 1964)

One of the most interesting studies on utopian images – the images of paradise in advertising, is written by some of the leading world scientists from various fields – media, marketing communications, politics, religion, art, etc. The idea of paradise is very important in the system of archetypes and advertising.

Some of the relevant phenomena are analysed in the book, namely – utopian spaces in magazine ads; women and children in a fragile paradise; the American dream in an Absolut World; masculine and feminine images in Italian magazine ads; etc. (Manca, Alessandra, Luigi Daniele and Gail W. Pieper (Eds.), 2012)

Semiotics

Semiotics and Advertising

Ron Beasley and Marcel Danesi analysed thoroughly the different persuasive signs in advertising and marketing communications. The authors also studied advertising depending on its various media formats – print, electronic and digital, etc. (Beasley, Ron and Marcel Danesi, 2002)

The book of Sebeok is one of the most important works in marketing semiotics’ theory.

The author examined in depth important semiotic phenomena - as semiotic marketing and product conceptualization; consumer aesthetics; rhetorical figures in ad images; motion picture mythology; corporate imagery and communication; mythology in organizations and marketing; signs of consumer identity; symbolic consumption; story grammars; gender images and myth in advertising; etc. (Umiker-Sebeok, Jean., 2012)

Semantics

The book of Kate Kearns is one of the leading scientific studies in semantics’ theory. The following concepts – generalized quantifier theory; referential opacity; lexical conceptual structure; discourse representation theory; semantic composition; narrative time; etc. are carefully studied there. (Kearns, Kate, 2011)

The book of Cliff Goddard “Cross-linguistic Semantics” examines how the different languages express one and the same phenomena in different ways – depending on the specific language and extra linguistic characteristics. The book is based on the Model of Natural Semantic Meta Language (NSM) – a framework, created by the famous world linguist Anna Wierzbicka. (Goddard, Cliff, 2008.)

Semantic field of concept risk

The concept of “risk” can be analysed from many semiotic standpoints. One of this is the semantic field. In his article Max Boholm checked out 224 words which express different aspects of risk. The author proposed 25 categories (semantic fields) in which these words can be classified depending on their ways of connoting the concept of “risk”. (Boholm, Max, 2017)

B. Vardanyan compared the notions of safety, danger and defence depending on their psychological content in Russian and English. One of the main aims of this study is the semantic fields’ structures of these notions in both languages. The results demonstrated that the semantic fields of these constructs in Russian and in English are almost similar. (Vardanyan, B, 2015)

Ina Colenciuc investigated the various semantic fields of concept of money in different cultures depending on their historical, religious, ideological, etc. characteristics. The author

defined the following fields – “functional-semantic field”, “conceptual field”, etc. and analysed their constituents. (Colenciuc, Ina, 2016)

One interesting research on this topic revealed the structure of semantic field “Good/Evil” in English. Freda Thornton analysed 9071 lexical items constituting this field. The article is important for advertising because many ads are conceptualized on the basis of this archetypal opposition. (Thornton, Freda, 1988)

Metaphor

The book “Metaphors we live by” is one of the most significant scientific researches in the theory of tropes. This book is also important for the advertising industry, because many of the creative ads are done on the basis of semantic mechanism of visual (iconic) metaphor. (Lakoff and Johnson, 1980).

Eviprides Zantides analysed visual metaphors in marketing communications from the standpoint of intertextuality. Visual metaphors and intertextuality are the two most frequently used semantic concepts in creative ads. (Zantides, 2016)

The visual metaphors enhance considerably (double, triple, etc.) the creative potential of ads. This is explored in the article “The Doublespeak of Empowerment Tropes”. (Lee, C., 2014)

Rhetorical iconic and mixed figures are the core of advertising creativity. The verbo-visual rhetorical figures – metaphors, metonymies, hyperbole, litotes, aphesis, apocope, ellipsis, zeugma, asyndeton, neologism, paronomasia, etc. are analysed in-depth from the standpoint of visual sequences in one article. (Rossolatos, 2014)

The same author studied in another research the isomorphism of visual and verbal tropes and how metaphors, metonymies and the other stylistic figures interactions in multimodal advertising texts. (Rossolatos, 2013)

The authors of the book “Aspects of Metaphor” are some of the leading scientific specialists in this field. Many important phenomena connected with metaphors, similes, similarity, tropes generating mechanisms; iconic tropes, etc., are examined here. (Hintikka, Jaakko (Ed.), 1994)

Paul Ricoeur in his book “The Rule of Metaphor: The Creation of Meaning in Language” studied many linguistic concepts, related to the various aspects of metaphor, namely – analogy attribution, changes of meaning, connotation/denotation, context, mimesis, polysemy, etc. This book is one of the most serious scientific achievements in the theory of tropes. (Ricoeur, Paul, 2004)

Litotes

The book of María Hoffmann on litotes is one of the few ones, dedicated entirely to this stylistic figure. The admen use different litotes in several ads. This is why the visual (iconic) aspects of litotes must be examined in details in advertising. (Hoffmann, María E., 1987)

Syntactics

The syntactic structures are analysed in relation with semantics and with pragmatics in the book of Talmy Givón. Syntactic phenomena as constitution and hierarchy, grammatical relations and relational control, clause union, syntactic diversity, etc. are examined here. (Givón, Talmy, 2001)

Pragmatics

The book of Wolfram Bublitz and Neal Norrick is the first of nine volume pack on pragmatics. These authors analysed the basics of pragmatics and focused mainly on the use of language in different social contexts. Some of the most important concepts with regard to the

establishment and subsequent development of pragmatics – indexicality, reference speech acts, types of inference, and so on are parts of this study. (Bublitz Wolfram, Neal R. Norrick, 2011)

The socio-cultural and psychological factors which define the parameters of effective communication are essential part of pragmatics. The authors of one book on pragmatics explore how the characteristics of communication are influenced by phenomena as age, gender, class and religion, the different actions of the communicators, etc. Because of this the authors introduced the concept of variational pragmatics. Other important points of view here are the analyses on global and intercultural communication, politeness, discourse characteristics, linguistic anthropology, etc. (Andersen, Gisle and Karin Aijmer, 2012)

Literature Theory

Theory of Drama

Dramatized communications attract constantly the customers and the other participants in this process. Because of this, the admen dramatize actively marketing communications. It is not by chance that many of the ads in this article are dramatized. This is why the theory of drama (as well as that of metaphor) is one of the most important in advertising.

Manfred Pfister studied the drama from ancient Greece to the present day. The book is one of the most valuable in this respect, since it examines the most important concepts in the theory of drama – its compositions, storylines, the main characters, their functions and actions, the different types of dramatizations, etc. (Pfister, Manfred, 1991)

In another book, the drama is analysed from the perspective of Renaissance. In most cases, the researchers examine drama only in terms of literature and to a lesser degree – in the theory of mass communication. The drama as phenomenon here is explored by the help of the paintings of some of the most prominent Renaissance artists – Caravaggio, Giorgione, Michelangelo, Titian, etc. Such research could be done with regard to the most up-to-dated communications, such as the drama in transmedia – based for example on the Star Wars movie saga or on some computer games – World of Tanks, Assassins, etc. (Phillips-Court, Kristin, 2011)

Theory of Tragedy

John Snyder's book "Prospects of Power: Tragedy, Satire, The Essay, and Theory of Genre" is one of the most valuable in terms of conflicts and their use in advertising of insurances. The insurances as specific service are closely related to the disasters, injuries and death. They are the main reasons for every tragedy. The authors also explore the connected concepts of tragedy and power and their actualizations in most important communications – in art, in media, in political life, etc. (Snyder, John, 2015)

This article examines important topics and the reasons for this are the following:

- Digital communications are the leading at the moment and in the future.
- Many scientific books and articles analyse the digital aspects of communications. The transitions between real and digital (virtual) communications however are hardly explored.

These transitions are the main topics in this article. They are quite important because these continuums (conversions) are used constantly in various communications – including advertising.

Ads of financial and other services and products are analyzed in the article from the point of view of semiotics and its four parts – alphabetic; semantics, synactics and pragmatics.

The main reason to choose semiotics as a basic research method here is that any semiotic concept is also an efficient communicative approach or strategy.

Thanks to this research, the analyzed problem can be understood better – both from the stand points of signs used and from the point of view of communicative approaches and strategies.

The limitations imposed are due to the article's volume and therefore only a small part of semiotic concepts are analyzed. Otherwise, the size of the article will be as big as the volume of large book.

The article is structured on the basis of semiotics and its parts – alphabetics; semantics; syntactics and pragmatics.

3 ALPHABETICS

Alphabetics is the semiotic branch which defines different sign systems and creates their alphabets in the form of oppositions. The main concepts in this case are sign system, opposition, variant/invariant and some others.

3.1 *Oppositions*

3.1.1 *Opposition Real (Traditional)/Digital as Communicative Approach*

This is the most important opposition with regard to this article. It reflects the classification of signs depending on their interpretations from traditional or from digital standpoints.

The admen used opposition real/digital in three ads of Visa credit cards (Fig. 1a, 1b, 1c).

Mobile phones are one of the most typical manifestations of digital communications.



Fig. 1a, 1b, 1c

With the help of these bank cards the customers can install in their smart phones application which supports and expresses the feelings of their might and greatness. This way the admen used the archetypal appeals of power. These appeals are the most universal and the most attractive for the biggest part of customers.

Admen used here iconic metaphor as communicative approach. They attributed almost mythological (deifying) characteristics to the smart phones. Using them:

- the customers practice actively extreme sports (Fig. 1a, 1b);
- the customers are the triumphant winners and thousands admirers worship them (Fig. 1c).

3.1.2 *Opposition Real/Digital and the Concept of “Continuum”*

The continuum is a concept of semantics and means prolongation – transition between two polar (opposite) points. Human life, for example, is a typical continuum – from birth to death.

The continuum could be actualized in many different communicative contexts – even in the so called “border situation”. The border in this case is the line between classical and digital communications. These borders' communications are hesitant (fluctuating) – they are neither entirely real, nor entirely digital (virtual).

The same phenomenon is actualized in some of the marketing communications of Johnny Walker whiskey (Fig. 2a, 2b, 2c, 2d, 2e, 2f, 2g).



Fig. 2a, 2b, 2c

If we look carefully, we will notice that the walking Johnny is a computer generated image (Fig. 2a, 2b, 2c). The other elements in the picture are not digital, but analogue. The talented artist made a small theatrical decor, putted Johnny Walker in it and photographed all that.

Then she uploaded the photo and processed it digitally.

On the basis of this editing, the admen created the packaging of whiskey (Fig. 2e, 2f, 2g).



Fig. 2e, 2f, 2g

The packaging replicates the initial analog-digital images. So, the artist-photographer expressed the spirit of postmodern era which is between reality and virtual (computer-mediated) world.

3.1.3 Characteristics of Digital Signs – Transformations of Traditional (Analogue) Signs into Digital Ones

People read easily different verbal texts on computers' screens (monitors). Because of this they communicate without any particular problems with the computers. In fact computers interact with us using much more abstract signs and texts, which we do not see on the monitors.

This phenomenon is demonstrated very well in the film "Matrix". Coded information is flowing constantly on the monitors of this film. The protagonists – members of Resistance read this coded (very abstract) information quite easily – in the same way the ordinary people read normal verbal texts.

Monitors with similar encoded information are demonstrated in an ad for technological university (Fig. 3a).



Fig. 3a

The ad headline states that video games without proper management and communication are not video games.

The ordinary people are not with the high IQ level of Matrix' heroes and they will never be able to communicate with the highly abstract digital signs in their extreme computer formats.

But when the students will finish the advertised university, they will handle these abstract signs without any problem and they will interact easily with their help.

3.1.4 Variant/Invariant

The linguistic concept “variant” is one of the most important in phonetics. It means that people pronounce one and the same sound with small differences - because they are female or male, sick, hangovers, and so on. The main characteristics in the articulation of the sound remain one and same (the invariant), but there are also minor differences (the variants). They determine the numerous ways by which people pronounce one and the same sound.

Another important characteristic of digital signs is the fact that the communicators can multiply their variants quite easily.

Typical example of this is a series of computer-edited images (Fig. 4a, 4b, 4c).

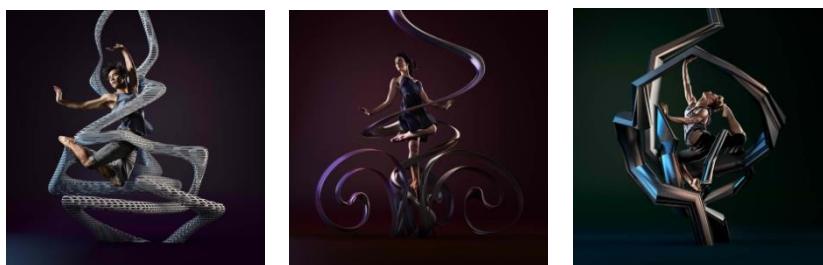


Fig. 4a, 4b, 4c

The human figures in all of these pictures are surrounded by variety of computer generated materials.

3.2 Semantics

Semantics is the semiotic science which studies the meanings of signs. It consists of two parts:

- The first one explore different semantic concepts – semantic field; semiosis; intertextuality; zero morpheme; denotation/connotation; diachronia/synchronicity; semiotic compensation; semiotic translation; over-semiotization; redundancy; semiotic idiom, etc.;
- The second one analysis the stylistic figures – comparison; metaphor; metonymy; personification; hyperbola; litotes, etc.

3.2.1 Semantic Field and Its Digital Dimensions

Semantic field is the sum of all signs by which communicators can express some phenomenon.

People create and use a lot if signs to express the respective concept, if it is important for them and vice versa. For example, there are about three thousand words in Arabic languages for the camel. The Eskimos use about fifty separate words to communicate the different types of snow. Semantic field of the different illnesses, created and used by the doctors, is very rich in comparison with the semantic field of ordinary people for the same phenomenon.

Each linguistic and semiotic concept is also a communicative approach. Admen use often semantic field as communicative approach in advertising.

Suitable example of this, are 3 ads for mobile phones. These devices are some of the most typical tools of the digital era. In this case, admen used their colours (Fig. 5a, 5b, 5c).



Fig. 5a

The green colour of mobile phone is the sign which stands for ecologically conscious customers (Fig. 5a). That is why admen putted many other objects by which they actualized the semantic field of ecology – articles for sport (bicycles, ping pong rockets); green frogs; green clothes; as well as the image in the monitor – digital green peas. Everything in this image demonstrates that these eco-customers are hipsters.



Fig. 5b

The orange colour of mobile phone is typical for the sport because it is the colour of energy (Fig. 5b). That is why there are many images which constitute semantic field of sport – sport equipment (skate board, ball, etc.); sportswear, and the image in the monitor – a digital skateboard.



Fig. 5c

The pink colour of mobile phone is typical for the girls because it expresses (communicates) the idea of romantics (Fig. 5c). This the reason why admen used semantic field of femininity – pink clothes; pink scooter Vespa; eyewear; puppy; asterisks; hearts, etc., as well as the image in the monitor – digital pink nails.

The semantic field is also the main communicative approach in another three images (Fig. 6a, 6b, 6c).



Fig. 6a, 6b, 6c

Here the colours also determine the choice of the respective objects in each image.

3.2.2 Digital Connotations (Emotional Accumulations)

Two of the basic concepts in semantics are “denotation” and “connotation”. Denotation means non emotional (neutral, “dry”) signs, texts and communications, and connotation – emotional signs, texts and communications.

Admen connoted digitally two photos of car (Fig. 7a, 7b).



Fig 7a, 7b

They did this by adding computer-generated architectural objects. So, the admen expressed emotionally (connoted) the meanings of technological future.

Similar is the effect, done with the help of digital connotations in pictures of sport car (Fig. 8a, 8b).

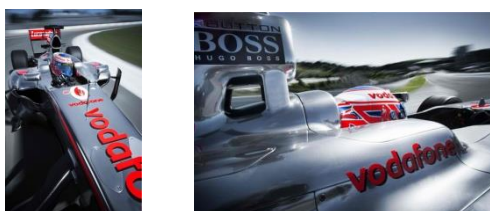


Fig. 8a, 8b

Here the semiosis (the way by which the signs function) is slightly different. Admen did not put additional artefacts – they only edited digitally the already created photos. By this the connotations of the cutting-edge technologies was transferred to the car’s images.

3.2.3 Digitized metaphors

Metaphor is the stylistic figure of transfer. By its help the communicators assign (relocate) attributes of one object to another one on the basis of common characteristics (similarity).

The admen also create digitally edited metaphors. Five ads of pizza are suitable examples in this regard. These ads communicate the fact that the customers can track on Internet the pizzas’ delivery (Fig. 9a, 9b, 9c, 9d, and 9e).

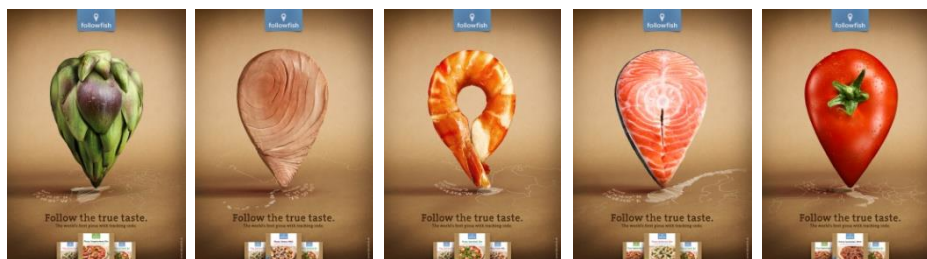


Fig. 9a, 9b, 9c, 9d, 9e

The hungry and impatient pizza lovers can track the delivery of their favourite meal by the help of chip putted in the pizza box.

The admen metaphorized the specific computer sign which show on the computer maps where the pizza is at the specific moment. They used the trope mechanism (the transfer) by assigning characteristics of pizza ingredients – fish, ham, tomatoes and so on to the signs-markers of computer maps.

Similar metaphor had been used in an ad of expensive clock (Fig. 10a, 10b).



Fig. 10a, 10b

The communicators attributed characteristics of a stadium to a clock. The similarities in this case are two – the shapes of the clock and the stadium are coinciding – respectively circle and ellipse. The second connecting characteristic is the movement of time.

The art director edited the clock surface as stadium, divided into sectors for various sports – horse racing, tennis and football. At the same time the admen left the other attributes of the clock – its outer circle with the mechanisms and the arrows.

This way they connected the sport with the clock in a single visual (iconic) text – editing it digitally and metaphorically.

Three digital metaphors, which visualize a football tournament in Detroit – “Bring MLS soccer to Detroit” (Fig. 11a, 11b, 11c), used similar approach.



Fig. 11a, 11b, 11c

The process of metaphorization was the following:

- The admen shot parts of the city early in the morning.;

- Then they photographed the players in a studio with light and tones which are typical for the night.;
- Finally, they combined digitally the different photos.

The stylistic figure in all four pictures is metaphor. The reason is that the admen attributed characteristics of a football field to the streets of Detroit. The four digital metaphors illustrate and support the ad headline – to bring back football in Detroit.

Two ads for e-banking are also created on the basis of digital metaphor (Fig. 12a, 12b).

The admen edited two picture of bank furniture, transferring to them the characteristics of the wi-fi – in order to express the concept of e-banking.



Fig. 12a, 12b

This metaphorical solution is probably not the best. The reason is that e-banking eliminates completely the physical offices. Obviously the physical bank office is very important for the admen who created the two ads. It is due to the fact that the admen continue to think from the point of view of the physical (real) space, and not from the standpoint of digital (virtual) one. Spatial metaphors are also actualized in another three ads for insurance of extreme sports (Fig. 13a, 13b, 13c) – in order to express the idea of security by the help of the images of safe space.



Fig. 13a, 13b, 13c

The athletes exercising these outrageous sports can damage severely their bodies because of the big and sharp stones. That is why the sportsmen need insurance – in order to reduce the financial burden of the expensive hospitals.

For this reason the admen edited the terrifying spaces surrounding the sport adventurers.

They replaced the sharp stones and rocks with soft objects – pillows, teddy bears, soft balls, and so on.

3.2.4 Oppositions

The contrast (opposition, counterpoint) is stylistic figure which is done by connecting two verbal, iconic, etc. signs which have opposite meanings. The contrast is the stylistic figure with the highest dramatic (conflicting) charge. This is very important (crucial) for the success of communications, because the drama is intrinsic part of effective communication.

The admen used this stylistic figure in a digital variant in four ads for insurance (Fig. 14a, 14b, 14c, 14d). The reasons for this are the social networks – some of the brightest manifestations of digital age in media space.

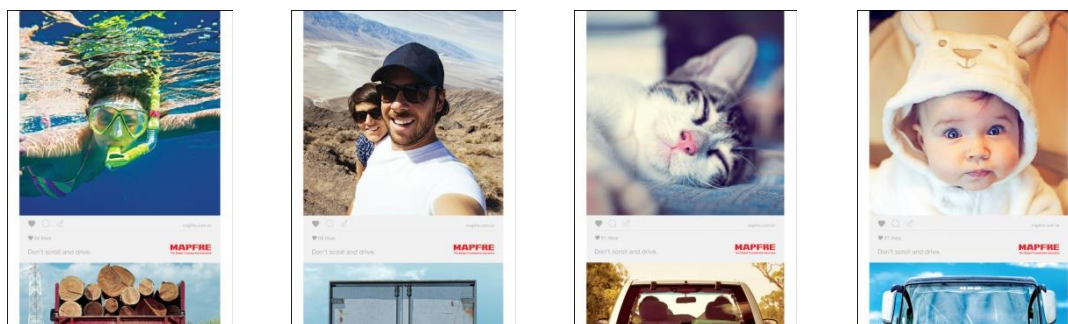


Fig. 14a, 14b, 14c, 14d

The headline of the four ads is “Do not scroll and drive.” The argument is that the drivers could be distracted fatally by the cute web pictures – images of dear friends, babies, kittens, and so on.

They must not look at these sweet images during driving, because the death is near by – huge trucks loaded with logs; big vans; buses, etc. They will smash the inattentive drivers, if they are not careful. This way the admen created stylistic figure visual (iconic) opposition” connecting contradicting (opposite) signs – these of pleasant life with the images of cruel and sudden death.

3.3 *Syntactics*

Syntactics is the third semiotic branch which studies the different connections. With their help the communicators create the texts.

Connections of stylistic figures – digital metaphors and digital litotes in one and the same stylistic figure.

Some of the most interesting but not explored connections are the combinations of different stylistic figures. Admen relate constantly two or more stylistic figures. They do this all the time because creativity in advertising and in other marketing communications largely depends on the use of stylistic figures.

Litotes is the stylistic figure of understatement (reduction). It is the opposition of hyperbola – the stylistic figure of amplification.

The admen used both digital litotes and digital metaphor in three ads of Russian mobile operator Билайн, (Fig. 15a, 15b, 15c).



Fig. 15a, 15b, 15c

At the beginning, the admen metaphorized the digital signs for the social networks, Skype, etc. in the form of suitcases and bags. After that they reduced (litotized) these metaphorical images.

In this way the admen expressed the idea that a lot of “internet luggage” can be accommodated in a very little space – in the smart phones.

3.4 Pragmatics

Pragmatics is the semiotic branch which studies the signs depending on the attitude of people towards reality. The phenomenon is one and the same, but the communicators' attitude to it is different. Communicators use dissimilar, even opposite signs for one and the same thing – depending on these differences.

The concept “appeal” in advertising and other marketing communications is closely related to pragmatics. The appeal is the main psychological drive which attracts customers to the advertised commodity. The appeal reflects the attitudes of customers to reality and this is the main reason why the psychological appeals are intrinsic and very important part of pragmatics.

The power is most important appeal. The reason is that each of the customers on a subconscious level thinks that she/he is the greatest being in the universe.

The three Visa credit cards ads (Fig. 1a, 1b, 1c) are some of the most appropriate examples in this respect. The main argument is that the admen presented the customers as absolute (sublime) winners – with the help of archetypal appeals of power.

3.4.1 Archetype appeals

These are the appeals on subconscious level, which express the idea of power and greatness. They are the most universal and the most attractive appeals for the majority of us.

One financial company used variants of archetype appeals and spatial metaphors in three insurance ads (Fig. 16a, 16b, 16c).



Fig. 16a, 16b, 16c

Admen actualized in a very creative way the archetypal opposition inside/outside. The outer space is dangerous, and the internal space is safe. Protection as psychological phenomenon is closely related to the idea of power.

Because of this the communicators attributed to the outer space (stops of public transport), characteristics of internal spaces – rooms (Fig. 16a), offices (Fig. 16b) and garages (Fig. 16c).

The admen transferred very creatively the characteristics of protected interior spaces to the unprotected, outer spaces. This way they communicated very creatively the need of insurance.

The outer spaces in this case are the real, and the interior spaces, depicted on them, are the virtual ones. There is no equality between the concepts “virtual” and “digital” here. That is, these two concepts are not necessarily synonymous in all communicative contexts.

4 CONCLUSIONS AND RECOMMENDATIONS FOR THEORY AND RESEARCH

The people are already in the digital era and the biggest parts of communications are partly or fully digitized. This means that communications and their signs are radically changing.

Shifts are both on content and formal levels.

Digitization at a content level means that the monopoly of addressants (politicians, journalists, admen) with regard to communications is overmastered (or even completely destroyed) and this is the end of unilateral communication.

The addressees (to whom the communication is intended) with the help of social networks start to rule the communication, transforming themselves from passive to active participants in the communication processes.

The signs in the digital surrounding are also changing and these are some of the main trends in this respect:

- The communicators create more signs and texts in shorter time;
- It is much easier for them to edit the signs and the texts;
- The communicators can create more variants of one and the same sign, etc.

As it can be seen, there are many new creative solutions to express the transitions between real and digital signs.

Semiotics and linguistics are highly developed sciences with thousands years of history and experience. On this basis the highly trained semioticians and linguists can analyse easily the new aspects of digital signs, texts and communications.

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THE EFFECT OF MARKETING ACTIVITIES ON THE PROFITABILITY OF COMMERCIAL BANKS IN THE REPUBLIC OF SERBIA

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ABSTRACT

The main purpose of marketing in banking is to attract, retain and develop long-term relationships with clients and other stakeholders. Marketing analysis can help identify the benefits and disadvantages of marketing within the banking sector of Serbia and provide a platform for the strategic planning of its further development. This paper presents the relation between the assets allocated to advertising and promotional material and the profit realized, putting an emphasis on showing the positive correlation between these two variables. The research was based on publicly available annual reports of banks, and since the data of the five largest banks in the Republic of Serbia which hold a market share of around 60% was used, we believe that the obtained results largely approximate the performance of the entire banking sector of Serbia.

Keywords: banking marketing, banking management, consumer loyalty, bank reputation, trust, advertising costs, profit

JEL: M31

1 INTRODUCTION

Until the mid-1950s, marketing was seen as being reserved for production activities, and as such bankers did not focus on it. It was only by the end of the 1950s and the beginning of the 1960s that the idea of utilizing marketing expanded to service activities as well. Since then, the perception of marketing in the banking industry has changed and today it is considered as a synthesis of the analysis, planning and control of the bank's operations on the market [1].

Intensified financial disintermediation, liberalization of interest rates, and development of online banking have reduced the profit margins of the traditional lending business in commercial banks [2]. In our part of the world, the application of marketing in service activities only began in the 1970s. Of course, this initial period of the application of marketing in service activities was not exactly about the concept of marketing, but about the concept of economic advertising and promotion [3]. The results were immediate; the banks that first began advertising managed to attract new depositors and thus increased their deposit potential. These activities affected the competing banks, which were forced to begin with the same marketing activities of their own as soon as possible. This competitive activity neutralized the advantages of the banks that began their advertising activities first.

The primary aim of this paper is to raise the public awareness of the specifics of the application of marketing within the banking services sector and to support the successful implementation of business marketing philosophy. The secondary aim of this paper is to inform the public about the effects of marketing on modern banking and to provide answers to basic questions related to providing banking services to clients, which is most efficiently

achieved through strategic management based on marketing principles, as commercial banks need to be market-oriented if they wish to ensure their survival, growth and development.

2 TRUST IN THE INSTITUTION – THE CORNERSTONE OF THE LONG-TERM POSITIONING OF A BANK

The effects of globalization, and therefore the liberalization of the movement of people and capital, as well as changes in regulations around the world, significantly influenced the trend of modernization and change in the way banks operate. Increased competitiveness due to the emergence of a large number of foreign banks on the domestic market has brought about a new marketing culture, but it has also created a need for the general public to be familiarized with the various segments of banking operations [4]. Marketing and concepts related to marketing have faced with many changes in the current age [5].

The expert community is provided with more and more opportunities to gain an insight into the current trends and innovations in banking through scientific conferences, while the general public can get information about all of the different services that banks offer thanks to the openness of the media and marketing campaigns. Selecting a part of marketing mix, which differentiation gives the product more competition ability in the foreign market, will become feasible thanks to those marketing researches which be conducted to determine the filed of consumer preferences and expectations in different markets and prioritizing them [5].

Banking service users quickly realize that banks are all basically similar and that their main difference lies in the symbols and slogans they have selected for themselves. We find strong evidence that systemic risk increases with bank size [6]. Addressing this question, informs the current debate about the efficacy of different ways of intervening and dealing with distressed banks and helps fill a gap in the literature that lacks empirical evidence on whether regulatory interventions and capital support are beneficial [7]. Banks facing conditions of strong competition need to find new ways to differentiate themselves from the competition. This leads to the development of new services such as credit cards, automatic bank loans, electronic banking, as well as the providing of insurance services. Innovation in the range of services offered to clients represents a new competitive tool for banks, created by their management. Some well-known banks in developed economies provide hundreds of types of different financial services to their clients – and that is why customer loyalty is one of the most commonly researched areas in contemporary marketing [8].

The existence of a positive link has been proven between the satisfaction of the service users and their loyalty, demonstrated by the readiness of users to keep using and to accept new services that the bank provides. Given that the increase in revenue is closely linked to the construction of long-term relationships with clients and their acceptance of the bank's additional offerings marketed through cross-selling, customer satisfaction proves itself to be of paramount importance and banks aim to provide it. It can be concluded that the target group for building real loyalty or extending the group of clients who are truly loyal to the bank are the falsely loyal clients whom the bank dedicates itself to in an attempt to build long-term relationships with them. In this respect, it is necessary to create an appropriate information system in order to provide information about the differences and habits of individual client segments [9].

However, the fact that users do not often change the bank does not necessarily mean that they are satisfied with it, and even less so that they are loyal to it. They can generate expenses for the bank, taking into account their frequent objections and, consequently, the problems they produce, because of which the bank must utilize additional assets that exceed their actual value. Inertia prevails among account users, regardless of whether they are personal or

business account users. These facts should be kept in mind because of the danger of the possibility that the user's inert behavior may be replaced with brand loyalty.

One analysis prescribes that all users are to be treated as competitors. In this sense, it is possible to distinguish:

- non-competitive users, i.e. users who consider keeping up with the competition and its offerings as unnecessary and a waste of time, that is, those who are ready to enter a peaceful relationship with the bank;
- passive users who keep up with offers from other banks but are not ready to change their buying habits just so that they transfer to a competitor;
- active users who are ready to change their everyday behavior and accept attractive services offered by the competition.

This analysis can be applied to people who use some of the bank's services, have a fixed deposit or use a loan. The user will switch brands depending on the attractiveness of the competition's offer and the effect of the following factors: entry costs, reward value, number of the rewards or the perceived probability of being rewarded, enjoyment of the competition and the desire to fulfill free time. The importance of the final two factors may be overestimated, in the context of rational decision-making. The following table shows the results of the analysis of the clients' demands for additional value for the services provided by the bank.

Table 1. Results of the analysis of the clients' demands for additional value for the services provided by the bank

| | Importance | Services provided by the bank | Readiness to allocate additional resources |
|---------------------|------------|-------------------------------|--|
| Security | 90% | 80% | 25% |
| Rewarding | 70% | 32% | 19% |
| Wealth building | 61% | 37% | 31% |
| Individual approach | 63% | 40% | 19% |
| Cash management | 48% | 39% | 15% |

Source: [10]

The displayed numerical indicators show that there a significant deviation exists between what the banks' offerings actually are clients' perception of what they should be receiving with the service. The CGI Group's study also lists the clients' specific desire relating to the reception of loyalty awards from the bank. According to them, 81% of clients wish to receive a reward of some form for doing does business with the bank. As many as 61% of clients expressed a desire for having access to their banking services at all times, 58% of clients want the bank to view them as individuals, while 55% expressed their desire for advisory services for building their wealth, and 52% of clients want quality information on how they are spending money and in what ways they could be saving it when spending. The rewards occupy the worst position, as only 32% of respondents said that they were satisfied with the level of rewarding. In all tested questions, the degree of satisfaction is lower than the demanded level.

Some scientific books and articles analyse the subconscious from the point-of-view of advertising and marketing [11]. For a bank to be able to survive on the market and to stay competitive it must at all times be aware of its capacities and weaknesses, the needs of the users it provides banking services to, the activity of the competition and market impulses as well as of how to utilize its capacities for these purposes even better. Regardless of whether it has already had a presence on the market for years or if it is just establishing itself on it, a loss of reputation presents a major threat for every bank. The key word that appears in almost all campaigns in this area is "security" and it represents the basic precondition for the public's

positive image of the bank. Security and safety are in a causal relationship, and without them a bank cannot have a positive image. The greatest risk to the bank's operations is the loss of reputation and a crisis of confidence. Reputation may be lost due to negative publicity, especially if speculation arises amongst the public about the bank being involved in some sort of affair. A bad public image can be caused by the careless departure of clients and employees. Another threat for the bank's reputation is information about suspicious individuals, terrorist or criminal groups opening accounts in certain banks. Factors that can undermine the reputation of banks include the detection of major frauds involving the bank's employees, the inadequate training and protection of employees, negative media campaigns, etc. Simply put, banking relies on mutual trust. Depositors who deposit money must have confidence that their money will be safely returned, and even increased by interest; while on the other hand, the bank must have confidence in its clients, credit users, that they will be able and willing to repay the loans which they have taken out. How can the security of a bank be recognized? The security of a bank stems from the professionalism and strength of its shareholders and financial results, as the basis for long-term and stable operations, and from the quality and responsibility of its management and all of its employees. In addition to the security and the necessary confidence in the bank, the client should also, of course, keep mind the quality of the service provided and the price of the service, and expect a relation of partnership with the bank.

3 CORRELATION BETWEEN THE COSTS OF MARKETING ACTIVITIES AND THE LEVELS OF PROFIT

Marketing sector is one of the company's sectors in which it is highly needed to intensify the level of employees' involvement because the survival and prosperity of the company depends on the quality of marketing decisions to great extent [3]. The Bank's management realizes that it is easier to attract clients than to gain their loyalty to the bank. To this end, banks work on the careful selection and training of the staff members who interact with clients directly, and rearrange the interior and often the exterior of the bank as well. The competitors waste no time when it comes to these matters either, they undertakes the same or similar activities, so that they quickly catch up with the "innovator bank". The bank continues to fight competition in order to survive on the market, strengthens its identity and tries to create an original image. Based on the created image, it tries to make itself stand out from others by choosing a specific symbol – a sign by which it is recognized and a slogan that should represent its success, strength and its focus on clients.

The following table shows the amount of funds allocated to advertising and promotion, according to the data from the consolidated annual reports from the websites of the observed banks. The selected banks represent the largest banks in the Republic of Serbia in terms of the amount of net balance assets, according to the data from the Report for the IV quarter of 2018 of the National Bank of Serbia [13].

Table 2. The advertising and promotion expenses of the 5 largest banks for the period of 2010-2017, expressed in thousands of RSD

| YEAR | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| BANCA | | | | | | | | |
| Banca Intesa | 704.232 | 735.776 | 355.296 | 280.923 | 340.153 | 320.485 | 271.304 | 264.023 |
| Komercijalna banka | - | - | - | - | - | - | - | - |
| Unicredit | 53.001 | 85.404 | 77.169 | 199.399 | 291.375 | 284.774 | 324.738 | 305.170 |
| Societe Generale | 102.899 | 196.210 | 175.756 | 137.483 | 148.563 | 188.742 | 211.288 | 216.657 |
| Raiffeisen | 241.772 | 267.611 | 335.979 | 279.669 | 331.942 | 228.319 | 292.388 | 234.474 |

Source: The author's calculations based on the consolidated annual reports

Table 3. Results for the period – the profit/loss of the 5 largest banks for the period of 2010-2017, expressed in thousands of RSD

| YEAR | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--------------------|-----------|------------|------------|----------------|-----------|----------------|----------------|------------|
| BANK | | | | | | | | |
| Banca Intesa | 8.456.120 | 10.689.734 | 10.304.582 | 9.217.742 | 6.808.703 | 8.584.579 | 9.924.343 | 11.847.694 |
| Komercijalna banka | 2.791.964 | 3.952.066 | 4.572.662 | 4.588.376 | 4.785.577 | - 6.299.631 | - 8.063.183 | 8.117.368 |
| Unicredit | 3.932.909 | 5.046.618 | 4.921.660 | 3.699.205 | 5.464.805 | 6.366.383 | 6.226.600 | 6.633.319 |
| Societe Generale | 1.769.265 | 1.529.908 | 116.091 | - 1.214.144 | 368.522 | 2.063.461 | 3.684.585 | 6.030.737 |
| Raiffeisen | 2.900.461 | 5.308.209 | 6.124.259 | 6.155.906 | 5.227.634 | 4.341.952 | 5.411.291 | 6.626.785 |

Source: The author's calculations based on the income statement of the banks from the NBS website

4 RESULTS AND DISCUSSION

The presence of a positive correlation between the expenses for marketing activities and profits will first be considered on a hypothetical level. If we exclude other variables that affect profitability (measured by ROA, ROE, EM, AU, etc.), by the growth of the clients' confidence in the bank, and therefore the deposit potential, the amount of the bank's deposits and market share, it can be concluded that utilizing banking marketing positively affects the overall profit of the bank. Through investments allocated primarily to advertising and promotional materials, a bank creates an image of itself in the minds of consumers, through a more pronounced presence in the media, the bank puts "invisible" pressure on clients who are making their final decision about which bank they will choose.

If we compare the investments in marketing activities and the result of the period – the profit, the previous two tables show that the increase in the funds allocated to advertising and promotion in the previous year is in a positive correlation with the increase in profits in the following observed year. Data on the results for the period of 2018 is still not available, and we will be discussing the analysis ranging from 2010 to 2018.

Banca Intesa has been a leader in the banking market of the Republic of Serbia for decades. It has maintained a market share percentage of 13-15% during the observed period, while other banks occupy 5-10% of the market share. One of the reasons that it exhibits such a successful trend is certainly its well-designed long-term marketing strategy. The evidence for this lies in its loyal clients who recognize that "the strategy of the bank has remained focused on the continuous improvement of products and services following the real needs of clients" [13].

Banca Intesa has also been monitoring the level of customer satisfaction from year to year by performing research through the Net Promoter Score (NPS) application. In all of the observed years these results unambiguously show the bank's leadership in the area of the satisfaction and loyalty of clients. Banca Intesa also boasts the highest percentage of clients who would be willing to recommend its services to their friends and family.

After their loss in 2013, Societe Generale AD has managed to operate with a constant profit since, while also constantly increasing the amount of assets invested into marketing activities. Generator Flue, Inclusive Academy and many other projects have caused Societe Generale to attract and retain more clients, presenting itself as a socially responsible company. Tour de Soge was one this bank's affirmative programs, designed to support young people, with several of them getting jobs, and with one of the ideas being the opening of new chapters in the communication with the public, as banks today, more than ever before, must learn from their potential users.

In 2015, Unicredit AD Belgrade reduced its investment in advertising and promotion, which had an impact on the profit of 2016. Considering the growing importance of social media, both globally and in our country, in 2017, the bank presented completely different

topics and formats on Facebook and Instagram. Along with enabling a greater number of followers these changes also allowed for better interaction with clients, and we will be able to see the effects of this on their profit with the publication of their financial reports in 2019.

Regarding digital banking, Raiffeisen Bank has been a pioneer in the market from the very beginning, as it was the first bank to offer Internet banking back in 2001. As it invested more in communicating with the public, the profit oscillated, with a constant amount of about 6 billion RSD.

Komercijalna banka AD Belgrade is in second place, with a share of 11.00%, however, due to the amount of funds allocated to advertising and promotion not being publically available, it was not possible to analyze how it relates to profit quantitatively, so instead we dealt exclusively with the description of their marketing activities. In the process of monitoring the trends of the market trends, the needs of current users and attracting potential new clients, during the observed period the business sectors of Komercijalna Banka offered special offer loans to the public and microclients and developed a satisfactory, for the conditions of our country, range of products/services in the segment of electronic banking and payment cards.

The high-quality exploitation of the title sponsorship of the Kombank arena, as the most prestigious sports and concert facility in the country, was continued. Even with the reduced number of musical and sports events in 2015, recognition was maintained at a high level and even strengthened, so 2015 can be marked as a definite “win” for the name of Kombank Arena, which has also had a positive impact on profit, given that from the moment of the conclusion of the title sponsorship agreement, profit has been increasing from year to year.

5 CONCLUSIONS

In addition to traditional communication channels, banks are forced to communicate with existing and future customers through social media networks: Facebook, Twiter, Youtube, Google+, Instagram, Linkedin. Through this, the effects of promotion are brought to a higher level, as the benefits of both traditional and modern media can be utilized. If the bank has allocated high amounts of funds to marketing costs in the past years, without determining the marketing strategy at the level of the entire bank, it is exposed to the problem of high operational expenditures, and consequently the risk of insufficient growth and development, that is, the risk of inadequate banking marketing. The consequences of this problem are the loss of confidence due to the discontinued utilization of marketing activities, which sends a negative message about a possible crisis within the bank, which may result in far more complex negative effects. In market economies during the 1980s there was an increased need within banking and financial institutions for the use of strategic planning leverage as a means of reviewing the market position, and finding the most favorable methods for strengthening these positions in the future as a result of the deregulation of the financial sector, globalization and the increase in competition. Keeping in mind the environment within which they operate, the process of accepting the concept of marketing is inevitable, both for companies and banks.

In order to avoid risk during long-term arrangements with its clients, a bank must have a clear picture of those clients as well as of the expected events during the realization of these long-term arrangements. Risk minimization and successful completion of business can only be achieved by applying the concept of marketing. Every bank should be aware that, in conditions of increased competition in the deregulated market, they must not only retain existing customers and clients but also acquire new ones through the quality of their offerings.

In other words, the application of marketing is a necessity without which there is no rational and efficient achievement of goals and minimization of business risk. The market and the competition are the strictest judges who will punish even the smallest lapse.

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THE IMPORTANCE OF APPLYING MODERN TECHNOLOGIES IN BUSINESS

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ABSTRACT

This paper presents the importance of successfully applying modern technologies on the modern market. The aim of the research was to analyze the data related to the fact that modern technology is used in order to achieve business performance. The aim of the research was also to look at and analyze business practices on the territory of the Republic of Serbia in comparison with the activities of the other countries in the region regarding the application of modern technologies. The results of the survey point to the fact that countries differ significantly in terms of the funds invested in high technology. Also, the results indicate that there is no absolutely proportional relationship between the investments of high technology countries and the innovativeness of companies in those countries. The Republic of Serbia has a significantly lower investment in high technology compared to countries in the region, but it also belongs to the group of countries with an average percentage of innovative enterprises.

The results of the research also point to the trend of growth in the Republic of Serbia in enterprises of all sizes regarding the use of the Internet and websites in everyday business applications.

Keywords: technology, business, venture

JEL: O30

1 INTRODUCTION

Modern markets are significantly different from the previous markets in terms of the representation of competitors, product lines, demand variables and supply. A modern lifestyle promotes consumer culture which has in turn significantly influenced the demand for diversity, innovation and product availability. The extent to which organizations will be ready to adapt to modern trends in business depends on different factors: organizational culture, capital structure, availability of modern technologies, the country's infrastructure potential, the top management's vision, personnel potential, market capacity, customer standards, etc.

Changes in the technological sense occur on a daily basis. The speed of change is constantly increasing, so there is pressure on those organizations that are already at the very start lagging behind in relation to modern organizations regarding the application of modern technologies and the communication system.

An example of innovative methods in banking refers to the implementation of Internet banking as a relatively new channel for the distribution of banking products and services.

More and more people accept the advantages offered by Internet banking in terms of a significantly shorter time to service clients. Thus, those clients who have noted the advantage of Internet banking can carry out transactions 24/7 without waiting [1].

The modern market imposes modern methods of advertising and promotion of products in terms of the application of social networks as modern marketing channels. Given that many

industries are exposed to constant change, it is common for managers to understand how they must relate to changes in the business environment and how to adapt a business model so that their organization can gain or maintain a competitive edge [2].

There are a large number of newly established companies that conduct their business exclusively via the Internet. These companies use significant benefits in terms of reducing the cost of doing business and thus they generate higher profits. The fact is that there are a significant percentage of customers and business cooperatives who continue to apply immediacy when buying or organizing business arrangements. Organizations would therefore like to practice a combination of the inertia of traditionally oriented clients on the one hand and the determination to accept the innovative methods of modern business on the other.

Today, information and communication technology is moving in a direction that implies the omnipresence of computers. This concept refers to an environment in which computer technology permeates almost everything, enabling users to access and control their environment at any time and from anywhere [3].

The three most critical driving factors in today’s business environment are the following: the Information Revolution, technology and globalization (Chart 1). The Information Revolution is a factor that has largely determined the standard of business in a modern business environment.

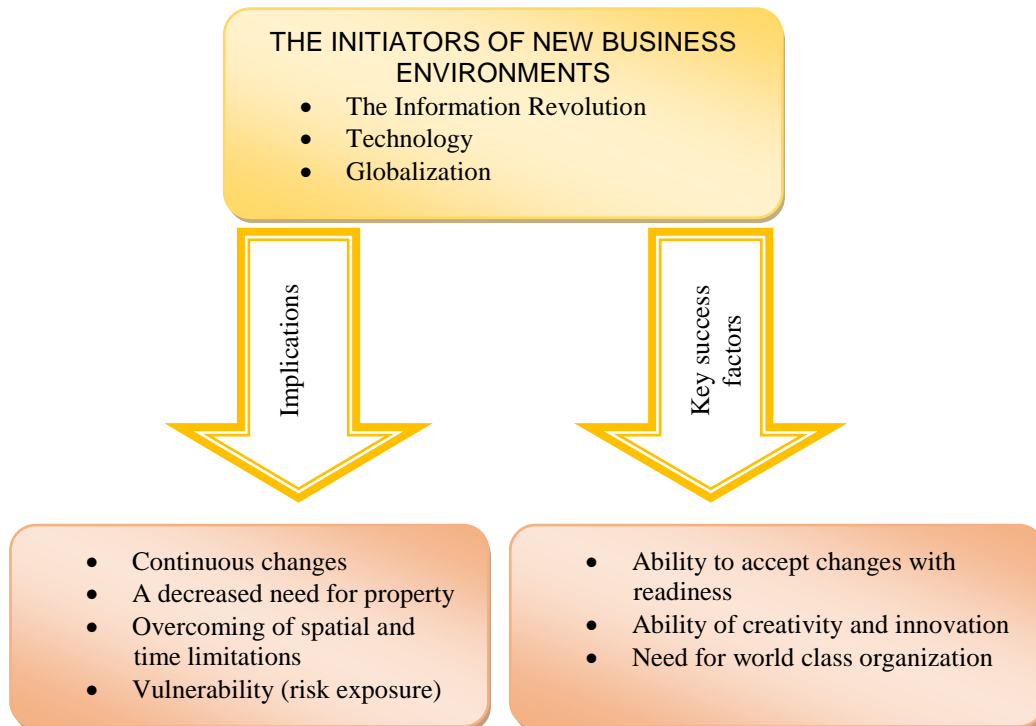


Chart 1. The initiators of new business environments. [4]

The organizations that are willing to accept changes in the environment, those which emphasize creativity and innovation, have all the prerequisites to become dominant subjects in the business environment.

Modern business entails the constant use of applications that involve the use of modern technologies (computers, tablets and mobile phones). Electronic trading applications are a new type of customer interaction that requires the system to be flexible and capable of rapidly negotiating new opportunities [5].

Organizational culture shows an acceptable way of behavior, communication, and business activities on the level of the overall organization. It represents a behavioral pattern that is

specific to each organization and to a considerable extent determines how the organization works. Organizations that have an organizational culture that promotes openness and flexibility are organizations ready to implement new technologies in their everyday business.

The role of the state in the promotion of modern business methods is reflected in the establishment of a business environment that is supported by modern technologies. The application and development of modern technologies is conditioned by the development of an infrastructure that is the basis of the development of modern business. In fact, a fast Internet and server support are the basis for the development of modern communication and business.

The role of the state relates to the creation of a business environment that will prevent monopoly and enable the constant development of telecommunication services with an emphasis on a free correlation between supply and demand. The institutional support of the state also refers to the implementation of modern technologies in the public sector in order to improve the quality and quantity of services and to accelerate business flows.

For the purpose of the country's long-term economic development, a strategy for the scientific and technological development of the Republic of Serbia for the period 2016-2020 has been defined. Within the framework of this strategy, and as a result of the dissatisfaction of the line ministry in terms of insufficient results of the previous reform, specific objectives have been defined:

1. Encouraging the excellence and relevance of scientific research in the Republic of Serbia;
2. Strengthening the links between science, the economy and society in order to foster innovation;
3. Establishing an effective system of scientific and innovation management in the Republic of Serbia;
4. Ensuring the excellence and accessibility of human resources for science and economy and social activities;
5. Improving international cooperation in the field of science and innovation;
6. Increasing investment in research and development through public funding and encouraging investments by the business sector in research and development.

Within the second goal mentioned above, one of the primary tasks of the restructuring of the R&D system of the Republic of Serbia is to provide mechanisms for supporting the inclusion of part of the research potential of development into enterprises through joint technological development projects of private enterprises and scientific research organizations [6].

Many experts believe that new organizational strategies should be based on new structures and the production of goods and services with the lowest costs and the highest quality. The prerequisite of a successful society are successful firms in a competitive environment which requires a strong and autonomous workforce. Entrepreneurship, creativity, innovation and risk acceptance are the key factors for the economic development of the country [7].

Personnel capacity is an important factor determining the willingness of an organization to adapt to modern business trends. Organizations that have a larger number of young people in their structure who have adequate knowledge about the use of modern technologies have advantages over organizations engaging older employees who are unfamiliar with modern technologies. This is the reason why a large number of newly established companies are designated for younger staff which has an advantage in terms of certain foreign language skills and the application of modern technologies, regardless of a lack of experience. The policy of these organizations is more focused on instruction in the form of courses and mentoring, as well as training, so their commitment to younger staff is quite logical.

2 METHODOLOGY

Official data of the European Statistical Database, as well as the Republic Statistical Office of the Republic of Serbia, were used for this research. A descriptive analysis was used to clarify current trends. The survey covered statistical data relating to the period 2008-2018, data on a number of countries, with table data for the Republic of Serbia, the countries in the region, as well as other countries whose results are quantified.

3 RESEARCH RESULTS

The research conducted by Mahsa Behrouz and Nasser Fegh-hi Farahmand highlights the priority factors that influence high technology investment in the province of East Azerbaijan.

The results of this research suggest that politics, customs rates, relative price stability, transparency in production, transparency of information and statistics, lack of discrimination, stability in rules and regulations are the most important factors for attracting new high-tech investments. Other significant factors are also the existing infrastructure and effective management [8].

One of the researches carried out on the territory of Eastern Serbia (the Bor and Zaječar Districts) is part of the project entitled “Strengthening the innovative capacity of the SME sector in the region of Eastern Serbia” which encompassed 165 small and medium-sized enterprises (SMEs). The research was carried out by the Regional Development Agency for Eastern Serbia-RARIS in cooperation with the Regional Center for Sustainable Development and Entrepreneurship Timok Zaječar, with the active participation of the National Agency for Regional Development. Figure 2 shows the structure of the innovation activities of 165 SMEs in Eastern Serbia.

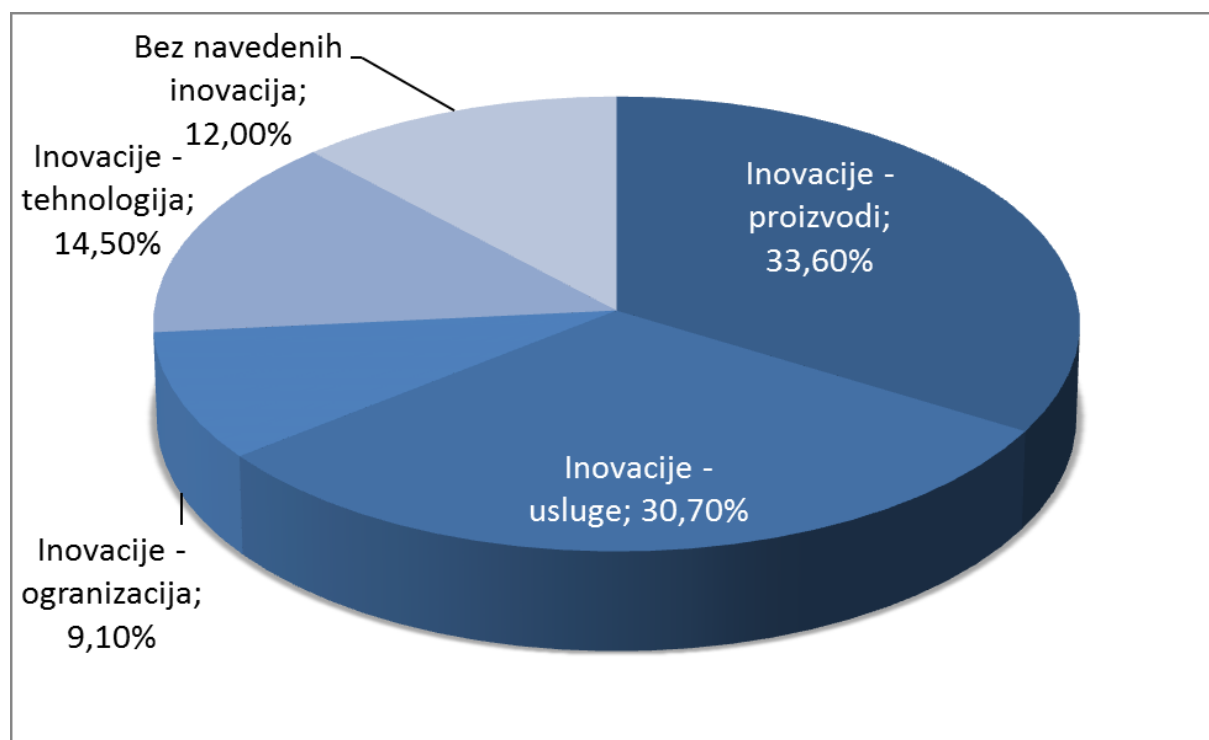


Fig. 2. The structure of the innovation activity of 165 SMEs in Eastern Serbia. [9]

The results point to a complex and functional innovation structure (product + service = product) of over 64%, which involves about 80% of the total innovation activity by including

the process innovation (technology) of 14.5%. The advantage of SMEs is in their flexibility and abilities implementation of innovative models. In this way, SMEs can be presented with a potentially competing factor, which directly influences successful business activity and higher profits. Based on this factor, the SMEs innovation of the Eastern Serbia region can be valued with a very good estimate.

Research carried out on the territory of the Republic of Serbia is presented in Table 1. The table presents the results related to the period 2008-2017 and indicates the percentage of e-mail orders received by businesses.

Table 1. Proportional representation of companies receiving orders through a website or mobile application by region

| INDICATOR | PERIOD | TERRITORY | | | |
|---|--------|------------------|-----------|--------------------|----------------|
| | | City of Belgrade | Vojvodina | Republic of Serbia | Central Serbia |
| Proportional representation of companies receiving orders through a website or mobile application by region | 2008 | 16.2 | 17.4 | 19.9 | 25.6 |
| | 2009 | 23.6 | 15.6 | 20 | 19.4 |
| | 2010 | 24.9 | 22.2 | 20.7 | 15.7 |
| | 2011 | 15.5 | 25.6 | 20.7 | 14.7 |
| | 2012 | 23.4 | 21 | 20.9 | 12.4 |
| | 2013 | 27.5 | 19.9 | 21.2 | 15.8 |
| | 2014 | 38.6 | 15.6 | 22.9 | 11.2 |
| | 2015 | 27.9 | 27.3 | 23.3 | 15.7 |
| | 2016 | 26.6 | 28.7 | 23.8 | 17.2 |
| 2017 | 29.4 | 28.5 | 26.3 | 21.3 | |

Source: <http://data.stat.gov.rs/Home/Result/270306?languageCode=sr-Cyrl>, [10]

Based on the data presented in Table 1, it can be noted that there is a trend of growth of the percentage of economic entities that receive orders through the website or mobile application on the territory of the Republic of Serbia.

Table 2. Proportional representation of companies that order via a website or mobile application by region

| INDICATOR | PERIOD | TERRITORY | | | |
|--|--------|------------------|-----------|--------------------|----------------|
| | | City of Belgrade | Vojvodina | Republic of Serbia | Central Serbia |
| Companies which ordered products via web sites or mobile applications, according to region (%) | 2008 | 23.9 | 18.8 | 22.4 | 23.4 |
| | 2009 | 24.8 | 19.4 | 23.3 | 24.5 |
| | 2010 | 32.6 | 32.3 | 32.5 | 32.6 |
| | 2011 | 47 | 50.5 | 40.1 | 50.3 |
| | 2012 | 44.2 | 41.9 | 40.2 | 34.6 |
| | 2013 | 46.2 | 34.6 | 40.4 | 38.5 |
| | 2014 | 58.3 | 35.3 | 40.3 | 24.6 |
| | 2015 | 45 | 42.7 | 41 | 35.6 |
| | 2016 | 39.9 | 41.4 | 41.4 | 43.2 |
| 2017 | 40.5 | 41.8 | 41.9 | 43.4 | |

Source: <http://data.stat.gov.rs/Home/Result/270306?languageCode=sr-Cyrl>, [11]

From the data from Table 2, it can be noted that, along with the growth of companies that offer the possibility of ordering goods and services through a website or mobile application, there is also an increase of the percentage of clients who ordered goods and services through a website or mobile application. The causal connection of these phenomena fits completely into the concept of modern free market business.

In addition to changing business practices, a significant effect on the success of the organization is also innovation in terms of services and products offered on the market. In Table 3, the proportional representation of innovation companies is presented, those which

used innovative solutions for new products and/or processes in their business. In addition to the results related to the Republic of Serbia, the table presents data for countries in the region as well as countries where the percentage of innovation firms is high.

Table 3. Innovation companies using innovative products and/or processes (in %)

| GEO/TIME | 2008 | 2010 | 2012 |
|----------------|------|------|------|
| Bulgaria | 16.6 | 22.4 | 16.3 |
| Germany | 20.7 | 24.3 | |
| Estonia | 48.6 | 42.1 | 42.8 |
| Greece | | | 38.0 |
| France | 42.4 | 36.1 | 34.1 |
| Croatia | 38.1 | 32.6 | 34.5 |
| Cyprus | 51.4 | 62.3 | 53.2 |
| Hungary | 41.3 | 43.2 | 40.4 |
| Austria | 38.7 | 51.0 | 41.9 |
| Romania | 13.8 | 24.0 | 23.8 |
| Slovenia | 48.0 | 48.3 | |
| United Kingdom | | | 65.3 |
| Serbia | | 24.9 | 25.5 |

Source: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=htec_cis6&lang=en, [12]

Data from Table 3 indicates the fact that all countries in the region had more than one percentage point of innovation companies in relation to the Republic of Serbia. Of the countries with a high percentage of innovation firms, the United Kingdom, Cyprus and Slovenia stand out.

Investments in high technology represent the imperative of modern society. Countries that allocate the most resources for the development and introduction of high technology in modern business can expect a positive effect in terms of innovation in goods, services and processes.

Table 4. Research and development costs of enterprises in high technology sectors (in million EUR)

| GEO/TIME | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------------------------|---------|---------|---------|---------|---------|---------|---------|--------|
| Bulgaria | 52 | 55 | 108 | 117 | 154 | 163 | 223 | 317 |
| Germany | 46,073 | 45,275 | 46,929 | 51,077 | 53,790 | 53,566 | 56,997 | 59,058 |
| France | 25,761 | 26,426 | 27,455 | 28,851 | 30,041 | 30,708 | 31,133 | 31,668 |
| Croatia | 188 | 154 | 148 | 150 | 151 | 178 | 164 | 192 |
| Italy | 10,173 | 10,238 | 10,579 | 10,825 | 11,107 | 11,480 | 12,344 | 12,106 |
| Hungary | 557 | 611 | 674 | 752 | 825 | 983 | 1,022 | 1,110 |
| Austria | 5,233 | 5,093 | 5,520 | 5,693 | 6,540 | 6,778 | 7,153 | 7,397 |
| Romania | 242 | 223 | 220 | 237 | 251 | 171 | 238 | 344 |
| Slovenia | 398 | 424 | 506 | 660 | 703 | 716 | 689 | 651 |
| United Kingdom | 19,962 | 17,537 | 18,731 | 20,058 | 21,096 | 21,721 | 24,730 | 28,839 |
| Montenegro | | | | 3 | | 6 | 5 | |
| Serbia | | 38 | 26 | 23 | 72 | 33 | 76 | |
| Russia | 7,446 | 6,866 | 7,866 | 9,101 | 10,226 | 10,733 | 9,915 | 7,955 |
| United States | 197,635 | 202,461 | 210,438 | 211,273 | 235,251 | 242,849 | | |
| China except Hong Kong | 33,077 | 44,592 | 57,801 | 73,136 | 96,756 | 111,161 | 122,905 | |
| Japan | 89,436 | 91,943 | 103,321 | 110,596 | 118,748 | 97,886 | 96,831 | |

Source: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=htec_sti_exp2&lang=en, [13]

The most significant changes in the business environment in the previous decade are the development of the Internet, which has significantly changed the way business is conducted in terms of global distribution, digital goods and services, as well as diagnostic communication with customers. As a result, many traditional so-called brick companies have faced the necessity of customization to remain competitive [2]. Using the Internet in everyday business activities is not a novelty but rather, a standard. Exponential development of users using the Internet for business purposes indicates that the application of the Internet in modern business has become the standard. Table 5 presents data showing the percentage of companies that use the Internet and websites in everyday business in the Republic of Serbia by region for the period 2009-2018.

Table 5. Use of modern technologies by company size for the period 2009-2018

| Republic of Serbia | | Period | | | | | | | | | |
|--|--------------------|--------|------|------|------|------|------|------|------|------|------|
| Indicator | Company size | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Companies which use the Internet in their business dealings, according to size (%) | Total | 94.5 | 96.8 | 97.2 | 97.7 | 99.6 | 100 | 99.1 | 99.8 | 99.7 | 99.8 |
| | Small 10-49 emp. | 93.4 | 96.3 | 96.3 | 97.3 | 99.5 | 100 | 98.9 | 99.8 | 99.7 | 99.7 |
| | Medium 50-249 emp. | 97.7 | 98.2 | 99.9 | 99 | 100 | 100 | 100 | 99.9 | 99.6 | 100 |
| | Large >250 emp. | 100 | 99.3 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Companies which have their website, according to size (%) | Total | 67 | 67.5 | 67.6 | 73.8 | 73.8 | 74 | 75.2 | 80.8 | 80.4 | 82.6 |
| | Small 10-49 emp. | 62.5 | 62.8 | 63.2 | 70.3 | 69.1 | 71 | 71.2 | 77.9 | 76.9 | 80.1 |
| | Medium 50-249 emp. | 79.8 | 82.1 | 79.3 | 84.1 | 87.7 | 81.5 | 88 | 89.8 | 92.1 | 90.4 |
| | Large >250 emp. | 81 | 86.7 | 89 | 89.3 | 87 | 93.7 | 92.9 | 93.9 | 93.6 | 94.8 |

Source: <http://data.stat.gov.rs/Home/Result/270302?languageCode=sr-Cyrl>, [11]

The results presented in Table 5 indicate that there is a constant trend in the growth of the percentage of companies using the Internet and websites in everyday business. The growth trend is significantly higher for small businesses than for large ones, which is as expected due to the fact that large enterprises have significantly more funds allocated for technological equipment, as well as for maintaining the website.

4 CONCLUSION

Technological innovations and their application are a condition for the survival and development of all organizations that want to be significant business entities in their industry.

Thus, technological literacy becomes an imperative and significantly determines the personnel potential of the company. Organizations investing in new technological advancements as well as technological education of their staff will become leaders in terms of innovation and market competitiveness.

The results of the survey indicate that there is a significant difference in terms of budget allocations from different countries in order to foster innovation and the implementation of modern technologies. Economically more developed countries are investing significantly more in high technology than economically weaker countries. Among them, the Republic of Serbia invests significantly less funds in high technology, but the proportional representation of innovative firms is better than in some of the more economically developed countries. The Republic of Serbia has considerably less room for maneuvering within the budget, but it also belongs to the group of countries with an average percentage of innovative enterprises. This

data confirms the fact that in Serbia there are a significant number of young people whose creativity and orientation towards new technologies is a potential that must be used for the purpose of economic development. Research results point to the fact that out of 165 SMEs in the country, only 3.8% companies confirm that they follow modern trends in high technology.

Some 45.9% of companies claim to have partly obsolete equipment, while 20% claim to have fully obsolete equipment [9]. Comparing the data of the mentioned research in the territory of the Republic of Serbia, it can be concluded that there is a significant deviation of the representation of innovations in relation to the modernity of the equipment being used.

This indicates that a very important factor in the success of companies in terms of innovation is the educational capacity of the staff. Firms with average technological equipment and with quality and creative professionals can achieve a higher level of innovation than firms with modern equipment that have no such personnel potential. It can be concluded that investing in personnel in economically less developed countries represents an imperative at a higher level of significance in relation to the importance of investment in high technology.

The results of this research indicate the existing innovative potential of young people in Serbia. The significance of this research is also reflected in the confirmation of the technological lagging of enterprises in the Republic of Serbia in relation to economically developed countries. One of the tasks of the state is the promotion of innovation, research and development through strategic determinants defined by the Strategy of Scientific and Technological Development. One of the goals is to support the involvement of research and development potential into enterprises through joint technological development projects of private enterprises and scientific research organizations. The problem is the fact stated in the development strategy itself, which refers to the lack of scientific research staff in the context of the analysis of the situation after the implementation of the previous Development Strategy carried out in the period from 2010-2015 [6].

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NEW TRENDS IN IT MANAGEMENT

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ABSTRACT

After many years of development of management practice and the subsequent development of management theory through four evolutionary phases, despite the present exponential accumulation of knowledge, a period has come in which the absence of one unifying management theory is evident. The current management in companies is autarchically developing in several directions of business, of which priority is given to: finance, human resources, information technology (IT), innovation and strategy, legal regulations and compliance with them, marketing and communication, procurement, operations, sales and service, risk and audit. The development of IT has been in the lead over the development of other areas of business, and consequently IT management. Therefore, this paper, from theoretical point of view, discusses in more detail the current trends in IT management.

After conducting a desk top research of IT management trends, authors identified 12 current trends that are most promising and that are expected to dominate in the near future.

Keywords: Trend, Management, Information technology, IT management

JEL: M15

1 INTRODUCTION

Management, known as social technology, has its roots in the historical sense in the time of the emergence of the first social communities and their latter organization, but it takes its full meaning and importance only after the emergence of the first, science-based management theories.

The characteristic periods of the evolutionary development of management theory are: Scientific Management Theories (1890-1940), Bureaucratic Management Theories (1930-1950), Management of Human Relations (1930s-present), and Contemporary Management Theories [1].

When it comes to modern management theories, despite the exponential accumulation of knowledge, a period in the theoretical development of management has emerged, within which the absence of a unifying theory is evident. In such a situation of management development, management theorists return to management practices again, in order to find new ideas for further upgrading of existing theory.

From the practice point of view, the current management is developing autarchically, that is in several directions of business, from which the following can especially be distinguished: finance, human resources, information technologies (IT), innovation and strategy, legal regulations and compliance with them, marketing and communications, procurement, operations, sales and service, risk and audit.

Development of a certain area (business, scientific, etc.) is monitored through its development tendencies, popularly called trends. When management trends are concerned,

according to [2] they move every few years, and the pace of change exponentially accelerates, mainly thanks to technological advancement.

With IT management, this pace of acceleration of change is most pronounced. Therefore, the purpose of this paper is to specifically consider the current trends in the development of IT management. The reasons for this are numerous, but the most important ones are that IT today, to a lesser or greater extent, permeate all the above-mentioned directions for the development of business management, as well as IT business direction is developing the fastest of all the others.

Therefore, in this paper we briefly present the results of desktop research, carried out within the wider research project *New Trends in Management*, which relate to one direction of business operations, that is, IT management.

2 INFORMATION TECHNOLOGIES MANAGEMENT

2.1 Management

Management is a term that comes from English language, from the verb “to manage”, and it is usually understood as: controlling, adjustment, overcoming problems, leadership.

The common determinants of all the definitions of management are contained within its relevant dimensions, which are represented by the following key words: planning, organizing, human resource management, leadership, communicating, motivating, controlling and decision making.

Today, a unified, generally accepted or standardized definition of management has not yet been developed, but they generally differ depending on which of the above dimensions the theoreticians focus on [3].

In this paper, the following definition will be adopted [4]: “Management includes the activities of setting up a strategy of an organization and coordinating the efforts of its employees (or of volunteers) to achieve its objectives through the application of available natural, technological and human resources”.

2.2 Information technologies

According to [5], information technology (IT) is defined as “the use of computers to store, retrieve, transmit, and manipulate data, or information, often in the context of a business or other enterprise”. IT is considered to be a subset of information and communications technology (ICT).

The term IT in its modern sense first appeared in 1958 (authors Harold J. Leavitt and Thomas L. Whisler) and the definition of IT consisted of three categories: techniques for processing, the application of statistical and mathematical methods to decision-making, and the simulation of higher-order thinking through computer programs.

Based on the storage and processing technologies employed, there are four distinct phases of IT development: pre-mechanical, mechanical, electromechanical and electronic.

2.3 IT management

IT management is the discipline whereby all of the information technology resources of a company are managed in accordance with its needs and priorities. These resources may include tangible investments like computer hardware, software, data, networks and data centre facilities, as well as the staff who are hired to maintain them [6].

The central aim of IT management is to generate value through the use of technology. To achieve this, business strategies and technology must be aligned.

IT management is different from management information systems. The latter refers to management methods tied to the automation or support of human decision making. IT management refers to IT related management activities in organizations.

According to [7], IT management integrates the following areas: data acquisition, data mining, data management, data analytics, decision support, decision rule management, data visualization, reporting and communication.

In terms of growing relevance of IT management, increasing importance is given to *planning of IT* in business systems and *IT infrastructure management*.

Planning of IT is organized planning of IT infrastructure and applications at different levels of a business system. Depending on the time period for which it is performed, the following IT planning levels are distinguished:

- long-term (strategic) IT plan (which defines general guidelines in terms of IT infrastructure, five to ten years in advance);
- medium-term (tactical) IT plan (which defines the set of applications or the list of main information system projects in accordance with the long-term strategic plan);
- short-term (operational) IT plan (containing budgets and timelines for IT projects and activities in current year).

IT planning refers to the following four general issues [8]:

1. harmonization of the IT plan with the organizational business plan,
2. designing an IT architecture for the organization so that users, applications and databases can be unified and networked,
3. efficient allocation of resources of information systems and operational resources among organizational units,
4. Planning of IT projects, with the goal of ending on time and within the budget, while maintaining the required functional characteristics.

The IT infrastructure management function is very difficult to extract, in assessing its performance and impact on overall business. It, in fact, represents support to all business functions and business processes and creates an opportunity to improve their functioning.

Two aspects of managing the IT infrastructure can be distinguished:

- *hardware and system software infrastructure* (procurement of appropriate client and server machines, network services and system software);
- *application infrastructure* (application software, which provides services to employees, consumers and other participants).

One of the most important issues in IT management is “outsourcing”.

Outsourcing of IT function is defined as the decision to transfer or entrust IT services (or even the entire function) to an external service provider, with the aim of more effective management of those activities and functions. Because of the complexity and technical expertise that IT requires, many business systems opt to outsource at least one part of their IT function, and some also to outsource the overall IT management.

3 NEW TRENDS IN MANAGEMENT

New trends in IT management in the company’s business are the result of technology innovation in the workplace of employees. Hereinafter, the authors of this paper are considering 12 current IT management trends, which can be summarized as follows:

3.1 *The growing importance of applying Big Data technology*

The applications of Big Data and related technologies for companies are getting more and more important from day to day. Since every digital marketing campaign is based on a huge

amount of data, this application of Big Data has a special importance in digital marketing, which by popularity already surpasses traditional marketing. [9]

3.2 The growing importance of adopting artificial intelligence throughout the industry

Artificial intelligence is applied in the realization of increasingly complex tasks in industry, in departments and by different teams. Since artificial intelligence automates the realization of many of their previous tasks, it is undoubtedly that it leads to an increase in productivity. [10]

3.3 Further continuation of business migration to cloud computing

Cloud computing provides businesses with the ability to store all data in one place, which is available from any geographic location. In this way, on the one hand, the costs of own maintenance of hosting and server are significantly reduced, and on the other hand, employees are given the opportunity to access business documents and outside of the office. [10]

3.4 Improving mobile web performance

It's well-known that today every website must be optimized for mobile devices, otherwise search engines will ignore it. This has caused a race to improve mobile performance. Hence, users have clearly expressed expectations in terms of improving the online performance of their mobile devices. Improving mobile web performance relates to mobile only development, user triggered animations, natural language processing, secure pages and apps and an increasingly intelligent use of negative or white space. [9]

3.5 The growing importance of “containerisation”

Containerization is a specific type of virtualization that allows for the running of applications on cloud-based servers. In this way, the containerization allows a higher level of IT automation in which separate container elements share operating systems and other central facilities. Containerization is especially important for new developers because it allows teamwork and a faster transition from project to project. [9]

3.6 Development and application of the Internet of Things (IoT)

The Internet of things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect, collect and exchange data [11, 12]. Expectations are that IoT will improve our homes, work places, cars and free lives. [9]

3.7 Enterprise Software

The current Enterprise Software should meet the requirements regarding the application of the latest employee support software, such as Uber, Snapchat and Tinder, as well as the application of the team communication software, such as Slack. [9]

3.8 Application of Virtual assistants

A Virtual Assistant is a self-help tool in the form of a chat that is used by a brand to enhance the experience of its user and meet expectations through quick responses, targeted engagement and availability 24/7. A good example of a virtual assistant is Amazon's Alex. [9]

3.9 *Augmented Reality and Virtual Reality (VR)*

Today, more and more companies are interested in adventure in the combined world of IT and creativity, that is, for game design of virtual reality. Magic Leap one (creator edition) and the like can be mentioned here. [9]

3.10 *The growing importance of cyber security of companies*

Information security is defined as protection of information systems against unauthorized access to or modification of information, whether in storage, processing or transmission, and against the deprivation of services to authorized users, including necessary measures of detection, documentation and elimination of such threats. [13] As more and more companies are based on cloud computing, the risk of unwanted hacking in the company's system is growing. Today, hackers use artificial intelligence to penetrate other systems, so this issue of the company has to be actively involved. [10]

3.11 *Increasing awareness of the importance of IT talents*

Accumulation, transmission and management of knowledge have become an imperative of economic growth and development. The interest in knowledge management is increasing because it is clear that its impact is crucial for creating competitive advantage. [14] This is the case today especially in IT sector.

Accelerated growth in the application of artificial intelligence, the migration of business into cloud computing and greater attention to cyber security by companies require qualified employees of different types that can respond to new technological challenges. They are expected to perform tasks whose processes are more complex. However, IT has dealt with a talent gap for a number of years. [10]

3.12 *Constant increase of IT budget*

Today, the notion of science in the field of industry has been transformed and managers know that buying hardware, although sometimes necessary in order to achieve superior technology, is not enough and elements such as human resources or technical knowledge are essential for optimal performance of each hardware platform. High-tech technologies have certain characteristics. First, the development of high-speed technologies – sometimes the life of these technologies is less than a year, whereas in traditional technologies life expectancy is more than 10 years. Second, the role of human resources is higher than the role of hardware. [15]

New IT technologies, on one hand, reduce operating costs, such as migrating business into cloud computing, mobile computing, etc., and on the other hand require additional investment. The trend of increasing the IT budget is an indicator that companies recognize the current trends. [10]

4 DISCUSSION

On the basis of the conducted research of trends in IT management, it can be concluded that the macro trend goes in several directions, that is the application of:

- cloud computing,
- artificial intelligence (AI),
- virtual reality (VR), and
- networking.

As the above-mentioned trends in information technology management indicate, the key factor in moving towards the future is IT sustainability, i.e., the process of ensuring the

development of information technologies that meet the requirements of the current market, as well as preserving the development potential of the future markets.

Given that businesses continue to face digital disruptions, IT faces a turnaround as it evolves from support to a leading role. IT experts and their work more and more affect customer service, user experience, and even the corporate culture.

5 CONCLUSION

This paper first deals with the concept of management, and then focuses on IT technologies, or the concept of IT management, to present the current trends in IT management in companies' operations.

This material can be of use to everyone involved in management from a theoretical point of view, to everyone involved in management from a practical point of view (current managers), and in particular to IT managers.

This paper can also serve as a good basis for developing an IT development strategy in a company.

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GLOBALISATION AND THE ROLE OF INTERNATIONAL ORGANISATIONS

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ABSTRACT

We are now living in a global economy in which social, political and cultural aspects of people and companies are interconnected. There has been an increase in international trade and world finance has grown over the past two decades. Financial flow in developing countries has risen; the number of multinational corporations has soared, and global production has increased. Globalization is not just an economic phenomenon, but it also has political, social and cultural dimensions. This paper aims to answer the question, “Why is globalization significant to organization?” In order to understand why globalization is significant to organizations, it is essential to understand the terms. Therefore, this paper will define the terms globalization, organization and global organization. It will explore the types of global organizations; discuss the ongoing aspects driving globalization and discuss factors which force globalization. In addition, this paper will examine many of the roles of global managers/leaders and analyze ways of managing. This paper will research the role of the international business environment in the context of global strategy and lastly, it will discuss the globalization and organizational culture diversity.

Keywords: Globalization, international business, global managers, global leaders, organizational cultural diversity

JEL: F60

1 INTRODUCTION

The world is becoming smaller as countries are connected through globalization. These trends include an increasing number of international corporations, increase the power of global economic competition, define new types of business, change business structure and leadership styles and affect the increasing diversity within labour. [1] Smaller, meaning that countries are interconnected through trade, communication, and the assimilation of cultures.

Since the early 1990s companies began to realize that they could extend their profit margins if they extended their businesses into other countries. Thus, started the race for companies to have a global presence and capture their portion of the global profit.

Additionally, by expanding into foreign markets companies are less dependent on their home economy [2]. However, globalization is easier said than done. Attempting to turn a company into a global company takes a lot of planning, leadership, and solid strategies. At the same time, doing the business globally and in diversified environment, companies should put an emphasis on such concepts as “global managers” and cross-cultural management.

Also, in parallel with the globalization process, new fields of economy have been created, which are defined in literature as knowledge-based economy, knowledge economy, economy based on information and the information economy [3].

Network communications is one of the modern ideas in the field of organizational behavior in international companies (Fig. 1)

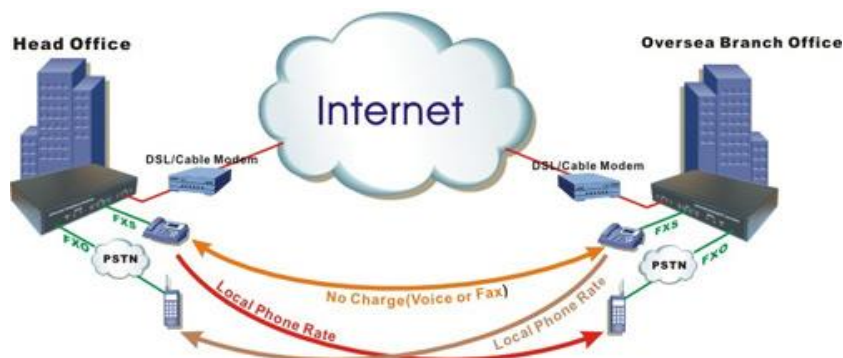


Fig. 1. Network communication

Source: <http://netrescue.net/communications-networks/>

On the other hand, the ability to communicate with employees and understand the cultural differences between them in a multicultural environment is one of the key skills that managers and employees need them in the nowadays organizations [9]. In accordance with that, the aim of our paper was to examine what are the features that modern managers should have so they could be able to keep up with changes and manage them. In new context, “disruptive innovation, creativity and think out-of-the box, advanced technology, social media, international mindset, and passionate entrepreneurship are the new buzz words” [8]. In some of the most eminent theoretical overviews the special attention is paid to the significance of human capital in creating the sustainable competitive advantage of an enterprise through modern information and communication technologies. [10]. According to literature, “whether an organization is as small as a household (a family unit) or as large as the most successful industrial empire in the universe, information management is of great relevance” [13].

2 CHARACTERISTICS OF GLOBAL ORGANIZATIONS

Entering into a foreign market for entrepreneurs is not an easy task as it may appear. So, few companies are ready to build and run truly global organizations, despite it may be their goal. Namely, only a small number have the capabilities needed to bring that strategy to go global. The move to dive into a new market requires that the entrepreneur must familiarize himself or herself with the culture and regulatory policies of the new business environment. It means that companies that want to get it right need to consider this opportunity from many angles. (Fig. 2).



Fig. 2. Strategy to go global

Source: <https://soulcrazy.org/small-business-spotlight-genovesi-web-design-and-marketing/>

Despite few companies are ready to run global organizations, “international companies have become in recent years one of the most important drivers of continuous globalization and constant developments in the global economy”, p. 221. [3] In line with this, they face to an organization needs to determine what their global presence will be; trade, alliances, licensing, or investment. Trade or exporting consists of a company selling products to a foreign agent. Once the product is sold to an agent the company has no control over what happens to the product. There are positive and negatives to this approach. First, a large amount of capital investment is not needed for this approach, however once the products are released to agent the company does not have any control. This may present a problem if the agent markets the product in a negative way thus damaging the company’s image. That being said this is probably the easiest way to enter the global marketplace.

The next minimal capital investment method is licensing agreements. This allows a foreign company to use the brand name or image of a company. It also allows for a foreign company to reproduce a product. Again, there is minimal investment on the part of the company licensing their product, but brand image can easily be damaged under this scenario.

The final globalization approaches involve a significant amount of capital and investment in the foreign market.

There are various types of alliances that can be created. A joint venture would include two companies in different countries that allow one another access to their market. Under this scenario a company now has control over its brand image. Global strategic partnerships consist of two companies partnering to create a product that will dominate the global market within that products field. Wholly owned subsidiaries occur when a company purchases a foreign company. Generally, the company is still operated by foreign workers, but the control remains with the new owners. Companies engaging in this approach are taking large financial risks. Vertically integrated wholly-owned subsidiaries occur when a company not only purchases a foreign company but also purchases the distribution and retail channels for a product. This requires a huge capital investment and the goal is to dominate the global market within the product field. The risk for this scenario is also significant.

The most popular globalization approach is with multinational corporations. This occurs when a company has facilities in one or more foreign countries. This involves a high degree of capital investment and commitment to globalization. The company has to invest in foreign facilities and organize workers. But, the payoffs can be large in terms of profits if the labor is cheaper in said foreign country. Additionally, these multinational companies are now dependent on the world economy and have to have clear strategies in order to survive and a clear view of the international business environment.

The multicultural organizations are characterized by six features:

- pluralism,
- full structured integration,
- integration of informal networks,
- absence of prejudice,
- equal identification with goals and minimal intergroup conflict [11].

3 INTERNATIONAL BUSINESS ENVIRONMENT

Today due to embracing globalization and trade liberalization policies in the world, the business environment has become more competitive. [2] In this context, companies require a clear understanding of the foreign market they are entering. So, there are several components to the business environment that need to be analyzed and strategies developed based on the information gathered. These components include the economic, technological, socio-cultural, and political-legal environments.

The economic environment looks at the earning potential within a foreign market. A company should look at the country's GDP, per-capita income, the country size, and its stage of economic development [4]. If the population of a given country cannot afford the product there is no use in marketing the product in that country. Wealthier nations are better environments for industrial goods. Furthermore, it may be difficult to find workers for the production facilities in poorer nations. A country's economic development stage affects the infrastructure present. Developing nations may not have a developed road, rail, or port system that a company needs to transport its goods to the market. The power and utility grid may not be developed making it difficult to produce goods, as well as the communication network.

Other economic factors that need to be considered include tax structure, currency, and inflation. Within some countries companies may be required to pay higher tax rates. This may or may not affect a company's decision to locate within the country, but the information needs to be part of the decision-making process. The currency exchange rate of a country needs to be monitored because if the value drops companies can take huge losses. The currency exchange rate can be affected by the inflation rate. The inflation rate is the rise of cost for goods over a period of time. When goods cost more people tend to buy less affecting the bottom line of companies.

The technology environment revolves around innovations used to make production easier.

A company needs to ensure that they locate in a country that has a workforce that is willing and capable to work in a high-tech environment. A company needs to partner with a country that utilizes similar technology.

The socio-cultural environment is a very important part of the international business strategy. This environment includes the social norms of an area; such as language, customs, education, religious attitudes, and social values. All of these aspects of a country's culture should be studied before placing a business or advertising within the country. Companies and those working within a country need to understand those they are working with and have an open mind in regard to new customs. Additionally, they need to learn a country's cultural taboos. Examples include: the French love to debate, in China it is insulting to be late, and the Swedes do not use humor in negotiations.

Language is a major area where mistakes can be made. Companies need to understand and use appropriate language, often there are errors in translation. In China, KFCs 'finger lickin' good' translates to 'eat your fingers off', and the Coors slogan 'get loose with Coors' translates to 'get the runs with Coors' in Spanish. These language mistakes can be very embarrassing for a company at the very least. It is very important for a company to try and understand the cultural differences, not doing so can create mistrust between the consumers in the foreign nation and the company.

The political-legal environment consists of the political stability of a nation as well as laws and trade regulations. The political stability of a country will ultimately determine if a company chooses to locate another facility in that country. However, the political environment can and does change quickly in nations around the world, like African and Middle East countries. Civil unrest is not only dangerous for company personnel but also not good for business.

Another aspect of the political environment includes labor laws. Labor laws of each country differ as do the manner in which employees are treated. If a company uses child labor or pay its foreign workers an extremely low wage, just because it is legal in a foreign nation, this can damage a company's brand. These issues need to be considered before choosing a nation to expand into.

Within the legal environment companies need to understand international laws, U.S. laws, trade barriers, and laws of the host country. International law takes into account treaties or agreements among nations. One such internationally recognized law is ISO (International

Organization for Standardization) certification. These are a set of standards that ensure a product meets established quality levels [4]. Another aspect of the legal environment includes trade barriers, such as tariffs. Tariffs are taxes placed on imported products. Two examples include revenue and protective tariffs. Revenue tariffs raise money for the importing government and protective tariffs are designed to protect domestic products. The tariff is placed on an imported product designed to raise the price to match or exceed that of the domestic product [4]. This tariff attempts to support domestic companies by eliminating the ability of a foreign company to compete at the same price point.

By establishing what type of global presence is wanted and understanding the business environment before entering the global market a company is trying to ensure its success.

However, that is not all that needs to be done to ensure success. Managing a global team is not the same as a domestic team. Companies need a solid management team and strategies in place for a global company.

4 GLOBAL MANAGERS AND MANAGING

Globalization makes an impact on cultural diversity of workforce and the increasing need of new and different skills and qualifications. [3]. So, leadership skills are important components found in global managers [4]. Running a global company is very demanding and requires a special skill set. Successful global managers exhibit these leadership competencies.

Business leadership includes having the ability to create successful alliances in the global network, business that create alliances have a higher success rate. A successful alliance would include sharing transportation networks thus lowering costs. Further examples include a leader who is able to create a new global organization structure. It is not enough to mirror the domestic structure of an organization but create one that reflects the foreign environment you are in. This environment must take into account all of the business environments.

Additionally, the leadership needs to create an environment that reflects the organizations own culture, values, and vision.

Functional leadership describes a leader who is connected to the employees, the local area, his role as a manager of a foreign facility, and the corporate home office. This type of manager is not a figurehead, they need to know, understand, and display their knowledge of the operations of the facility they manage. Furthermore, they need to stay connected to the home office and relay information between countries efficiently. This type of hands on competent leader can make for a very successful global firm.

Team leadership is important in any business but is critical in a global environment. A manager is in a foreign environment where the social and cultural norms may be completely different than what they are used to. Yet they still need to mentor and motivate their employees but with a different approach. This takes a tremendous amount of leadership skills and not every manager can do it, so a company needs to choose wisely when selecting someone for a global assignment. Additionally, a team leader needs to be able to think on their feet and keep everyone focused as political-legal environments often change quickly in global settings.

Personal leadership is the final competency that sets successful global managers apart.

When a manager is based in their home country they have a support network of family, church, community, and general familiar lifestyle. However, all of that disappears when they are in a foreign country and the successful manager needs to have a strong sense of self. They exhibit characteristics such as discipline, focus, and maturity. Additionally, a successful global manager has the ability to relate and understand the local culture, while maintaining their cultural values. It is a fine balance, but the most successful managers can show respect and understanding for the host culture but still maintain their identity. Finally, global

managers are often times in remote locations but still need to focus on their own professional development. They cannot become isolated from the home office and need to always keep in mind their personal growth.

All of the above competencies are needed in any corporation but are crucial in a global environment, with personal and team competencies being of the utmost importance.

Additional, qualities and circumstances that need to be addressed to create a successful global manager include:

- A willingness to communicate, form relationships with others, and try new things
- Good cross-cultural communication and language skills
- Flexibility and open-mindedness about other cultures
- The ability to cope with the stress of new situations
- The spouse's career situation and personal attributes
- The existence of quality educational facilities for the candidate's children
- Enthusiasm for the foreign assignment and a good track record in previous foreign and domestic moves.

With the needed competencies and qualities for a global manager established. There is also a manner in which global companies should manage to ensure success. There should be an increased level of communication and employee involvement, along with flexibility because of changing global environments. In a global environment the managerial functions of planning, organizing, staffing, and directing are carried out a bit differently in a global setting.

As stated earlier planning for a globalization entails determining what your global presence will be; alliance, joint venture, etc. Another aspect of the planning stage that a good manager needs to determine is whether the company will have a global or multi-domestic strategy.

This is a crucial management decision that affects whether a product is successful or not.

The global strategy means that there is one marketing strategy for a product no matter the country it is being sold in. This approach definitely saves the company money and helps with brand recognition and may be a great approach for luxury items. However, it does not always work due to differences in cultural and social traditions within a country. The multi-domestics approach has a different marketing approach for different countries. This will cost a company more but due to cultural differences is often the best marketing approach. A good global manager needs to look at all of the business factors and especially the target audience and plan and manage accordingly.

Managers must organize their foreign facilities a little differently than their domestic versions. Due to cultural differences a company cannot place an exact replica of itself in a foreign country. A manager needs to be prepared for changes that occur within the foreign nations and react quickly to its customers, employees, and suppliers. Additionally, an open communication style of management is necessary. Employees and suppliers should feel they can address their issues to the company and feel like their problems are quickly resolved.

With this type of management style employee opinions are welcomed and a company can grow tremendously with local support.

In order to survive in this global economy, managers must foster creativity and competitive growth [12]. Global managers are also faced with decisions on how to staff the foreign facility. Many companies find that only having a few upper level foreign managers with the rest of the workforce coming from the local environment to be an effective management strategy. First, this strategy saves the company a lot of money in relocation expenses for employees and their families brought from the U.S. Additionally, it shows that a company is investing in the local population and economy. However, when hiring from the local area a company needs to be well versed in the nation's labor laws.

Directing one's employees becomes all that more challenging in a global environment.

Managers are dealing with different culture and different languages. Managers need to incorporate a great deal of patience and respect into their managing style when operating in a foreign country. Many companies are sending management personal to cross cultural training seminars. This is crucial in teaching managers to respect other cultures and diversity, as well as avoiding ethnocentrism. These trainings can also teach managers which management style is best suited to the nation they are managing in. For example, incentives work best in the U.S. and perhaps not so much in Japan where working is considered an honor and part of their culture. In Sweden and Japan informal relationships are the norm and a hands-on leadership style is used; whereas in Germany informal relations are discouraged. These subtle differences can really make or break a manager's relationships with its employees or suppliers.

There is a lot to manage in a global organization. A company can be geographically all over the world and have multiple languages and laws to deal with, which can make it difficult for managers to control their business environment. This is just another example of the complexity today's global manager face.

5 ORGANIZATIONAL CULTURE DIVERSITY

Another challenge managers face is the changing organizational culture of today's global market. Globalization itself is the assimilation of cultures, economies, and politics, so it only makes sense that today's organizational culture needs to embrace diversity. These factors are involved in the effectiveness of implemented changes such as changes in organizations.

According to Malakshah [6], one of these factors is the readiness for change. Readiness is reflected in beliefs, attitudes and intentions regarding the extent of required changes and organization's capacity for successful implementation of these changes.

Communication scholars Deal and Kennedy [7] defined four aspects of a strong culture: values, heroes, rites and rituals, and a cultural network. Deal and Kennedy defined the aspects as follows: values are beliefs and goals of members within an organization, heroes are people identified by the organization that exhibit the values, rites and rituals celebrate the organizations values, and the cultural network is simply the communication system for the values. They theorized that if all of these aspects are present in an organizations culture then they have a greater potential for globalization success. These aspects of a strong organizational culture are loosely defined and open the door for a diverse workplace.

Today's organizational cultures are constantly changing as a direct result of globalization.

The employees that work within an organization define the culture, so if the employees are changing then so is the culture. The global companies have a great diversity of people working for them and as such the organizational culture needs to reflect this shift. This diverse workforce has many benefits for both the employee and the organization as a whole.

Organizations with diverse workforces are better organizations to work for. Additionally, if an organization is diverse they are more likely to hire from a diverse applicant pool. The benefits of diversity for a company are great. When a company has a diverse workforce they have access to a lot of varying opinions and perspectives. A company can use these new perspectives to gain a greater understanding of the local culture, employees, and other clientele. This is invaluable information for a company and much better than any cross cultural training, because it is real first-hand information. Also, a diverse workforce promotes tolerance and acceptance among cultures when they work together on a daily basis. All of these characteristics make for a strong and successful global company. However, managers need to be aware that when a workforce becomes diverse quickly there is the potential for cultural clashes among different groups of workers in the beginning. With this awareness managers can start with cross cultural training programs.

6 CONCLUSION

Globalization is not something that companies take lightly. The issues surrounding globalization demonstrated in this paper are just a fraction of the issues that need to be considered before a company embarks on a globalization process. That being said it is not an impossible process, many of the biggest companies we are familiar with have global organizations and are quite successful at it. Coca-Cola receives roughly 80% of its profits from outside the U.S. and is an example of an organization with a large global presence.

Organizational model creation is highly dependent on different cultures by determining business strategy, leadership style, motivation etc. So, an organization needs clearly defined goals and the ability to clearly communicate the organizations goals and vision. Additionally, as demonstrated in the paper an organization needs to perform a great deal of market research before anything else. One organization may just need to strike an alliance with another foreign company, whereas another organization may benefit from multinational locations.

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METHODS AND STANDARDS FOR EFFECTIVE BUSINESS SOLUTIONS IN UNCERTAINTY

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ABSTRACT

The particularities of the management of the economic processes in Bulgaria are determined by the development of the market relations in the economy. The specificity of the management mechanism at this stage is reflected in the conceptual principles, the organizational structure, the objectives and tasks of the management, the system of methods, the executive economic and organizational mechanisms, the legislative layout of the rules and the management conditions. Approaches that are pooled under a common name “formal analysis” are based on the general premise that the task of risk management can be resolutely solved using various mathematical methods based on adequately formulated system models.

The basic principles and practical methods that influence the quality of project development and implementation, in which the processes of the project are grouped in two categories – first, project management processes, and secondly, related processes and the product of the project. Types of certificates and their processes.

Keywords: risk, methods, processes, subject, analysis, standard

JEL: M11

1 INTRODUCTION

In recent years, objectives and criteria for the success of projects have changed. If, as early as the mid-1990s, the objectives of most of the projects were presented in the form of product requirements, and the criteria for success were formulated in terms of “within the budget within the specification” today most organizations strive to link project goals and success criteria to strategic business goals and take into account the interests of all major project participants. Not only the scale and timeliness of the projects, but also the role of the project manager, his responsibility and the requirements for his/her competence and organization in the implementation of the project, are changing. For example, linking project goals and success criteria with indicators reflecting the achievements of the business objectives of the company shifts the timeframe of the project to the phase of asset exploitation and engages in the project participants not only related to the creation of the asset but also with its exploitation.

Another important trend in the realization of the projects is the increase of the business dynamics and especially the level of uncertainty both in the external environment and within the company. This has resulted in the emergence of a significant number of so-called open projects. In their initiation, unlike traditional projects, the client is not able to clearly fix the requirements for the end product, the time constraints and the budget and does not aim for it.

The main participants in the “open” project are ready to make the necessary modifications and to clarify the requirements in the course of its implementation. The management of “open” projects implies the implementation by managers of wider and more flexible risk management tools and methods. For example, developing strategic maps for project implementation, risk and deviation management, communications, financial and economic modeling of decision-making and decision-making methods.

The risk of economic activity is an objective and complex phenomenon whose characteristics are: uncertainty (uncertainty) of future results, probability of negative results but also effectiveness of the decisions taken. It is an objective phenomenon whose nature is conditioned by the ambiguity of future events. It is related to damage, loss, missed opportunities. When a damage or loss occurs, a risk situation arises. So far, the risk remains a hypothetical danger.

Although the future is unpredictable in principle, the expected events can be predicted with one or another accuracy (often very low) depending on the nature of the event – probable or indefinite.

Uncertainty can be characterized as multiple states of the inner and outer environment. In achieving the goals, it is always necessary to seek only the best (in some sense) solution with a predefined set of permissible solutions. The main difficulty lies in the fact that the consequences associated with the adoption of one or another solution depend on an unknown situation. The degree of unacceptability of these consequences is measured in conditional units – losses that, supposedly, can be borne by the decision-maker.

Uncertainty poses a risk. Risk is one of the most important concepts that accompany every human activity. Along with this, it is one of the most vague, meaningful and confused concepts. However, despite its ambiguity, ambiguity and confusion in many situations, the nature of risk is very well understood and perceived. These same qualities of risk are a serious obstacle to his quantitative assessment, which in many cases is necessary for the development of both theory and practice.

Within the framework of the regulatory approach to exploring the decision-making process, risk awareness is generated to a great extent different from the usual interpretation of managers' day-to-day activities that prevents the application of developed theoretical ideas.

The essence of the question is as follows. Regulatory theory relates risk mainly to volatility, volatility of indicators (characterizing the concept of volatility). Particularly characteristic is risk identification with the dispersion of the indicator. Dispersion involves combining the possible meanings of the resultant metric and their probabilities. Moreover, the meanings of the indicators and their probability are equally important for calculating the volatility characteristics. At the same time, the research in the framework of the descriptive approach shows that managers in their practical activity, when assessing a risk situation, give a different relative share of the possible meanings of the final, the aggregate indicator and their probabilities. The meanings of the pointer are much more important than their probability.

The second major difference between the postulates of normative theory and practice is that in this theory the deviations of the generic indicator (for example, profitability) and in one and the other direction are equally considered to be a risk. In practice, managers generally appreciate this in a different way. Only deviation in the negative direction (lower profitability, higher costs, etc.) is considered to be a risk. This is related to the fact that in the majority of companies the managers have a completely different responsibility for the losses and lost profits.

Almost every business operation, initial and final states have a monetary valuation and the purpose of conducting it is, of course, maximizing profits – the difference between the final and the initial assessment (or some similar indicator).

As a rule, such operations, especially financial ones, are in a situation of uncertainty and therefore their results can not be predicted in advance. These operations are risky. In their performance, both profit and loss (or not so much profit as compared to what they hoped at the beginning of the operation) is possible. The operation is risky if there are several unequal outputs. The decision-maker is interested in the success of the operation and is responsible for it.

2 METODOLOGY

The species diversity of the risks and the ways of their expression is large enough.

Nevertheless, regardless of the form of risk expression determined by the precarious economic situation, its content is the deviation of the actually determined indicators from the typical, the sustained, the average or the alternative significance of the assessed attribute.

It is understandable that risk always involves a risking subject, a risk taker, and who is concerned about the results of the operation. The risk itself arises only in such circumstances that the operation may end with an unwanted outcome, regardless of the possible efforts made to manage the situation.

For most business tasks, classical methods and models prove to be insufficient for risk arising under market uncertainty.

Firstly, in the system of market relations, the world economy faces the necessity of studying very complex objects and processes for which there is no, or is not expected in the near future, a complete theory allowing to use the available mathematical arsenal of classical methods and models. The risk and uncertainty of market relations arise as a result of the interaction of multiple objects, inter-company and cross-sectoral processes. The methods of interaction and the number of objects to be analyzed are often determined during the process itself.

Second, even mathematical models can be developed and methods to be solved, however, in a number of cases, they remain inappropriate due to the vast amount of different operations that need to be accomplished.

Third, such situations arise when the system's good-looking model is a specific method, for example, a task of linear, non-linear or dynamic programming. However, the processes that take place in the real economic system do not lend themselves to formalization (weakly structured or unstructured systems). There is no consensus, what methods should be used in choosing a solution and how to determine an acceptable risk. All existing approaches can be subdivided into two groups – process orientated and strategically oriented approaches.

In process-oriented approaches, the decision-maker is based on the process that will be used to manage risk. When such a process is selected, no justification is required for the rules underlying the decision-making process.

Strategically oriented approaches are more grounded, centralized and public, while having a clearer logic.

The market can be seen as a clear-cut, process-oriented approach that suggests that the interaction between producers and consumers will lead to risk decisions where production and actions are “too risky” and will not be competitive compared to the better alternatives.

The cost-benefit balance can be considered as a typical strategic approach. Of course, strategic-oriented approaches should not oppose process-oriented approaches as they fit into social processes and often determine the business strategy inside those processes .

All approaches based on economic theory and management theory have the following common features:

- a requirement to choose between alternative modes of action (for example, the cost-benefit approach is oriented towards choosing the most cost-benefit overriding;
- In the “divide and conquer” methodology complex complex tasks are broken down into simpler components that can be solved independently and then combined to get a complete assessment;
- Under strictly prescribed decision-making rules, all elements are combined in accordance with the formal procedure and the decisions are taken in strict accordance with the results obtained;

- using a single methodology, all components of the analysis are reduced to a single criterion (for example, to the value characteristics or probabilities);
- impartiality in making decisions. All these methods are based on purely formal, objective assessments, regardless of the nature of the problem. The models are formulated in such a way that all possible consequences of the events are clearly described, that the choice is measurable and that all possible solutions are clearly identified.

3 RESULTS AND DISCUSSION

Developers of formal analysis impose on decision-makers, their logic and rigor of approaches, their understanding of the possibility of outgoing information. However, there is always the question of how far all the possibilities examined can actually be realized, how far this analysis is accessible and convenient for decision-makers, is it possible to envisage all events and their consequences?

Critics of these approaches often question the ability of analysts to adequately assess organizational obstacles in meeting the recommendations and fear subjective bias hidden in the seemingly impartial assessments underlying such methods.

More and more often, in today's practice, top executives attract colleagues, experts and consultants to management decisions, which are somewhat insured. This usually refers to decisions not of a strategic nature, which are of particular importance to the business as a whole.

In such difficult cases, different options are applied (for example, the involvement of external experts – experts who help to use heuristic methods of solutions that are collectively accepted). Most often the brainstorming method is used. This method is a form of stimulating the creative activity of workers, a means of activating intellectual abilities when it is suggested to the participants to express maximum variants of the management decisions from which they are most successful for use in practice.

Technically, the methodology is limited to the following:

- a group of experts are invited, both working in and out of the company;
- two groups are formed: in the first, participants to propose new options for solutions to the problem, and a second, a committee to process the proposed ideas;
- in the idea-generating group, participants should not be in a relationship of obedience to have full creative freedom of proposals;
- the nature of the problem of a decision is predetermined;
- In the brain attack, participants should not be afraid that their claims are useless;
- Proposals should not be criticized either verbally or with gestures or intonations;
- It is desirable to have them displayed in a frank and free environment;
- the more ideas, the better;
- the proposals received are recorded and transmitted to the Commission.

It takes about 2-3 hours. Selected ideas are subject to practical development.

The peculiarity of heuristic methods and models is the lack of rigorous mathematical evidence of optimal solutions. However, the use of heuristic methods and models allows to reduce the review of all possible options to solve the task of planning and management, to reduce labor demand in search of the best solutions.

Heuristic methods and models are used in forecasting, plans and programs on different sites. Particularly in solving economic problems and problems with heuristic methods is that by using such approaches the logic of the solutions, the criteria of optimality and restrictive conditions set, the accepted or selected priority, when assessing the preference of the result obtained, are carried out by expert methods.

Expert methods and models are particularly important in solving complex, informal problem situations when incompleteness and dubious accuracy of information do not allow purely formal mathematical methods and models to predict, plan, control, analyze, and manage, and thus some estimates are made to substantiate the decisions. The general direction of these procedures treats the subject as a “measuring instrument” to obtain quantitative assessments of qualitative judgments that do not lend themselves to immediate measurement.

For this purpose, the experts conduct an intuitive-logical analysis of the situation under examination with quantitative assessments of processes or phenomena and formal processing of the results of the expertise. The resulting public opinion of the experts is accepted as a solution to the problem.

The processing of quantitative assessments of the expert group allows for more reliable data and new information not explicitly contained in the expert conclusions and allows the development of effective models for intuitive logical analysis combined with quantitative assessment and processing.

A peculiar feature of expert assessment methods and models as a scientific tool for solving complex informal problems is: first, a scientifically grounded organization for carrying out all stages of the expertise ensuring the effectiveness of each of the stages, and secondly the application of quantitative methods in the organization of expert assessments and in evaluating the expert conclusions and the formal group processing of the results of software products. These two features distinguish the methods of expert judgment from the usual and long-standing expertise applied in different spheres of human activity.

For the conduct of expertise the specialists who organize it are obliged to provide conditions for the effective action of the experts, to develop the procedure for the expertise that best corresponds to the nature of the problem. To enhance the reliability of expert assessments, appropriate selection procedures are required for many experts (competence, creativity, conformism, expertise, analytical thinking, teamwork, constructive thinking and criticality) and quantitative methods of expert characterization, both individual and group.

Thus, the task of the organizers of the expertise includes:

- formulating the problem, defining the objectives and tasks of the expertise, its boundaries, milestones;
- developing expertise procedures;
- selection of experts, verification of their competence and formation of expert groups;
- conducting a study and coordination of evaluations;
- formalizing the information received, its processing, analysis and interpretation.

In the implementation of the main management functions (forecasting, planning, assessment of circumstances, analysis, control, reporting, etc.) from the risk minimization decision point, the experts describe the problem situation, determine the multiple objectives of the forecast (risk programs, etc.), as well as generating many alternative development opportunities. The elaboration of each one is characterized by the enumeration of causality events and the timing of their distribution over time. Experimentally the preferences of the development options are determined in the form of reliability (subjective probability) for their realization. For example, the prediction criterion can be used to select the predictability criterion. It is also possible to choose a set of criteria.

Expert methods are subdivided into individual and collective. Individuals refer, for example, to the “interview” method, to analytical notes, to scenario development. Individual methods imply a completely independent work of each expert in solving the problem.

In the interview method, the expert interviews a specially developed program (questionnaire). The purpose of the questions asked by the experts should be related to disclosure: first, the potential sources of danger and the extreme conditions of their operation; secondly, to the events triggering accidents and catastrophes; thirdly, factors contributing to

the spread of the accident; Fourth, safety factors; fifth, the experience of exits from accidents, catastrophes and their consequences.

The compilation of the analytical expertise includes the expert’s own work on the analysis of the situation. The results of his work shall be shaped as a memo with the justification of the possibility of occurrence of adverse events and detriment, taking into account the above factors of danger and safety and their “burden”.

As a modification of the expert analytical report, scenarios for the origin and development of the adverse event can be analyzed, the losses incurred by the various sites, although this procedure, depending on the methods used, can be considerably wider. The basis of the scenario should lie in establishing and describing the real logical sequence of the situations that will lead to the occurrence of the damage. The methodology of its description usually requires attachment of the preconditions (stages) for the formation of adverse events over a given period of time. Account should also be taken of the possibilities of applying measures to prevent these preconditions, reducing the risk of the event, etc.

Scenario development requires a detailed study of the relationship between phenomena and factors that trigger the occurrence of adverse events and their impact on objects that can be omitted at an abstract level of their analysis.

As a modification of the interview method, the questioning of the population living, as a rule, close to the source of a potential danger can be considered. Questionnaires are usually aimed at revealing the reasons for people’s anxiety about environmental degradation. They help to identify the priority directions for reducing the various risks, to reveal the reasons for the deterioration of the health of the population and to check the effectiveness of the measures taken to prevent them and to reduce the duration of the impact.

A variation of the expert method is the Delphi method. It is characterized by anonymity and controlled feedback. The anonymity of the members of the commission is ensured by their physical isolation, which does not allow them to discuss the answers to the questions asked. The purpose of this division is to avoid the “snare” of group decision-making dominated by the leader’s opinion. After processing the results through managed feedback, the aggregate result is reported to each member of the committee. The main purpose of this action is for each member of the commission to get acquainted with the assessments of the other members of the commission without specifying who gave this or that rating.

Table 1. The mechanism for using the “Delphi method” is presented in the scheme

| Stages | Implementation of the “Delphi method” |
|---------------|---|
| First | Taking into account the personal position of each expert |
| second | Summarizing, opinion analysis, classification, and interrelations |
| Third | Providing experts with aggregated data and opinions |
| fourth | Joint study of aggregated data, clarification of differences |
| Fifth | Summarize the data provided on the analysis problem |

Source: International Business, 2018, p. 612.

It should be noted that the Delphi technique is applicable not only to solve problems in determining the risks but also to determine their quality characteristics.

Formal analysis, however attractive theoretically, the technical difficulties in its implementation often make it difficult for decision-makers to be unable to develop a clear and well-understood formula for solutions.

Alternative approaches can give a quantitative response without resorting to complex mathematical formulas based on past policy analysis. The advocates of such approaches affirm that society achieves a reasonable balance between risks and benefits only for a prolonged period of time based on the experience gained. Security levels achieved at old risks provide the best management of emerging risks. Assuming that such an equilibrium can be

identified, the balance between the cost of providing security and the benefits obtained as a result of the company's work that has been previously achieved should be retained for future decisions. It is thus possible to reduce and simplify the decision-making process, based on past experience and acting analogously to how our predecessors did. This method in English-language literature is called the "method of shoe linkages" which the decision-maker attaches to earlier decisions. This method is essentially a "method of analogy" or a "method of reproduction," since the decision is taken an analogy with previous decisions and reproduces them, one of which is the "preference method" which uses the cost-benefit balance as a basis for analogies.

In each of these methods, the past policy is also the basis for the future. Here decision-making policy is related to taking into account all the consequences of setting up new sites and imposing sufficiently stringent restrictions on emerging risks.

One of the conceptual limitations of these methods is related to the fact that there is no relevant experience for the new risks. Another drawback relates to the fact that these methods assess the adaptability of a particular choice without considering alternative solutions.

Difficulties arising in the design and analysis of economics and mathematical models have led to the emergence and development of simulation and simulation models that allow for a large number of interoperable subsystems and objects to be modeled using a computer system. In these situations an important role is played by the application of informal system analysis methods, which can be solved by an expert group, by heuristic methods. The interrelationship between these and other methods and imitation models forms a simulation system representing a set of patterns simulating studied phenomena and systems of external and internal security.

A simulation model is often understood as a computerized procedure formalized describing the subject under study and mimicking its behavior. For mimic modeling, it is characteristic of the imitation of elementary phenomena, forming a process of research, while preserving the logical structure, the sequence of their flow in time, the nature and the content of the information about the state of the process. The model in its form is logic-mathematical (algorithmic). When compiling it, there is no need to simplify the description of the phenomenon, rejecting sometimes even substantial details to bring the object in question within the model that is convenient to apply one or other known mathematical methods of analysis.

Many researchers believe that the most appropriate models for describing targeted projects are graphical models. Practically, at the present stage, the role of graphical methods and models in economics management has increased in relation to automation of calculations and their subsequent graphical representation of displays or their printing in the form of different networks (network models), decision trees, trees "objectives events", graphics and other forms.

Another important risk research method is modeling tasks using the "decision tree". This method involves the graphical construction of solutions that can be adopted. Branches of the tree are subjective and objective assessments of possible events. Following the branch line and using special probability calculation methods, they are evaluated each time and then the less risky is chosen. However, this method takes a long time. In addition, the "tree" takes into account only those actions that the subject intends to realize, and only those results that are significant from his point of view. It does not take into account the influence of the external environment on the company's activities and the entrepreneur can not always foresee the actions of the partners and the competitors.

The methods of informal system analysis are related to heuristic methods, models and standards, which represent a special category of methods and models that allow the accumulated experience from solutions of various planning and management tasks, some

simplifications, rules and methods aimed at improving of the results obtained, etc. These unformalised methods describe economic processes and solve economic problems based on intuition, past experience, expert judgment, and others.

The choice of its optimal option is crucial in the decision-making process. It is related to the following issues:

- Multiplicity of undefined factors in the environment;
- hierarchical decision-making level;
- the objective of seeking compromises;
- levels of responsibility for the solution adopted.

It should be taken into account that both the decision-making procedure and each of its stages should be objectively assessed in the course of the movement and processing of the necessary information, taking into account the time factor. Therefore, it is necessary to structure the process of developing the solution, formalizing its design. This process, however, is very complex, as many objectives, criteria, factors determining the choice of their assessments, etc. should be taken into account. To this it should be added that the process is considered simultaneously as a single one and the best compromise should be sought from this multitude. Finding the best solutions comes from comparing the expected economic and social outcome with the analyzed alternatives. Here, the impact of uncontrollable factors on the consequences of the implementation of the decisions taken and the degree of potential risk can not be taken into account. The higher the level of control in the hierarchy, the higher the time range, the more controllable factors can be assessed. It also happens that the practical implementation of decisions does not provide the results necessary for the set goals.

Under these circumstances, the emphasis is placed on the opportunities that ensure the realization of the goal set forth as soon as possible. In addition, account should be taken of the limitations available, such as the uncertainty and the degree of risk, as well as the existing standards in project management, as at the present stage various organizations and initiative groups have developed a sufficient number of standards, related to project management.

4 TYPES OF STANDARDS

Depending on the main application areas, standards can be divided into the following groups:

- First – applicable to individual management projects (project, program, portfolio of projects) and regulating relevant management processes.
- Second – applicable to management entities (project managers, project management team members) and defining the knowledge and qualification requirements of the respective specialists and the process of qualification assessment.
- Third – applicable to the project management system and the organization as a whole and allowing to assess the level of maturity of the organizational management system.

The most popular standards in the field of project management are:

- ISO 10006. Quality management system. Guidance on project quality management;
- PMBOK Guide. A Guide to the Project Management Body of Knowledge. Project Management Volume Management, PMI;
- PMBOK Guide Government Extension. Project Management Volume Management for Government Organizations, PMI;
- WBS. Guide to developing the hierarchical structure of project work, PMI;
- Earned Value. Handbook on application volume utilization, PMI;
- PRINCE2. Project Management Standard, OGC (Office of Government Commerce), UK;

- The Standard for Portfolio Management, PMI. Project portfolio management standard, PMI;
- The Standard for Program Management, PMI. Program Management Standard, PMI;
- Managing Successful Programmers, OGC UK. Program Management Standard (Office of Government Commerce), UK;
- P2M Japan. Standards for project and program management in the organization, Japan;
- OPM3. Model of maturity of the organization in the field of project management, PMI
- IPMA Competence Baseline (ICB). International Requirements for Competence of Project Managers, IPMA;
- PMCDF PMI. Project Management Competence Development Framework, PMI;
- GPBSPM. Global Performance Based Management Standards for Project Management Personnel, GPBSPM Initiative.

Standards developers are mainly professional organizations or groups of experts from international or national level.

The basic standard is developed by IPMA. This standard specifies the requirements for the qualification of project management specialists and is the basis for international certification.

Experts who have been certified under this system are certified internationally and are recognized throughout the world.

Another authoritative organization in the field of project management is the Institute for Project Management, USA (PMI) with an individual membership system-numbering more than 200,000 people in 125 countries around the world. PMI conducts the most active and broad strategy in the field of standards development.

In addition, many national project management standards have been developed: APM (UK), VZPM (Switzerland), GPM (Germany), AFITEP (France), CEPM (India), PROMAT.

The most structured and most structured and most widely developed are the standards governing the management of individual projects. In this group of standards can be distinguished:

- ISO 10006: 2003 Quality Management System. Guidance on project quality management;
- PMBOK Guide. A Guide to the Project Management Body of Knowledge. Volume Management of Project Management, PMI. Third Edition.
- ISO 10006: 2003 Quality Management System. Guidance on project quality management.
- ISO 10006: 2003 as an international standard in itself is not a project management guide. It provides guidance on the quality of project management processes.
- Such as designing, manufacturing, checking). The guiding quality guidelines for the product of the project are addressed in ISO 9004-1.

The standard is applicable to projects of varying degrees of complexity, small or large, short-term or long-term, executed under different conditions irrespective of the type of product or process. The presented framework requirements require subsequent adaptation to the specific conditions of development and implementation of the individual project.

The standard distinguishes the concepts of the management process and the phases of project implementation. The project can be divided into various interdependent processes and phases as a means of planning and controlling the realization of objectives and assessing the associated risks.

The phases divide the life cycle of the project into manageable stages – such as concept development and design documentation, project implementation, commissioning.

Project processes are needed to manage the project and also to implement the product of the project.

Processes are grouped according to some kind of generic trait. In the standard, a total of 11 groups of processes are distinguished:

- strategic (defining the project guidelines);
- resource and staff related;
- affecting interconnections;
- affecting the field of application;
- affecting time;
- cost-related;
- related to the transmission of information;
- affecting risks;
- related to purchases.

To the 9 groups mentioned separately are the processes concerning the dimensions and the analysis and the continuous improvement.

The standard contains a description of each process, as well as guidance on quality management for each particular process.

At the core of the design guidelines for quality management contained in the given international standard, there are eight principles for quality management (see ISO 9000: 2000,0.2):

- User orientation;
- Leadership of the manager;
- Involvement of workers;
- Process Approach;
- System approach to management;
- Continuous improvement;
- Adoption of decisions based on facts;
- mutually beneficial relationships with suppliers.

These common principles form the basis of quality management for the initiator organization and the project implementing organization.

PMBOK Guide is an American national standard for project management that is widely used throughout the world. Underlying the standard is the process model for describing the project management activity.

As key development goals, the Guide defines the unification of the terminology and the use of the document as a reference reference tool for the certification of project management professionals.

The Guide specifies:

- The Project Management Structure (Part 1). This section contains the basics of project management, basic terms are defined, and an overview of the chapters of the Guide is made. Particular attention is paid to concepts of project life cycle, organizational structures and project environment;
- The project management standard (Part 2) includes the description of five groups of management processes: initiation, planning, organization of implementation, control and completion. Within these groups of processes, 44 basic management processes and their interrelation are described;
- The areas of knowledge about project management (Part 3) consist of nine areas of knowledge: management of integration, content, timing, value, quality, human resources, communications, risks, supply. This section details each of the 44

management processes, including a general description of the input and output information process, and also lists the recommended methods and tools.

The PMBOK Guide includes a description of the management processes listed below.

Project integration management is the most important of the knowledge area that includes different elements of project management within the process groups. Here are the following processes:

- Development of the project statute;
- Elaboration of the preliminary description of the content of the project;
- Development of prana for project management;
- Project management and management;
- Monitoring and management of project activities;
- General management of changes;
- Closing the project.

Content management of the project plays an ancillary role because the project plan here is detailed on the composition of the activities in a volume necessary and sufficient for the successful implementation of the project. The following areas are involved in this area:

- Content Planning
- Content Determination;
- Creating a hierarchical structure of activities;
- Content Confirmation
- content management.

Project time management includes time management processes to form the project's calendar to meet the deadlines:

- Determining the composition of the operations;
- Determining the relationship of operations;
- Evaluating the resources of operations;
- Evaluate the duration of operations;
- Development of the calendar plan;
- Manage the calendar plan.

The value management of the project is aimed at the successful absorption of its budget, the consistent realization of the planning, development and cost control processes. Includes the following processes:

- Value evaluation;
- Expense budget development;
- Value management.

Risk management of the project involves identifying risks, developing a risk map, and compiling a response plan for each. Contains the following management processes:

- Planning of risk management;
- Qualitative risk analysis;
- Quantitative risk analysis;
- Risk response planning;
- Risk monitoring and management.

Quality management is geared to meeting the quality requirements of both the product and the project. Takes into account the requirements of the International Organization for Standardization (ISO), as well as the author and general models. The area includes the following processes:

- Quality planning;
- Quality Assurance Process;

- Quality control process.

Human resource management in project management practice plays one of the key roles and depends on the completeness of achievement of the goals and the overall success of the project:

- Planning human resources;
- Selection of the project team;
- Development of the project team;
- Managing the project team.

Project management management involves the timely and reliable collection, distribution, storage and use of information for all participants entering the team in accordance with their roles in the project. The following processes are distinguished:

- Dissemination of information;
- Reporting performance;
- Managing the participants in the project.

Supply management for the project describes the processes of acquiring and receiving products, services and results, as well as the processes of contract management. The following areas of knowledge are involved:

- Planning of purchases and materials;
- Planning of contracts;
- Search for information from sellers;
- Selection of vendors;
- Administration of contracts;
- Closing (termination) of contracts.

One of the guidelines for the development of the PMBOK Guide is its adaptation to industry specificity. Extensive standards for government and construction projects are currently being developed. In addition, standards relating to separate project management methodologies are being developed. Standards have been developed for the development of hierarchical structure of project activities and control of volume utilization.

An interesting standard governing the management of individual projects has been developed in the UK - PRINCE2. The standard also regulates management processes and control parameters at the individual project level. The standard describes the link between management processes and requirements to the structure and characteristics of the product created within the project.

A relatively new area of standardization is the process of managing such projects as programs and a portfolio of projects. Pioneers in this area are the standards developed in the UK, however, international standards in the field still do not exist. In the role of commonly recognized, they can claim the 2006 Standards PMI: The Standard for Program Management and The Standard for Portfolio Management. These standards are also built on the process principle.

The main goal in developing the project portfolio management standard is to formulate the conceptual space of project portfolio management, defining typical processes and their results without linking to the sectoral specificities of the business, and describing the key roles in portfolio management, the area of responsibilities and credentials. The organization's strategy and tracking capabilities through the processes of integrated portfolio management of projects, programs and individual projects are important. The relationship with the functional areas of management is revealed: finance, marketing, corporate communications, personnel management.

The relationship between portfolio management and program and project management is established through the following portfolio manager functions:

- Compensation of components in line with the strategy;
- Ensuring balancing and sustainability of components as part of the portfolio based on key indicators;
- Determining resource availability and prioritization;
- Turn Portfolio Components on and off.

The portfolio management system for the effective implementation of the presented features provides for the following key roles and subdivisions to be included in the management: Portfolio Management Observatory, Clients, Sponsors, Executive Directors, Operations Management, Program Managers, and project managers, project managers, functional managers, financial managers, project team members.

Portfolio management processes are represented by two groups.

The first group of portfolio-forming processes includes their management processes, ensuring balance between the project portfolio and strategic goals of the organization. The group includes the following processes: project identification, categorization, evaluation, team, priority assignment, portfolio balance, authorization.

The second set of processes includes monitoring and control based on activity indicators that periodically align portfolio components to strategic goals. These include the periodic accountability process, the analysis of project portfolio status and change management.

Among the standards defining the competence requirements of project managers, the International Requirements for Project Management Professionals developed by the International Project Management Association IPMA (Switzerland) and the Project Manager's Project Manager (Project Manager) Competency Development Framework developed by PMI based on the structure and processes of PMBOK Guide.

At present, an international initiative group of project management professionals has prepared the development of a further standard for assessing the qualification of project managers based on results – Global Performance Based Management Standards for Project Management Personnel.

The International Requirements for Competence of Managers define the requirements for the knowledge and qualifications of the specialists and also the certification process at four levels of qualification in the field of project management:

- Project Management Specialist;
- Project Manager
- Leading project manager
- Program Director.

The International Requirements for Competence of Project Management Professionals contain three groups of mutually related knowledge elements:

- Twenty technical elements of knowledge relating to the content of project management;
- Fifteen behavioral elements of knowledge relating to interpersonal relationships between individuals and groups involved in projects, programs and portfolios;
- Eleven contextual elements of knowledge pertaining to the issue of interaction between the project command in the context of the project and the organizations that initiated and participated in the project.

In recent years, standards have been developed and refined to target the complexity of the organization-wide project management system.

One of the most authoritative contemporary standards in project and program management, recommended by international specialists is P2M. His positions are guided in the management practice by many national and international corporations.

The initial idea of the P2M standard concept is to present the projects and programs as key elements of the strategic management of the organizations. The standard includes both

sections detailing the general concepts and the terminology of project and program management, as well as eleven main management segments.

At the end of 2003, PMI offered an organizational project management maturity model OMP3 (Organizational Project Management Maturity Model), which is positioned at the outset as an international standard in the field.

According to the definition of PMI, organizational project management is the systematic management of projects, programs and portfolio of projects aimed at achieving the company's strategic goals. It is the use of knowledge, habits, tools and techniques in the organization's project activity to achieve its goals through project implementation.

The term "maturity of organizational project management" includes the ability of an organization to select projects and manage them in such a way as to maximize their effectiveness in achieving the company's strategic goals.

The main purpose of OMP3 is:

- Provide a corporate governance standard for projects defining the core elements of the corporate project management system at all levels – from the strategy and the portfolio of projects to individual projects;
- To serve as a tool to allow each organization to define its own maturity in project management, and to develop guidelines and concrete steps for developing the corporate project management system.

The OMP3 standard is a collection of knowledge including a description of the key concepts and structures of the standard, model structures underlying the standard, and procedures for using the standard.

The standard toolbox consists of three interrelated elements:

- Knowledgebase – the best project management project database (about 600 practices in different areas of management);
- Assessment tool – an instrument that helps the user answer the survey (over 150 questions), independently assessing the project's maturity for project management, defining the main areas of competence and existing practices;
- Improvement, – when the organization adopts a decision to develop project management practice and moves to new, higher maturity levels for project management.

The best practice base is structured in three areas of governance – a portfolio of projects, a program, a project, and four levels of process formalization – standardized, measurable, manageable and optimizable.

The new PMI standard provides a comprehensive approach to describing the project management system in organizing the different levels of management – from the individual project and programs to the project portfolio.

The international certification of project management specialists is a process that determines the compliance of the candidate's professional knowledge, experience and habits (defined by the requirements of the project management specialists) and the applicant's activity (project manager's code of ethics).

The certificate is a testimony to the experience and professionalism of the project management specialist by an independent, authoritative body.

The benefits of certified project management specialists are as follows:

- International Recognition of Qualification and Competence;
- Personal advantage for career development
- Raising the professional rating and the cost of the services they provide.

The advantages of a company with certified project management specialists are as follows:

- Ensuring the company's needs by qualified professionals in the field of project management;

- Increasing the efficiency of the work of organizations using the services of certified specialists;
- Raising the rating and competitiveness of the company at the expense of certified project management specialists.

Among the international project management certification programs, the most significant are: the International Project Management Association (IPMA) certification and the Institute of Project Management (PMI) certification.

The IPMA Certification Program includes four levels, each of which has its own compliance requirements. According to the obtained results, one of the following titles can be assigned to the specialist:

- Project Director (Grade A) – capable of managing a portfolio of projects or a program using the relevant methodology and tools and not just single projects;
- Senior Project Manager (Grade C) – capable of managing a complex project, coordinating several projects within it;
- Project Manager (Grade C) – capable of managing a project of limited complexity;
- Project Manager Proficiency (Grade D) – capable of applying knowledge in project management and may be involved in projects as a member of the management team but his/her general knowledge is not sufficient to implement more complex tasks.

The PMI certification system is based on the PMBOK standard, giving two levels of certification:

- Professional Project Manager (PMP – Project Management Professional);
- Certified Project Management Specialist (CAPM) – Certified Associate in Project Management.

PMP Certification requires theoretical knowledge in the field of project management and proven practical experience in the use of theoretical knowledge.

The CAPM certification is designed for professionals who have knowledge in project management but do not yet have enough practical experience.

Research into the development of methodologies and management tools at individual project level is aimed at increasing the efficiency of management processes at the expense of increasing accuracy in assessing the parameters of individual activities in the conditions of uncertainty and risk growth. An example of a new approach to project planning and control, which has gained considerable popularity in recent years, is the Critical Chain Project Management. In this approach, developers try to rethink and complexly take into account the different factors (from the organizational behavior of the participants to the redistribution of risk responsibilities) when setting goals and planning.

In recent years, research has been geared towards increasing the effectiveness of the team and key project participants by focusing on the motivation and interaction of participants.

These studies also address the issue of leadership, qualification, motivation and career development of project managers.

The radical change of the system of organization in the investment activity of the company requires the implementation of a special project with the conditional name “Transition to a project management system”. The implementation of the project should make it possible to practically solve the transition to a project-oriented management form. The following tasks have to be solved within this project:

First. Create new (or adaptation of existing) structures. The following schemes are dealt with to solve this task:

Creation (along with the traditional, as a rule, functionally oriented divisions of the company – production, planning, financing, control, reporting, cadres, etc.), new project-oriented structural education (project A, project B, etc.). The new subdivisions can function both on a permanent as well as on a temporary basis;

Establishment of specialized companies – professional project managers performing project manager functions for the client. In this case, a client is understood to mean each of the project participants hiring the consultant. Such companies can be created:

- a) “in a blank place”, taking into account the real business situation determined on the basis of marketing;
- b) on the basis of designing institutions (recommended to be the general contractor of the project). Such institutions traditionally deal not only with pre-investment research and project-research, but also with author’s supervision, and also participate in the formation and protection of customized equipment specifications. Around this core can be formed the other structural elements of the company;
- c) on the basis of one of the client’s subdivisions (for example, a building site or a capital construction department). Such a decision will also require that the company be included with the necessary professionals “from outside”.

Second. Develop the functioning mechanism. In this case, the most important issue is the status of project-oriented structures. Possible variants of schemes that define the status of the new project management structures are: “basic”, “advanced management” and “turnkey”.

Each of these schemes has its scope and determines the degree of delegation by the client (the investor) to the project manager. It is logical for the client (the investor) to be guided by the less-risk “basic” scheme and only after a while to begin to delegate to the project manager the authority to dispose on his behalf with the financial resources and to ensure that the project is put into operation exploitation.

Third. Staff training. The preparation of professional project managers at all levels should be sought in the following areas:

- In higher schools;
- in structures for upgrading and retraining of specialists;
- Taking into account the psychological aspects of staffing of project management – organization of qualified assistance of specialists digesting project management in adapting to working conditions in the “team” fundamentally different from existing so far.

Fourth. Legal regulation. Improving the number of legislative and regulatory acts regulating the investment and general entrepreneurial activity. Experts recognize the need to develop legislation and regulations effectively regulating: purchasing and supply, certification and licensing, environmental protection.

Fifth. Financing. Improvement of the forms of project financing can be done through the establishment of a Project Financing Center. Serious problems create projects funded by the state budget. In commercial projects financed from own or borrowed funds, the customer in connection with the apparent effectiveness of the new system and simplify the functions of Directorate trail of the enterprise and the general contractor may decide to direct the services of project manager as part of the funds in the fund of the directorate of the construction enterprise or as part of the funds earmarked as overhead costs of the general contractor.

Upon signing a contract under the so-called extended scheme, the client may direct a portion of the profits to pay the project manager’s service, which is formed by the results of the completed construction phases of the project, the actual costs against the planned value of the works.

Sixth. Management technology. The project management process should adhere to modern technology, which requires:

Create and maintain the database in all phases and stages of the project life cycle;

Implement modern, automated planning and control systems, as well as data processing and transmission facilities.

5 CONCLUSION

Finally, it should be taken into account that the transition to project methods and standards for regulating the economy in Bulgaria is related firstly to the gradual formation of conditions for the use of the project management methodology. It is both an effective management tool in the real-world conditions and at the same time a verified instrument for the realization of investment projects of the required quality within the set timeframes and within the adopted budget. The project as a system of activities for effective corporate decisions is carried out with the duration as long as it is necessary to achieve the end result. The concept of the project, however, does not contradict the concept of the firm or the enterprise and is fully compatible with it. Moreover, the project is often a major form of corporate activity.

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CARPOOLING – WHAT WE HAVE TO KNOW ABOUT IT

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ABSTRACT

Carpooling is a new chapter of the Bulgarian 21-st century economy. The author has for a purpose to answers questions like: What is “carpooling”? Where we can get an information about ride-sharing? Why people use it? Is it save? What problems can we have when we share a ride? The information is gathered by most rated and used carpooling and ride-sharing platforms, forums, researches about shared traveling and tourist attitude and studying Bulgarian laws. The paper gives the main information every participant in sharing economy needs about this type of traveling. It also shows that it is a widely accepted conception of developing a new transport system. The study uses a methodology based on gathering an information by the most rated and used carpooling platforms, carpooling statistics and researches and according to their analysis choosing to provide the most needed information about carpooling process.

Keywords: carpooling, ride-sharing, shared trip, carpooling platforms

JEL: L26

1 INTRODUCTION

Following the events of 11 September 2001, the world has changed completely. Terrorist attacks extremely affected on the tourist decisions while choosing a holiday destination.

Researchers like Anshul Garg (Garg 2015) has shown in their studies that the effects of terrorist incidents have an impact on both the current turbulent flow and the decision-making motivation of others in a conflict region. The main purpose of such violent events is to fear travelers. According to Sonmez and Graefe (already in 1998), 77% of tourists only choose safe cities to travel.

What is particularly interesting is, despite the increased importance of security when choosing a destination, in some cases when choosing a way of traveling, many people are increasingly choosing the so-called “carpooling” because it’s much cheaper than other transports.

Timbro global index (Institute for Market Economics) ranked Bulgaria on a 63rd place in the world in a shared economy. One of the major stakes in this direction is exactly the carpooling. In Bulgaria, it has faded over the last few years, and even two years ago, the government wanted to impose a ban. This type of travel, however, is gaining more and more speed.

“Carpooling” – meaning and needed information to know (Figure 1):

Ride-sharing has been a popular travel to America and Western Europe for many years.

The need for people to travel cheaper, more comfortable and to a more pleasant company leads to the emergence of the carpooling. There is no explicit regulation in the law about what a shared journey is. It can be defined as a contract (in most cases oral) between a driver of a car and another person/cohabitant to split the cost of fuel. Individual nations aim to achieve different effects by affirming carpooling. Carpooling can be seen as an alternative and relatively new method of travel where a person provides a vehicle (usually his/her own) and transports one or more people to their destination in exchange for a pre-agreed amount of money (Chen and Hsu, 2013).

Carpooling has one big advantage – the Green messages. Countries such as America, Spain, Austria, New Zealand, Sweden, Norway, Indonesia and others emphasizing environmental protection, reducing traffic and limiting carbon emissions by setting up a “fast” band for shared travelers in traffic rules to drive this type of movement.

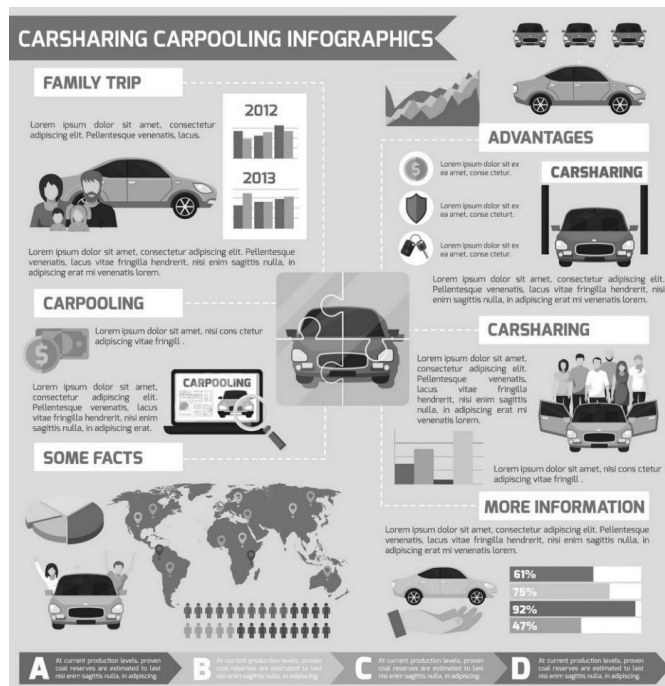


Fig. 1. Carpooling scheme¹

In Bulgaria, this journey type is becoming more and more popular. Many attempts have been made for a working platform to be created but for now, they’re not enough successful and useful. The reason is that most people still rely on social media’s posts.

There are a few ways to find travelling satellites:

1. The perfect case is to have a friend or acquaintance to travel in the same direction. It’s not always possible.
2. Ride-sharing Websites – These sites act as intermediaries between drivers and passengers. Sites work as “search engines” based on criteria such as urban/intercity travel, date, time, etc. When using the services of the site, the user must register, that is, he/she provide his/her personal data and agree to its general terms and conditions (he/she makes a contract under general conditions).

Important! Sites are only a transit intermediary and everyone’s terms of service contain a similar clause, “The site is not responsible for any direct or indirect loss that may have been incurred by you.”

Social groups for ride-sharing trips – the special here is that there is no intermediary between the travelers – the driver posts a publication about the destination, time and free spaces in the vehicle. Accordingly, the traveler posts containing the time and destination to go.

In these travelling types, there are no guaranty for passengers’ safety or reaching the destination on time.

There are many instances of social networking posts for an incorrect driver or traveler who is removed from the group.

¹ <https://www.vectorstock.com/royalty-free-vector/carsharing-carpooling-infographics-vector-11559667>

Carpooling platforms:

The author makes his own online research about most used and high ranked Bulgarian and world platforms. They use apps to make it more convenient for users to use them anywhere.

Here are some of them:

Popular world platforms:

- **DRIVENOW** – owned by BMW. It's operated in 8 European countries – Germany, Austria, United Kingdom, Denmark, Belgium, Italy, Finland and Portugal. By using DriveNow app a car can be rented from anywhere in the particular DriveNow Zone. A user can pick it from the closest place and he can just leave it in the nearest parking everything is included in the price – insurance, parking, road taxes and fuel.
- **CAR2GO** is a German rental company providing car services in urban areas in Europe, North America and China. It provides the same services as DriveNow.
- **UBER** is a peer-to-peer ride-sharing, taxi cab, food delivery, bicycle-sharing, and transportation network company (TNC) headquartered in San Francisco, California. Its platforms can be accessed via its websites and mobile apps in 66 countries and 507 cities all over the world. Payments are made via a credit or debit card. In most countries 80% of the amount paid is taken by the driver, 20% is for *Uber*.
- **LYFT** is an on-demand transportation company based in San Francisco, California. It develops, markets, and operates the *Lyft* car transportation mobile app. For a payment platform, use credit card or link to an Appel Play, Google Wallet or PayPal Passengers can then request a ride from a nearby driver. Passengers and drivers must have their own profile in the app with personal data so they can have an information whom they'll travel with. (Lyft, 2017).
- The best thing that *Uber* and *Lyft* offer is that every driver can be a part of that “shared economics” by getting a job here with his/her own vehicle.
- **BLABLACAR** is the world leading long-distance carpooling platform. It's a trusted community marketplace that connects car drivers with empty seats to passengers looking for a ride, over average distances of 300km. The platform has 60 million members in 22 countries and over 18 million travelers every quarter.
At this platform, people always can find an information for the driver/other passengers because every member has an online identity by a personal account and can leave comments about their experience with other people.

Most popular Bulgarian carpooling platforms:

- **Aha! Car** – created in 2013 by three ingenious Bulgarians and distribute among the Bulgarian public institutions free of charge application for stimulating shared travel as part of the Sustainable Urban Mobility measures. The application was installed on the site of the municipalities of Pernik, Bansko, Veliko Tarnovo and Rakitovo and tends to appear in other parts of Bulgaria. The Balkan platform worked in Bulgarian, English, Serbian and Greek. It was also included a separate module for the promotion of cultural, social, ethnic and charity events in the Balkan region in order to stimulate music fans and participants in a number of events to travel together. There had also an application for a quick filter of routes leading to a specific higher education institution to help students. Also offered the Ladies Car service, women-only trips. Also had a project to promote carpooling to help the movement of blind people across the country.

Since 2017, *Aha!Car* is no longer supported. Upon request to the creator of it Kaloyan Iliev, for the reasons why it no longer exists, he replied:

“We failed to monetise it and there was a huge imbalance between effort/resources and returns. With GDPR entering and the responsibility we have as a legal entity, we thought it was time to quit.”

- **SEDNAKOLA.COM** – the site requires registration, allowing passengers to get information about drivers. Also on the site is recorded that commercial trips cannot be made for profit. Everyone pays a price based on the fuel consumed and the number of passengers in the car – www.sednakola.com
- **START.BG** – an ad platform that also contains shared travel information in a section – www.spodeleno-patuvane.start.bg, where information is collected from the pages on Facebook set up for this type of trip.
- **PREVOZVALNIK.BG** – a travel platform where you can get detailed information about the driver – <https://prevozvalnik.bg/>
- **VEDNAPOSOKA.COM** – in addition to offering travel and city options, the site also offers a variety of news related to booking hotels, traffic in Sofia, communications from Sofia Urban Mobility Center and Bulgarian weather. Here you can easily check both the Road Traffic Law and the Road Traffic Regulations – <http://www.vednaposoka.com/>

Advantages and disadvantages of carpooling:

Four Italian students – Maria Vincenza Ciasullo, Orlando Troisi, Francesca Loia and Gennaro Maione used Twitter to make their own research in 2017 about the reasons for people using or not using carpooling. A large-scale text analytic study has been conducted by collecting Twitters’ users’ opinions. The media was chosen due to its high popularity – in 2012 (Twitter official blog), more than 140 million users posted about 340 million tweets a day and the service handled an average of 1.6 billion search queries per day. The analysis was performed over the course of the 12-month period, from the beginning of October 2016 to the end of October 2017.

The process of data collection has been realized by means of a web crawler named Twitter4J. It gathered data in nearly real time and then by implementing specific filters finding posts including the hashtag #carpooling. This allowed the crawler to identify, selected, gather and assimilated lots of words, thus obtaining a classification capable of highlighting many keywords connected to the considered phenomenon, which, once analyzed, allowed understanding of the reasons why people used or did not to use carpooling. (Ciasullo, Troisi, Loid, Maione, 2018).

After mining, by using “SentiWordNet” software they identified peoples’ perceptions about carpooling which lets them to identified 12 main concepts: economic efficiency, environmental efficiency, comfort, traffic, socialization, effectiveness, flexibility, reliability, privacy, danger, curiosity and trust.

The study provides at least seven good reasons why people use carpooling and five other motives why they decided not to do it.

Advantages:

- *Economic efficiency* – depending on the end point of travel, it is often cheaper to travel shared than other modes of transport.
- *Environmental efficiency* – a reduction in the number of cars on the roads will help to protect the environment and help to reduce air pollution.
- *Comfort* – it’s more comfortable to can travel in the right time with the right vehicle.
- *Traffic* – more sites in the same car positively affects the number of vehicles in circulation and contributes to a reduction in road congestion.
- *Socialization* – it allows to create social connections with unknown people.
- *Technological reliability* – users are satisfied with the technology.
- *Curiosity* – sometimes people want to try something new and after this day may never try it again.

Disadvantages:

- *Effectiveness* – or ineffectiveness of travel services. The study shows that the preferential carpooling lines that many countries have, caused more congestions, contrary to many allegations that it facilitates the traffic.
- *Flexibility* – people can arrange the routes but not every time they really can range the time travelling.
- *Privacy* – first, people must share some information in the social media to can get in touch, and second, when they travel together sometimes can give more personal information than they wish.
- *Danger* – 767 tweets about the concerns of travel with strangers. Nobody can't guarantee peoples' safety.
- *Trust* – again, platforms and travelling with strangers recommends sharing some personal data and information.

Regulations of carpooling, rights and obligations of drivers and passengers:

There is almost no law regulation for this type of traveling. At least not for Bulgaria. But it seems that people are not worried about their safety. That is a conclusion based on the high per cent of the people using the following platforms.

The only one regulation that every site or social media make is to require every user to register yourself with a personal information. Accept that the profile consists this data it also gives the possibility for every person to share his/her own experience with the driver/passenger.

Law regulation:

It is difficult to define legal work for this type of travel, provided that they aren't an activity that can receive such regulation. At least not for those who are really spending money. Platforms such as Uber must be subject to regulation. For now, a legal frame is not found.

Krasimir Iliev (one of the creators of Aha!Car) gives the first step. According to him, it is first of all important to give an adequate law definition of the concept of "carpooling", because if there is no such regulation, there will be interpretations that will even hinder these trips. He gives the following definition about carpooling:

- When a driver provides transport to one/several passengers without any of the participants having financial gain, this is carpooling.
- When fuel allocation arrangements do not include the definition of "at the ticket price", this is carpooling.
- When travel arrangements are made in a web space or ride-sharing groups in which groups or platforms administrators can provide information to designated authorities for shared trips, this is carpooling.
- When the route of the trip does not coincide with the bus routes of the interurban transport and does not start or end at the interurban bus terminals, this is carpooling.

In America, for example, carpooling is stimulated by the state as a single lane is added to the roadway for cars that travel exactly on this model.

Right and obligations of driver and passenger during carpooling:

For shared trips, the general rules on road safety laid down in the Road Traffic Act apply.

- Before leaving, the driver is required to check if his/her vehicle is in good conditions – brakes, closing and opening doors, etc.
- It is forbidden to exceed the load capacity of the vehicle – if the car is four-seater, they can not travel six.

- Carriage of children under 12 years of age is prohibited in the front seat of the car unless the child is in a special seat.
- Everyone has concerns about traveling with an unknown driver, about his/her capacity, whether he/she has used alcohol or other drugs, whether the car is stolen, whether it is upright and has all the examinations.
- In negotiating, before the passenger gets in, he/she can ask the driver to show that he/she has the relevant documents such as a driver's license, a registration card, etc. The driver is obligated to do it.
- The driver must be sober. He/she must take into accounts the needs of travelers.

2 CONCLUSIONS

There is still no adequate regulation of this type of activity in our country, as the law can not determine the exact boundary between shared non-commercial travel where people share the cost of transport and shared commercial profit, where drivers organize regular passenger transport. As the State Automobile Inspection (SIA) officers cannot stop private cars in order to check them, the only amendment that can be made in the Bulgarian legislation is an additional point, which points out that the controlling authorities have the right through an appointed person or an undercover person, identify a violation and record the people they consider to be witnesses, then the investigative body can question them. And here.

For now, in Bulgaria, the only regulation can actually be implemented by the administrators of the carpooling platforms and pages, which limit the availability of drivers that are trying to benefit from this type of travel.

Indeed, it is difficult, and perhaps impossible, to have a regulation specifically for this cost-sharing activity. The only ones that could be subjected to legal regulation are platforms such as Uber and Lyft, as their drivers are not currently working on a contract and their profit is not taken into account.

Shared economy (Figure 2) and particularly ride-sharing are the future of the world. The Internet changes the rules of traditional economics and businesses and takes them to another level.

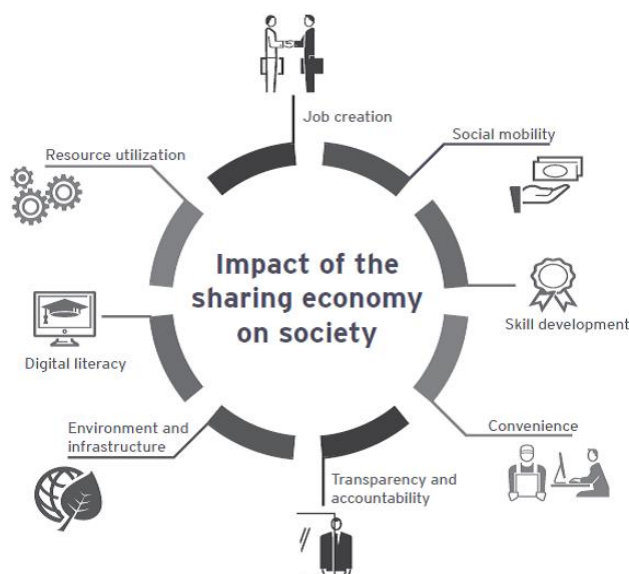


Fig. 2. Shared economy²

² Impact of the Sharing Economy on Society Source: Biswas and Pahwa, 2015

Shared economy is growing rapidly to respond to demand in a way that would be hard to imagine for a traditional tourism industry. In some countries like Iceland, it even managed to help the traditional economy during a crisis, with tourism gaining considerable growth.

Overall, countries with a strong internet structure and a significant share of tourism have largely shared economies, according to the Timbro report. A shared journey definitely has a significant share in them.

In view of the positive impact in terms of reducing traffic and helping to preserve nature's cleanliness, as well as aiding the economy rather than reducing it, such type of activities should be encouraged and supported by the state. And as they penetrate with enormous power, more resourceful entrepreneurs manage to restructure businesses and create new niches to earn.

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CERTAIN PROBLEMS AND CONTROVERSIES WITH EMOTIONS IN BUSINESS

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ABSTRACT

The paper aims to eliminate some problems and controversies regarding emotions, feelings and emotional intelligence, both in theory and in practical application in the sphere of business. The work asks questions more than giving answers so as to leave room for a different thinking, or a maker of re-examination, above all the hard-line positions that exist in the liturgy on this issue. The influence of employees, ie emotions on business success, is evident. Practice shows that a significant number of people spend a great deal of time on focusing on the other's, and far less on his own achievements. Here reason should prevail and search for balance, because it is impossible in all areas to be the best.

Keywords: emotions, emotional intelligence, business

JEL: M12

1 INTRODUCTION

It is known that man is not only a social, but also an emotional being. While man as a social being is spoken about quite a bit, man as an emotional being is neglected, and especially the influence of emotions on business. This phenomenon is mainly dealt with by psychologists and sociologists, which is insufficient for the holistic understanding of emotions. The problem is compounded because there is a certain problem and controversy about the understanding of emotions, both in theory and in practical application when it comes to organizational systems.

The classic theory of management and organization denied emotions and feelings. The theoreticians of this school felt that business and emotions were incompatible and that business meant excluding emotions from the workplace. In other words, excessively emotional individuals were evaluated in the selection of staff negatively, and for those who were employed, they were asked to leave their emotions and feelings "in front of the factory gates" and to devote themselves to the organization of tasks, operations and tasks defined by descriptions jobs. Every manifestation of emotions in the organization is more sanctioned, and if it is about the appointment of managers., The sensible persons are mostly eliminated, and especially those who succumb to little positive feelings and understanding for all actions of those to whom they are conditionally subordinated.

2 PROBLEM OF DEFINITION AND EMOTION

The issue of emotions and emotional intelligence was a little discussed in business management literature. The topics that dealt with this issue are mostly based on psychological and sociological literature, on research that is relatively old and which do not correspond with contemporary business and dramatically changed circumstances of: social, sociological,

organizational, technological nature. So we get the correct answer to the wrong question, which is not only unacceptable, but also harmful from the point of view of science. The epilogue of the above is that there are disagreements about the determination of emotions, their good and bad sides, the relationship between emotions and emotional inference, and the influence of emotions on the business success of organizational systems.

Emotions are considered as spending mental energy with the tendency to explain how people in some professions emotionally spend themselves in workplaces and what impact that spending has on people, but also on the work they do. It turns out that a large number of people are emotionally “outstripped” to such an extent that they become incapable of performing a particular job. Many people get sick and lose a sense of judging what is good, what is bad, what is useful, and what drives a certain business. The reason for this can be in “emotional combustion at work”, where besides physical, individuals are exposed to both intellectual and emotional stress.

2.1 The relation between emotions and emotional intelligence

Often emotions are equated with emotional intelligence, which is unacceptable. It is known that emotions are a word of French origin, which means to be excited or disturbed, but that this is a far narrower notion of emotional intelligence. Feelings are defined as: “An intense feeling directed at someone or something, which arises as a reaction to a particular person, or to participation in an event” [1]. This is at the same time the definition that best answers the business sphere, that is business.

In fact, the notion of emotional intelligence was introduced by well-known psychologists P. Salavi and Dž. Mayer. Daniel Goleman was a special contributor to the popularization of emotional intelligence. This group of psychologists thinks that emotional intelligence “deals with the question of how people can get better and more fully understood, taking into account the fact that both sides at the moment of interaction possess certain emotions.” Emotional intelligence is the capacity for recognizing our own feelings and those of others, for motivating ourselves and for managing emotions effectively in ourselves and others [2].

Daniel Goleman thinks that the core of emotional intelligence is in: “How do I feel”? “And how do other people feel about me?” So not one thing, or the other, but how the individual is concerned and those who are next to him. Obviously, here the core of emotional intelligence is reduced to feelings and to communicational relationships. This understanding of emotional intelligence produces greater success, which Goleman confirms with the following statement: “People who have higher levels of emotional intelligence can be much more successful in all social interactions, making other people feel good about them too” [3].

In other words, emotional intelligence is a system, and feelings, or emotions, are a subsystem, that is, only one part and the product of mental energy. People and leaders, or leaders of organizations, or teams that have a higher level of emotional intelligence, provided that other elements are the same, show a higher degree of success in social interactions.

What matters to business is not emotion and intelligence as a phenomenon, but whether and what effects they produce. It turns out that intelligence has nothing to do with education and technical knowledge and skills. “True intelligence is a natural gift and comes from both the spirit and the heart. A simple farmer can be 100 times more intelligent than a university professor with half a dozen degrees.” [4].

Emotions can reverse, even destroy business, but can also improve it. This is especially evident in big businessmen and strategic managers, where it is often insisted that big decisions should not be made by “heart”, but by the head, or by reason. This is similar to the messages that today are increasingly coming from psychologists, that marriages should not be made at the moment of culmination of love, because a man who is led by “the heart” rather

than the “brain” sooner or later finds himself in a problem, but when emotions flare up and come in balance with reason.

The second pole of human intelligence is motivational intelligence, or energy that creates motives and searches for instruments that will contribute to satisfying the needs and wishes expressed. In a negotiating, or business process, emotions create a desire that an individual, or organization has, and a motivational pole creates energy, that is, creates a motive or will to achieve that desire in the negotiating process gets fulfilled.

The key to understanding the previous findings is that mental activities can occur when an emotional and motivational pole is involved, such as joining a positive and negative pole in the establishment of an electric circuit in which electricity is generated. If only one pole is involved, there is no electricity, and if both are not included in the man, both poles have no mental activity, that is, there are no inventions or ideas, nor innovations as their products.

From the above, it is clear that in every business, and especially in the negotiation process, the balance between emotional and motivational energy, that is emotional and motivational pole, is established. In practice and generally classical management and organization, emphasis is placed on the motivational pole, where in theoretical sense, specific techniques of motivation, or forcing with hierarchies of needs and their satisfaction are built. It is clear that exclusion, or marginalization of emotions, does not achieve satisfactory effects.

3 IMPACT OF EMOTIONS ON BUSINESS SUCCESS

The influence of emotions and the human factor for business success was first established by neoclassical theoreticians of organization and management, where they used research and achievements of psychology and sociology in this field. This discovery, determinism, clock mechanism, and schematism have lost significance, as it has been proven that a person can not be treated as a machine, or a pendant to a machine, but that he is a social, interest, but also a sentient being. Accordingly, the emotions and the emotional part of the man, together with the conscious and the rational, got on the importance, at the expense of the physical and the manual.

The fact is that the processing of emotions is in a big discrepancy with the significance of this issue on the overall individual, or organizational performance. The reason for the good part lies in the undeniable fact that a man has not yet met enough to meet a man and his emotional side. Regarding the above, Adler concluded: “The true knowledge of man must lead us to some modesty, because modesty teaches us that there is a huge task ahead of us, on which the humankind worked the beginning of its culture. Knowing a man is a work that has always worked, but unconscious and non-systematic, so that we find only certain giants who have surpassed the average in the knowledge of man” [5].

It often seems that there is no need for knowing a man, because we are all people, we know each other, and that we do not need to study ourselves or study ourselves. The problem is precisely what a man, and especially the leaders, are trying to get to know others, but the biggest problem is to get to know himself, confirming the old folk saying that: “Crossing your own threshold is the longest part of the journey”.

The above a serious consequence to man because ignorance is the first condition of misunderstanding, and misunderstanding leads to conflicts, stress, and bad interpersonal relationships as a key factor in organizational success. This is confirmed by well-known psychologist Z. Milivojević with the following statement: “Until a person understands his emotions and feelings, he will not be able to understand himself, nor he will be able to understand another person” [6].

Management, especially from the first hierarchical management line, must understand the feelings of its employees and create an environment in which positive emotions will emerge.

This is because it is necessary for the organization to have a worker with balanced emotions in order to be able to respond to the demands of his/her workplace. Management needs to recognize an emotional conflict, and when it arises to solve it as soon as possible. In the foregoing it is important to bear in mind the thought of Aristotle: “Everyone can get angry, that’s easy. But to get angry at the right person, at the right time, at the right time, for the right reason and in the right way, it’s not easy.”

3.1 Emotions are influenced by a large number of factors

The relationship to emotion in the business world is different. It depends on the type of activity, organizational culture and behavior, technical and technological equipment, etc. It is clear that in the service sector, the significance of emotions and feelings at all will be higher than in the manufacturing industry, because the service sector is dominated by more live work, because many jobs can not be mechanized, and if it can be done, the assessment is that this could not have achieved a greater effect. It turns out that many jobs, processes, or operations are performed face-to-face. Accordingly, feelings and emotions in the service sector have a greater specific weight compared to the primary and secondary sectors.

Both national and organizational cultures have a significant impact on emotions. In some cultures, the emission of positive energy, or positive emotions, is considered to be an integral part of the work, but even life is considered at all. For example, the Japanese are grateful, that is, they have kindness in gratitude when a service is done to them, but also when they provide a service, such as “Thank you for allowing me to help you” or something like that. Given that all Japanese behave the same way, that emotions are an integral part of their life, it does not produce an effect, but if negative emotions are expressed, this is considered a departure from the adopted culture and can produce a negative effect. In other words, emotion here does not produce a new value, but can minimize it, which is not acceptable for not acceptable for any Japanese organization, because kindness, smile, good communication as expressions of positive emotions cost nothing, and it are worth a lot.

The well-known Swiss foresist A. Rice described the characteristics of the Serbian people in terms of emotions, ie the kindness of the highest state authorities and individuals and their influence on significant national outcomes. He stated: “Many of your diplomatic failures are the consequence of unkindness and “I do not care”. The officials, of course, imitate managers and totally deny that they are there for the sake of the people, not the people for them.

Everywhere in the public services, there is an unpleasant spirit by the reputation of senior executives, and even more pronounced when it comes to ministry. It was the post office, the police or the Ministry of Foreign Affairs, where kindness would have to be strictly compulsory. Instead, people only meet officials who think that decent and humorous behavior with people is degrading” [4].

One of the reasons for the Japanese national success, that is, the Serbian national failure over a long period of time, in part on numerous issues, also exists in adequate or inadequate manifestation of emotions.

It is different with the so-called companies in the. service sector, which, in the descriptions of its employees, especially those in direct communication “face to face”, prescribes and imposes an obligation to express positive emotions. It is a profession of medical social workers, employees in kindergartens and kindergartens, staff working at counters and toll booths, flight attendants on intercontinental flights, consultants in consultations on various issues, etc.

The famous catering empire, McDonalds, in its normative acts, prescribed the obligation for a person who issues a receipt: he salutes the customer, then looks him in the eye, and then give a smile. This is a work obligation, and its neglect leads to a serious violation of

working discipline, which is sanctioned, and often gives up cancellations. The big American retailer, Wall Mart, has introduced a rule that every retailer needs to reach the customer at four feet, and he looks in the eyes and he communicates with them. This rule is imposed, because it is known that there are cultures in which people in communications are too close to each other and in that way they reduce the efficiency of the communication itself.

Through emission of positive energy and emotions, here client's confidence is gained and the willingness to transform the potential customer into the real one. This is natural, because it appears that today nobody wants to communicate with people who emit negative energy, who are lascivious and who exhibit negative emotions. Numerous analyzes show in the retail sector that two shops in the same location with the same assortment and the same prices operate differently, exclusively due to the kindness of the staff.

Technological and technological factors can also determine the need for emotions and expressions of feelings. This is related to activities, but it has its own broader context.

Namely, organizations that have a higher organic composition of capital, or where the processes of production or processing are automated, the importance of emotions falls, and it is retained in the administrative technical part where the production is planned, it performs the trade, conducts consulting and other services. For example, the Swedish "Volvo" shows that it has almost automated production from the production of the so-called. steel milk, until the assembly of assemblies and subassemblies for cars and finally assembly. It is similar to other automotive, but also other sectors of the mechanical, agricultural and forestry industries.

Bearing in mind the above, some companies are training their employees how to emit positive energy, how to communicate with employees and potential customers, but also other stakeholders. They believe this has a significant impact on business performance.

Other companies or organizations find it unnecessary for employees to show emotions, as this is contrary to their profession, and in particular do not express positive emotions, kindness, or propensity to compromise. This applies to the professions of a policeman, a soldier, a prison guardsman, a manager in mines, railroads, but also to specific intellectual professions such as lawyers, professors, teachers, etc. Significance for these professions is important unkindness, that is, seriousness, rigor, uncompromising, etc. [8].

Previous, but also similar claims are based on research of psychological nature of two or more decades ago and it is difficult to imagine a profession today that should emit seriousness, rigor, authority, as a form of expressing negative feelings. In Japan, it is considered that someone in a higher hierarchical position should show a higher degree of modesty and kindness, which the Japanese associate and compare with the grain class. The more it matured, the more it goes to the country. "The same situation with other professions".

Today, in a developed world, police officers, as well as soldiers, or other professions must behave professionally with the emission of positive energy, often with kindness, smile, readiness to help and provide advice, etc.

Related to the previous one is also the practice of some companies to conceal emotions, believing that too much focus on emotions calls into question the efficient and effective performance of jobs. This is also the result of the theoretical arguments that emotions do not show or hide, which in time leads to the awareness of people as reasonable and conscious living beings whose essential character is to have and manifest emotions [9].

It is not difficult to conclude how much psychological effort a person feels, but can not express his emotions, in this or that way. It turns out that he will eventually become an object, that is, a man without feeling, and this is his own machine and computer. A man without a feeling is a machine that kills. It can not produce more value, it has a negative effect on the environment and, as a rule, produces damage.

4 ENVY AS A SPECIAL EMOTION IN BUSINESS

A special kind of feeling or feeling is envy. It is a phenomenon in which an individual does not want success to another, or his success is downgraded to the extent that he seeks to present himself as a failure (10,89). Therefore, envy is the discomfort that people feel when others get what they want and as such is an integral part of human feeling and behavior.

When this particular feeling affects the organization as a whole and it becomes a way of thinking and behaving, there is a huge problem that is difficult to solve, but for which solution it is a long time and huge energy, first of all from the first people of the company. So, the dilemma is whether you are looking forward to, or to condemning somebody's success in a modern business, realistically there. Research shows that envy exists in all organizations regardless of size, ownership, or organizational hierarchy. Nevertheless, envy is more pronounced in times of crisis in organizations where there are losses, poor interpersonal relationships and organizational behavior in which the success of a colleague is questioned, or when individuals are more obsessed with others, that is, rival than their own success. It is a problem for those who express envy, as well as those who show envy, and especially those who suppress and not express their envy is public.

The problem of envy is more pronounced in industries and organizations dominated by living labour. The reasons for envy can be different from: beauty and charm, expertise, better communication, greater recognition by superior, better position and greater influence in the organization, etc. The outcome, or epilogue of envy, is the removal of people and the cessation of communication, disrespect, etc. It is interesting that envy is especially evident when close friends achieve success in their private work, or life, than when they succeed in the unknown people. This statement was made by well-known psychologist Abraham Tizer.

People tend to value ideas that come from collapse, rather than ideas coming from their rivals, or from internal, or company sources. "In one study, it was asked questions from managers from various industries to develop a strategy of change in restaurant design. One group was told that the design proposal came from the side, and the other that the proposal came from people from their company. The group to whom the idea was announced, that is, the innovation came from the fields were more valued by the idea and were twice as ready to use it, while the group that believed that ideas came from the inside of the vortex much less valued these ideas." [11].

4.1 What is the cause of these differences and how to eliminate envy?

The researchers found possible answers in the concern of employees for their position in the organization. When the idea is external, it is a minor threat to the individual's position.

When an idea or innovation comes from an internal source, an individual, or group that has given the idea a leading power, becomes a leader that can endanger individual positions in the organization.

This kind of state and situation poses a great danger to the organization, and the result is envy that leads to irrational solutions, because the external ideas are more valued, from unknown persons, which, moreover, cost more, and in the course of realization, there are more difficulties because the external authors do not know enough of organizational culture, which is why there is a risk whether the idea will come to life in practice.

The state of envy as a dangerous phenomenon in the organization can be eliminated and thus make the work more productive, and even more humane, since envy exacerbates interpersonal relationships, i.e., creates an unfavorable organizational climate for business development. Theorists have made the following proposals to solve the envy: [11].

- Define what an individual is envious,
- Affirmation of one's own good sides and elimination of bad,

- Creating a culture that will appreciate success,
- Training.

Sources or reasons of envy can be different. An individual needs to determine what values he values and tries to recognize the circumstances and qualities in others that irritate, or trigger feelings of envy. At the same time, it needs to be evaluated, or determined which characteristics of the individual make it uncertain. For example, if you are seducing people who learn faster and gain new skills, then it's possible to work on envying a curse. Certainly, in order to reduce independence, it is possible to work on acquiring the missing skills, that is, those that irritate you and cause you to become envious.

Affirming yourself and achieving better results can reduce the envy of an individual. In this way, the degree of vulnerability, which is objectively existed by the rival or opponent, reduces envy. Instead of focusing the individual on the other, he dedicates himself and his achievements. "He has achieved great success in science, but I am more successful in the family sense, which is much more important than any other achievement." This reduces the negative energy that produces envy.

No organization in today's competitive world can have superior performance unless every employee is committed to the goals of the organization and unless he/she does not work as a effective member of the team. It is no longer sufficient to have employees who come faithfully every day to work and do their work independently. Employees should now think like entrepreneurs, working in teams and proving their value [12]. Each organization is specific and unique primarily in the diversity of people, their habits, needs and desires. Each organization has its own culture, that is, the organizational climate and behavior that produces, or marginalizes, envy. It is known that Buddhist belief creates a climate where there is a sharing of knowledge and a radiance of every single success, since the sum of individual successes is more and more the performance of the organization as a whole.

However, there are cultures that produce envy and that becomes the rule, with a great negative impact on the psyche of a man. It should be borne in mind that envy produces a negative impact on the one to whom it is directed, but it also produces a negative effect on the one who has a sense of envy. The company's management here can play a significant influence and try to eliminate envy primarily in the management team. A personal example, here, as well as in other areas, gives the best results. In this context, the fairness, respect, and trust of each individual, and the principle reward and sanction is the best way to create a favorable organizational climate to eliminate envy. Enlighteners should be the subject of special attention by direct managers. Management should be silenced with strong words, and especially strong emphasis on virtues and contributions by individuals, especially those who do not deserve such praise or neglect the merits of others. The main characteristic of modern social and economic life in its every aspect is changes [13]. Since the social environment is subject to constant changes, this means that the underlying assumptions that were valid yesterday may even become invalid and can easily go in the wrong direction [14]. However, equally important is the willingness and ability of employees to be actively and adequately involved in the process of change, as one of the important factors affecting the efficiency, profitability, reputation and survival of the organization [13].

From the above we can conclude that envy is an integral part of every human being and that the question is how much this negative trait is present in every individual. However, this negative trait can be mastered, that is, it can be controlled, but also turned envy into a positive thing, where competitions and divisions would turn into collaboration and integration, where everyone is looking forward to another's success.

5 CONCLUSION

The source of emotions is emotional intelligence, and emotional intelligence is the result of mental energy that exists in the human brain. In business terms, emotional intelligence is essential in that it creates desires, or needs for people and organizations. They are the key driving impulse for all other activities, i.e., if there is no need and desire, there are no other business activities. In other words, if we want success, it must first come about in the emotional part of the human brain, i.e., that this desire is expressed and fixed on the right side of the human brain that creates ideas, the idea of how ideas can be implemented and finally the idea of implementing the idea. Voice, emotions drive a person to do something, or make a mistake, or change something. Without them, mankind would simply not progress, that is, they would not change and live with change, as a natural law of survival. Training to eliminate envy, as well as other marriages (malice, slander, etc.) is an effective way to reduce envy in an organization. Experts in the field of psychology can give useful advice to reduce envy by pointing out that individuals do not need to focus on the other, but on themselves. A comparison with others should be avoided, but should be compared with oneself, or present in relation to a previous state, and determine how much the individual has progressed, and to what extent has he achieved the defined goals. If a significant result is made, it increases self-confidence, and thus the pressure on feelings of dependence on others.

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THE NECESSITY OF INTRODUCING REFORMS OF PENSION DISABILITY INSURANCE – ANALYSIS OF THE USER’S ATTITUDE

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ABSTRACT

Life is a natural course, full of the uncertainty and temptation of every human being. In order to make our lives peaceful and have a peaceful future, we try to provide various ways to ensure that we make our lives safer.

The pension insurance system is very important for every country from a social, economic and financial point of view. Pensions are primarily a social category because they represent the income of people who are unable to earn a living due to age or illness and as such reflect the social function of the state.

In most of the transition countries, reforming processes in the field of pension insurance have been initiated or are under way in order to establish a sustainable functioning model. In Serbia, in the period from 2001 to 2016, attempts were made to reform the pension insurance system in order to solve the inherited unfavorable situation, but still without significant effects.

An integral part of the paper is the results of the research conducted with the aim of obtaining the attitude of Belgrade residents about the existing mandatory pension insurance and trust in the same, as well as the view on the need to take additional measures and activities in order to realize a comprehensive reform in the field of pension insurance. Starting from the established goal of the research, it can be concluded that the hypothesis was established that the inhabitants of Belgrade are not satisfied with the existing situation in the pension insurance system, that they consider the pension fund to be vacant and that as such it does not guarantee safe pensions. This indicates that additional measures and activities of the competent state authorities and institutions should be undertaken in the forthcoming period in order to fully implement the projected reform goals in the field of pension insurance.

Keywords: pension insurance system, social insurance, private pension insurance, reforms, research results, attitude of the inhabitants of Belgrade

JEL: G22, G23

1 INTRODUCTION

The pension system is very important for every country from a social, economic and financial point of view. Pensions are above all a social category because they represent the income of people who are unable, due to sickness or age, to earn a living and who need state care, and as such, pensions are part of the social security system, which is the most significant form of social insurance. Modern social insurance was created in Germany in the 80s of the 19th century [8] when compulsory insurance of workers with major social risk factors was introduced, such as age, disability, illness and unemployment. In the period of liberal capitalism, workers with low wages, and there were many during that period, were unable to

provide their own essential security. In order to reduce these risks, the state, through the system of contributions, provided the social security of workers. In this system, each of the insured (workers) regularly contributed to those users who were affected with one of the mentioned social risks [1].

Pensions are also an economic category because long-term payments, when the population is actively earning, create large assets in the name of saving for old age. Finally, pensions are also a financial category. On the one hand, because pensions are part of public spending, and as such, are part of the public finances of a country. On the other hand, lately, with the reform of the pension system, private pension funds representing old age savings are one of the most important institutional investors in financial markets around the world and have a major impact on the financial systems of countries.

The pension systems of most countries in the world are based on a system of ongoing financing. This system is characterized by the fact that those who work, through contributions, finance the pensions of those people who have completed their working lives.

Today this type of intergenerational solidarity is not sustainable in the long run. The main reasons for this tendency are of a demographic and financial nature. For the sustainability of such a pension system, demographic factors are not favorable due to the aging of the population and the increasing share of those over 65 in the total population, on one hand, and low fertility rates, or the number of newborns, on the other. As a result, employees are unable to fund pensions without an increase of their contributions.

Making investment policies has become more diversified due to the way societies and governments respond to the effects of globalization [13]. The process of globalization, that is, the process of integration of the world economy, has a great impact on the reforms of the pension system, which also requires a reduction in investments in pension insurance. This paper aims to draw attention to the current situation as well as to propose potential solutions that would make the pension system stable and sustainable over the long run, as well as to stress the importance of life insurance in securing material security in old age. The paper will address the provision of material security in the old age through analysis of pension systems both in the world and in our country, with the reforms undertaken, and a special emphasis will be placed on pension system reforms in transition countries, the emergence of pension funds and their role in the financial market, as well as development of private pension insurance in Serbia.

2 REFORMS OF THE PENSION SYSTEM AND FINANCIAL SECURITY IN OLD AGE

The reform of pension insurance is a big undertaking that affects the existential issues of the citizens of each country and therefore has a great social and political significance. Those who are working on the reform of the pension system in a country with a weak economy have a particularly difficult task, as it is also burdened by the consequences of war, economic sanctions and bombing. Reliance largely on the suggestions of the IMF and the World Bank by international organizations that have similar recipes for all non-developed countries can hardly have a good outcome [2].

Developed European countries have no such problem, as their citizens, along with compulsory retirement, have some kind of voluntary insurance that guarantees them material security in their old age. In these countries, employers have a legal obligation to provide pensions to workers. Employers can pay into pension funds or direct life insurance that is paid as an annuity after retirement. In addition, all citizens can pay voluntary pension insurance, most often with life annuity insurance but rarely with pension funds. In order to maintain the

desired level of income in the country's old age population, they undertake various measures, and regulations are adopted which, primarily through the tax policy, stimulate life insurance.

The compulsory pension insurance business in some countries is being entrusted to national insurance companies because citizens have confidence in them, and they are also of great importance in supporting the development of the country's economy.

A successful reform involves the drafting of a set of legal, subordinate and administrative acts in order for pension insurance to be a complete system that will provide social justice. In the Law on Insurance applicable in Serbia, voluntary insurance has been given little space.

Nevertheless, the least understandable segment of the pension insurance reform is that it is not envisaged to introduce compulsory pension insurance for employees that are concluded by employers. Funds from which the pensions of employees are paid operate on the basis of capitalization, and that is why they have an advantage over public funds. The introduction of voluntary insurance (3rd pillar) only through a pension fund in countries with low average wages and without tradition in that business is also debatable. It is necessary that regulations that would stimulate various types of voluntary pension insurance by a number of measures are a constituent part of the reform. A reform based on drastic reductions in compulsory insurance and voluntary insurance coverage does not have good prospects if a successful reform is one which in the long term protects both the individual interests of citizens and the broader national interests [3].

Republic of Serbia is not a welfare state, but a state of "limited" resources [9]. In Serbia, an important way of organizing insurance, which is otherwise widely used in developed countries, is also neglected. It is well-known that non-profit mutual insurance companies largely provide insurance that has a social function (pension, health, insurance and old age care). These are companies that fail to charge the costs of their business (such as pension fund management companies) and through which the solidarity of those who want to protect themselves from poverty in old age is achieved in the best way. It would therefore be desirable to examine the experience of other countries in relation to the business of mutual insurance companies in order to achieve better solutions for categories of citizens such as, for example, farmers or members of independent professions. Obviously, the law favors the establishment of profit joint stock companies as a more desirable way of organizing an insurance company. By contrast, in developed countries, the conditions for the establishment of mutual insurance companies, without which good social policy cannot be imagined, are more favorable than joint stock companies. The issue of the safety of the performance of pension fund obligations in the future is also open. This is a major obstacle to the development of voluntary pension insurance, because although it is unlikely that the obligations of the fund or the insurer will be executed, this danger cannot be excluded. In the EU, current projects are aimed at establishing transnational rules for guaranteeing obligations under long-term insurance contracts. In some countries, schemes of guarantee already exist in the form of funds in which all insurers are paid in advance, which foresees the establishment of funds that are formed only in the event of a bankruptcy of the fund or insurance company.

The NBS argues that the operations of these funds are safe considering that assets can only be invested in the safest and most liquid securities. If so, the question is why there is no guarantee that the fund's obligations will be executed regardless of the possible crash of their business [7].

Undoubtedly, a sustainable pension system must be the result of comprehensive economic, sociological, demographic and other research. The rationale for the reform is to be implemented because there is an unfavorable relationship between the working and the dependent population and the aging of the population does not take into account the complexity of all the causes that led to problems in the functioning of Serbian pension insurance. The problem of a large number of 'dependent' population segments should not be

solved by a brutal reform of the pension system, but by a more just distribution of social wealth, and by directing all potentials to economic growth and increasing employment. As for the aging of the population, a comparative study should be made to determine the situation in Serbia in relation to other countries.

The data on increased mortality of both pensioners and people who die in their best years of serious illnesses considers how many Serbian citizens will receive pensions, and how long they can use them [9].

3 REFORMS OF THE SERBIAN PENSION SYSTEM

The purpose of the implementation of the Serbian pension reform is to establish a long-term sustainable system that provides greater social and financial security and a higher overall level of pensions.

The basic motive of the reform is to make the pension system resistant to demographic and economic shocks, as well as efficient, effective, and flexible in relation to the needs and preferences of individuals and less dependent on the state [19].

Compulsory pension and disability insurance in Serbia is based on current financing of pensions and includes the insurance of three basic types of risks: age, disability and death of the insured.

A compulsory component that provides the minimum age-appropriate income (absolute standard of living) is based on a minimum retirement sum, and the component that ensures the maintenance of income in age is based on the score system. Since the end of 2006, a part of the system has also been voluntary pension savings in private pension funds [5].

This design of the pension system is the result of a comprehensive reform of the pension system in the 2001-2003 period. At the end of 2005, certain changes were made. The pension system component that provides an absolute living standard in Serbia is realized through a minimum pension. When she fulfills the conditions for retirement, those insured whose pension is below the legal level are entitled to a minimum pension. The retirement conditions are the appropriate age limit and minimum length of service.

The minimum pension currently in Serbia is just over 13,221 dinars, i.e., about 20% of the average gross salary. Within the legal changes in the period from 2001 to 2003, a uniform minimum pension amount of 20% of the average salary was guaranteed, instead of the then multiple minimum pensions which depended on the length of service. By the end of 2005, the minimum pension was increased formally to 25% of the salary, but as a result of indexing twice a year, it ranged between 20% and 22%. The minimum retirement amount is within the limits of the minimum or social retirement pensions of the countries in the region, and somewhat lower than the compensation of that type in highly developed countries [10].

Due to an inclusion of the total working life, instead of the 10 most highly-paid years, a stronger link between the sum of the pension and the paid contributions is made, eliminating the spillover for those who made progress in their career or had a significantly higher salary in only one part of their work history. This method increases and more precisely determines the difference in the pension sum, depending on the length of service. The new 2003 law also stipulates that the retirement age is increased for over 40 years of service, which was not the case before, but with the idea of encouraging work as long as possible.

According to current legal solutions (from 2005), the retirement age increased gradually and in 2011 it reached 60 years for women and 65 for men, with a minimum of 15 years of service. This age limit was determined by multiple legal changes after 2000.

One of the major reform movements in 2001 was the increase in the age limit from 55 to 58 for women and from 60 to 63 for men (at the same time the minimum age limit was shifted from 50 to 53 years).

The legal framework for pension reforms in Serbia

The mentioned pension system reform in Serbia was carried out in September 2005 by bringing the following laws:

- the Law on Amendments to the Law on Pension and Disability Insurance;
- the Law on Voluntary Pension Funds and Pension Plans;
- the Law on Payment of Contributions for pension and disability insurance for certain categories;
- the Law on the Public Debt of the Republic of Serbia on the takeover of obligations of the Republic Fund for pension and disability insurance of employees based on unpaid pensions;
- the Law on the Public Debt of the Republic of Serbia on the basis of assuming obligations of the Republic Fund for Pension and disability insurance of farmers arising from unpaid pensions and cash benefits [14].

The necessity of reforming the Serbian pension system

The pension system reform is one of the most striking and, at the same time, the most sensitive issues of the overall reform processes of recent decades both in developed and transition countries. The long-term pressure of population aging and the prolongation of life expectancy, the need to reduce, or additionally, prevent poverty among the elderly, the need to reduce fiscal pressures and lower the cost of the labor force, and the inadequacy of certain pension schemes and solutions are strong drivers of the reforms.

In Serbia, there are three categories of pensioners: old-age pensioners, those who were employed and paid a contribution to the pension insurance fund and need to exceed a certain age limit in order to be eligible for retirement; disability pensioners, who receive a pension regardless of their age, based on their state of health; and family pensioners, most often children whose parents have died, who are in full-time education, as well as widows or widowers, if supported by their spouses. Previously, there were three pension insurance funds: the employee fund, self-employed fund, and farmer fund, all of which were consolidated into a single fund at the beginning of 2008.

Due to the unfavorable ratio of actively insured persons and pension beneficiaries, the state is compensating for pension benefits from the budget. Pension costs in our country account for 14% of the gross domestic product and are among the highest in the region. In order to pay out all pensions, the state of Serbia must allocate from the budget as much as 40% of the funds needed for the payment of pension benefits (in 2005 it was about 800 million Euros, or 65 billion dinars).

In transition countries, reforms were most often conceived with the support of the World Bank under the so-called three pillars. Typical reforms in the three-pillar model include parametric changes to the 1st pillar (the current, state PAYG system), the introduction of the 2nd pillar through mandatory additional savings of younger insurers in private pension funds and the development of voluntary pension insurance as the 3rd pillar of the pension system.

Transfer of the 1st pillar

The 1st pillar is compulsory, it is financed by the principle of current income and expense (pay-as-you-go), the pension is pre-defined, and the revenues are provided by the state's taxation (contributions). This pillar is managed by the state, so management is centralized.

Also, the 1st pillar provides a redistributive function – intergenerational solidarity.

Table 1. Review of the age limits for a pension

| The year when condition for an old age pension is met | Men | Women | Minimum length of service |
|---|------|-------|---------------------------|
| 2006, 2007 | 63 | 58 | 20 |
| 2008 | 63,5 | 58,5 | 19 |
| 2009 | 64 | 59 | 18 |
| 2010 | 64,5 | 59 | 17 |
| 2011 | 65 | 60 | 15 |
| 2017 | 65 | 61,6 | 15 |

Source: www.parlament.gov.rs

Transfer of the 2nd pillar

The 2nd pillar represents mandatory savings managed by private pension funds. Managing this pillar of the pension system is usually decentralized to private computing. The 2nd pillar pension depends on the contributions paid and the ability of the selected fund to increase them further, while the risk is borne by the user.

The 2nd pillar or compulsory private pension insurance exists in Croatia, Bulgaria, Macedonia, Poland, Slovakia and other countries. In the Czech Republic, Slovenia, and Ukraine, the 2nd pillar has not been formed, so that the structure of the pension system is the 1st and 3rd pillars.

In the current reform of Serbia, it has been decided that the pension system relies on two components: the current financing of pensions (PAYG) organized within the state fund (1st pillar), to the development of voluntary old-age savings in private pension funds (3rd pillar).

During the first wave of reforms, the idea that besides these two components in the pension system there were also mandatory savings in private pension funds, the so-called 2nd pillar, was discarded. Thus it can be concluded that even today the introduction of the 2nd pillar in Serbia is not recommended.

Basic features of the 3rd pillar

The 3rd pillar represents voluntary savings managed by private pension funds, as well as a supplement to pensions from the 1st and 2nd pillars. In this model, the financial risk is borne by the user.

It should be noted that the 2004 Insurance Law envisaged voluntary pension insurance.

The Law on Voluntary Pension Funds and Pension Plans, which is part of the aforementioned package of laws of September 2005, began to develop voluntary private pension insurance in Serbia [15].

Simultaneously with the reform of the state pension system, the adoption of the Law on Voluntary Pension Funds and Plans regulates private pension insurance, the so-called 3rd pillar model of the pension system. The essence of the proposed solutions is to create the conditions for the citizens to increase the pension income with pensions from the state pension fund by establishing satisfactory pension funds and pension plans.

Although it is estimated that the introduction of voluntary pension insurance is a very positive thing that will contribute to improving the functioning of the system as a whole, there are, however, certain objections. The National Bank of Serbia supervises the work of the management company for private pension funds (Zakon o dobrovoljnim penzijskim fondovima i penzijskim planovima).

The introduction of the 3rd pillar is not adequately followed in terms of marketing as well as training. This is important due to raising the awareness of the insured about the importance

of saving in this way, and preparing pension funds for possible 2nd pillar introduction when they will have a much larger role (experience, management, marketing) and capital market development. The experiences of other countries have clearly shown that training and marketing are very important factors that will determine the effectiveness of introducing a voluntary pension insurance [5].

In Serbia, despite the establishment of voluntary pension funds, citizens are more likely to opt for life insurance as a way of saving for old age. Despite the necessity and priority of investing in pension funds, there have been no major developments yet since the establishment of the first funds. Voluntary pension insurance is considered savings through pension funds, because in the field of supplementary pensions, only the law on voluntary pension funds has been adopted [12].

According to the data from the Statistical Office of the Pension and Disability Insurance Fund, in June 2017 there were 1,736,154 pensioners in Serbia, which are 5,917 less than the record number of 1,742,071 in February 2015. Reducing the number of pensioners is an expansive endeavor: demise was accelerated and the working-class inflow slowed down, so the number of pensioners decreased rapidly: by 809 in March, 886 in April, 1,719 in May, and in June the decrease was reduced to only 741 people (i.e. pension checks) compared to May.

The largest number of pensioners in Serbia is from the ranks of employees – 1,451,314, far fewer farmers – 212,273, while from the category of independent activities, as few as 72,567.

Private pension funds are one of the largest institutional investors in the world, but in Serbia, where they first arrived in November 2006, they were hardly known. According to the latest data from the National Bank of Serbia, the total value of all pension funds in the last five years has steadily increased, reaching only 12.45 billion dinars, or 120 million Euros in December 2011. When compared with almost 800 billion dinars deposited in banks by citizens, or 7.6 billion Euros, it is clear how much this type of investment is unpopular in our country.

The previous changes in the pension system of the Republic of Serbia have yielded significant results. Some World Bank research shows that deficits in the pension system would be 3 to 4 times higher without previously making changes, which is a very large shift in relation to the initial state (Marsenić, 2010).

4 ASSESSING THE OPINIONS OF CITIZENS

For the purposes of this paper, a survey was conducted to assess the opinion of Belgrade residents towards the existing mandatory pension insurance and assess the attitude of the need for the implementation of additional systems.

The general hypothesis is: citizens are not satisfied with the current situation in the pension insurance system, they believe that the pension fund is empty and does not guarantee safe pensions. This means that the reforms implemented so far have not been sufficient and that reforms need to be continued.

The research was done on the territory of the city of Belgrade on a sample of 120 respondents. The statistical method dominated from the general scientific methods in this study, and the descriptive – **survey-research** – method was applied from specific research methods, since this variant of scientific description implies an active involvement of respondents in providing information on the phenomena that are the subject of the study, on the basis of which can enter the essence of a research subject and determine its condition, as well as detect causal relationships and relationships. The Statistical Package for Social Sciences was used for statistical data processing. The non-parametric statistical procedure Chi square test and contingency coefficient C were used for data processing.

Nonparametric statistical procedures examine the significance of statistical indicators that apply regardless of whether the data is measured or counted and whether they are distributed regularly or differently. In other words, this means that they do not depend on the shape of the frequency distribution. The Chi-square test is a nonparametric statistical procedure, which means that qualitative (categorical) data is used in its calculation. It should be especially emphasized that other measurement units, other than frequency, are not considered for data processing using the Chi-square test.

Table 2. The compulsory pension insurance is excellent

| Social-andragogical character. of respondents | | Mandatory pension insurance is excellent | | | | | | x ² i C | p | |
|---|-------------------------------|--|-------|-------|-------|-------|-------------|-----------------------------------|-----------------------------------|-------------------|
| | | 1 | 2 | 3 | 4 | 5 | IN TOTAL | | | |
| Pol | 1. Males | 7 | 12 | 10 | 5 | 11 | 45 | 120 100% | x ² =5,625 C=0,212 | p=0,229 p>0,05 |
| | | 5,8% | 10,0% | 8,3% | 4,2% | 9,2% | 37,5% | | | |
| 2. Females | | 15 | 14 | 14 | 20 | 12 | 75 | | | |
| | | 12,5% | 11,7% | 11,7% | 16,7% | 10,0% | 62,5% | | | |
| Year of life | 1. Up to 35 years | 4 | 4 | 9 | 12 | 8 | 37 | 120 100% | x ² =17,483 C=0,357 | p=0,025 p<0,05 |
| | | 3,3% | 3,3% | 7,5% | 10,0% | 6,7% | 30,8% | | | |
| | 2. 36-50 years | 12 | 15 | 4 | 10 | 8 | 49 | | | |
| | 10,0% | 12,5% | 3,3% | 8,3% | 6,7% | 40,8% | | | | |
| 3. Over 50 years | 6 | 7 | 11 | 3 | 7 | 34 | | | | |
| | 5,0% | 5,8% | 9,2% | 2,5% | 5,8% | 28,3% | | | | |
| Professional qualifications | 1. Finished elementary school | 0 | 0 | 0 | 0 | 0 | 0 | 120 100% | x ² =8,314 C=0,255 | p=0,760 p>0,05 |
| | | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | | | |
| | 2. Secondary education | 5 | 10 | 5 | 7 | 9 | 36 | | | |
| | | 4,2% | 8,3% | 4,2% | 5,8% | 7,5% | 30,0% | | | |
| | 3. Higher education | 1 | 1 | 1 | 0 | 1 | 4 | | | |
| | | 0,8% | 0,8% | 0,8% | 0,0% | 0,8% | 3,3% | | | |
| 4. High professional | 9 | 7 | 9 | 5 | 7 | 37 | 120 100% | x ² =13,115 C=0,314 | p=0,361 p>0,05 | |
| | 7,5% | 5,8% | 7,5% | 4,2% | 5,8% | 30,8% | | | | |
| 5. Master / Doctor of Science | 7 | 8 | 9 | 13 | 6 | 43 | | | | |
| | 5,8% | 6,7% | 7,5% | 10,8% | 5,0% | 35,8% | | | | |
| Years of service | 1. Up to 10 years | 8 | 8 | 8 | 11 | 7 | 42 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 |
| | | 6,7% | 6,7% | 6,7% | 9,2% | 5,8% | 35,0% | | | |
| | 2. From 11 to 20 years | 7 | 8 | 4 | 10 | 8 | 37 | | | |
| | | 5,8% | 6,7% | 3,3% | 8,3% | 6,7% | 30,8% | | | |
| 3. From 21 to 30 years | 4 | 8 | 5 | 3 | 3 | 23 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 | |
| | 3,3% | 6,7% | 4,2% | 2,5% | 2,5% | 19,2% | | | | |
| 4. Over 30 years | 3 | 2 | 7 | 1 | 5 | 18 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 | |
| | 2,5% | 1,7% | 5,8% | 0,8% | 4,2% | 15,0% | | | | |
| Workplace | 1. Worker | 17 | 18 | 13 | 18 | 17 | 83 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 |
| | | 14,2% | 15,0% | 10,8% | 15,0% | 14,2% | 69,2% | | | |
| | 2. Operations Manager | 2 | 3 | 5 | 4 | 5 | 19 | | | |
| | | 1,7% | 2,5% | 4,2% | 3,3% | 4,2% | 15,8% | | | |
| 3. Mid-level manager | 2 | 4 | 3 | 1 | 1 | 11 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 | |
| | 1,7% | 3,3% | 2,5% | 0,8% | 0,8% | 9,2% | | | | |
| 4. Top Management | 1 | 1 | 3 | 2 | 0 | 7 | 120 100% | x ² =9,223 C=0,267 | p=0,684 p>0,05 | |
| | 0,8% | 0,8% | 2,5% | 1,7% | 0,0% | 5,8% | | | | |

Source: author

According to the data in Table 1, it is evident that all independent variables are not significantly related to respondent attitudes about whether the compulsory pension insurance is excellent. Namely, the value of the Chi-square test and the contingency coefficient C show that gender ($\chi^2=5.625$, $C=0.212$ and $p=0.229$), profession ($\chi^2=8.314$, $C=0.255$ and $p=0.760$), work experience ($\chi^2=13.115$, $C=0.314$ and $p=0.361$), and the position of the respondents in the company ($\chi^2=9.223$, $C=0.267$ and $p=0.684$) are not statistically significantly related to the stated attitude of the respondents (opinion: the mandatory pension insurance is excellent).

This means that we do not have significant deviations in respect of the said position.

On the other hand, however, age ($\chi^2=17.483$, $C=0.357$ and $p=0.025$) is statistically significant with the view that mandatory pension insurance is excellent. In other words, this means that the respondents' answers were statistically significantly different with regard to age.

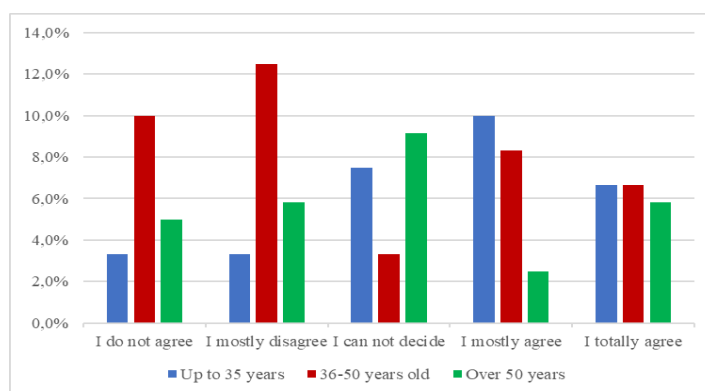


Diagram 1. Agreement with the claim that compulsory pension insurance is excellent
Source: author

According to the results in Diagram 1, the young generation places significantly more emphasis on compulsory pension insurance. The younger generation has much more trust in the pension fund than the middle-aged and elderly generation over 50, which indicates that this is a necessity of the modern era. Naturally, this would fully revitalize all the activities on this issue, which must be supported by the state. It is certain that this question cannot be solved by respondents and working organizations, and in the resolution of this issue, the maximum suspension of all state apparatus is expected. This attitude of the young generation is perhaps expected. That is exactly the life period when you need to think about solving the problem of pension insurance. It is interesting that the middle-aged generation disagrees with the view that compulsory pension insurance is excellent. In the elderly generation, one might say that the opinions are identical.

Table 3. I expect a good pension which I can support myself with

| Social-andragogical character. of respondents | | I expect a good pension from which I can live well | | | | | | IN TOTAL | x ² i C | p | | | |
|---|-------------------------------|--|-------|------|------|-------|-------|----------|-----------------------------------|-------------------|------|--|--|
| | | 1 | 2 | 3 | 4 | 5 | | | | | | | |
| Pol | 1. Males | 15 | 7 | 8 | 4 | 11 | 45 | 120 | x ² =1,164 C=0,098 | p=0,884 p>0,05 | | | |
| | | 12,5% | 5,8% | 6,7% | 3,3% | 9,2% | 37,5% | | | | | | |
| | 2. Females | 29 | 14 | 9 | 7 | 16 | 75 | 100% | | | | | |
| | | 24,2% | 11,7% | 7,5% | 5,8% | 13,3% | 62,5% | | | | | | |
| Year of life | 1. Up to 35 years | 10 | 5 | 4 | 5 | 13 | 37 | 120 | x ² =11,561 C=0,296 | p=0,172 p>0,05 | | | |
| | | 8,3% | 4,2% | 3,3% | 4,2% | 10,8% | 30,8% | | | | | | |
| | 2. 36-50 years | 22 | 8 | 5 | 4 | 10 | 49 | | | | 100% | | |
| | | 18,3% | 6,7% | 4,2% | 3,3% | 8,3% | 40,8% | | | | | | |
| | 3. Over 50 years | 12 | 8 | 8 | 2 | 4 | 34 | | | | | | |
| | | 10,0% | 6,7% | 6,7% | 1,7% | 3,3% | 28,3% | | | | | | |
| Professional qualifications | 1. Finished elementary school | 0 | 0 | 0 | 0 | 0 | 0 | 120 | x ² =14,838 C=0,332 | p=0,250 p>0,05 | | | |
| | | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | | | | | | |
| | 2. Secondary education | 9 | 8 | 3 | 2 | 14 | 36 | | | | 100% | | |
| | | 7,5% | 6,7% | 2,5% | 1,7% | 11,7% | 30,0% | | | | | | |
| | 3. Higher education | 1 | 1 | 1 | 0 | 1 | 4 | | | | | | |
| | 0,8% | 0,8% | 0,8% | 0,0% | 0,8% | 3,3% | | | | | | | |
| | 4. High professional | 19 | 5 | 5 | 3 | 5 | 37 | | | | | | |
| | | 15,8% | 4,2% | 4,2% | 2,5% | 4,2% | 30,8% | | | | | | |
| | 5. Master / Doctor of Science | 15 | 7 | 8 | 6 | 7 | 43 | | | | | | |
| | | 12,5% | 5,8% | 6,7% | 5,0% | 5,8% | 35,8% | | | | | | |
| Years of service | 1. Up to 10 years | 17 | 6 | 4 | 3 | 12 | 42 | 120 | x ² =20,345 C=0,381 | p=0,061 p>0,05 | | | |
| | | 14,2% | 5,0% | 3,3% | 2,5% | 10,0% | 35,0% | | | | | | |
| | 2. From 11 to 20 years | 13 | 5 | 6 | 5 | 8 | 37 | | | | 100% | | |
| | | 10,8% | 4,2% | 5,0% | 4,2% | 6,7% | 30,8% | | | | | | |
| | 3. From 21 to 30 years | 11 | 7 | 0 | 1 | 4 | 23 | | | | | | |
| | | 9,2% | 5,8% | 0,0% | 0,8% | 3,3% | 19,2% | | | | | | |
| | 4. Over 30 years | 3 | 3 | 7 | 2 | 3 | 18 | | | | | | |
| | | 2,5% | 2,5% | 5,8% | 1,7% | 2,5% | 15,0% | | | | | | |
| Workplace | 1. Worker | 30 | 12 | 9 | 7 | 25 | 83 | 120 | x ² =16,197 C=0,245 | p=0,182 p>0,05 | | | |
| | | 25,0% | 10,0% | 7,5% | 5,8% | 20,8% | 69,2% | | | | | | |
| | 2. Operations Manager | 6 | 5 | 5 | 2 | 1 | 19 | | | | 100% | | |
| | | 5,0% | 4,2% | 4,2% | 1,7% | 0,8% | 15,8% | | | | | | |
| | 3. Mid-level manager | 5 | 3 | 2 | 0 | 1 | 11 | | | | | | |
| | 4,2% | 2,5% | 1,7% | 0,0% | 0,8% | 9,2% | | | | | | | |
| | 4. Top Management | 3 | 1 | 1 | 2 | 0 | 7 | | | | | | |
| | | 2,5% | 0,8% | 0,8% | 1,7% | 0,0% | 5,8% | | | | | | |

Source: author

According to the data in Table 2, we see that all independent variables are not significantly related to the views of the respondents about the pension they expect. Namely, the value of the Chi-square test and the contingency coefficient C show that gender ($x^2=1.164$, $C=0.098$ and $p= 0.884$), age ($x^2=11.561$, $C=0.296$ and $p=0.172$), profession ($x^2=14.838$, $C=0.332$ and $p=0.250$), work experience ($x^2=20.345$, $C=0.382$ and $p=0.061$) and the position of the respondents in the company ($x^2=16.197$, $C=0.245$ and $p=0.182$) were not significantly related to the stated attitude of the respondent (opinion: mandatory pension insurance is excellent).

This means that we have no significant deviations in respect of the said position. Based on the data from the table, we can conclude that regardless of gender, age, professional qualifications, working experience and position in the company, most respondents disagree with the view that they expect a good pension from which they will be able to live well.

Table 4. A pension fund guarantees secure pensions

| Social-andragogical character. of respondents | | Pension fund guarantees safe pensions | | | | | | | x^2 i C | p | | | |
|---|-------------------------------|---------------------------------------|-------|-------|-------|-------|----------|-------------|-------------------------|-------------------|--|--|--|
| | | 1 | 2 | 3 | 4 | 5 | IN TOTAL | | | | | | |
| Pol | 1. Males | 4 | 13 | 13 | 5 | 10 | 45 | 120 100% | $x^2=9,681$ C=0,273 | p=0,046 p<0,05 | | | |
| | 3,3% | 10,8% | 10,8% | 4,2% | 8,3% | 37,5% | | | | | | | |
| | 2. Females | 20 | 18 | 16 | 14 | 7 | 75 | | | | | | |
| | | 16,7% | 15,0% | 13,3% | 11,7% | 5,8% | 62,5% | | | | | | |
| Year of life | 1. Up to 35 years | 6 | 8 | 11 | 7 | 5 | 37 | 120 100% | $x^2=6,890$ C=0,233 | p=0,549 p>0,05 | | | |
| | 5,0% | 6,7% | 9,2% | 5,8% | 4,2% | 30,8% | | | | | | | |
| | 2. 36-50 years | 8 | 13 | 10 | 8 | 10 | 49 | | | | | | |
| | | 6,7% | 10,8% | 8,3% | 6,7% | 8,3% | 40,8% | | | | | | |
| | 3. Over 50 years | 10 | 10 | 8 | 4 | 2 | 34 | | | | | | |
| | | 8,3% | 8,3% | 6,7% | 3,3% | 1,7% | 28,3% | | | | | | |
| Professional qualifications | 1. Finished elementary school | 0 | 0 | 0 | 0 | 0 | 0 | 120 100% | $x^2=11,845$ C=0,300 | p=0,458 p>0,05 | | | |
| | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | 0,0% | | | | | | | |
| | 2. Secondary education | 6 | 5 | 8 | 10 | 7 | 36 | | | | | | |
| | | 5,0% | 4,2% | 6,7% | 8,3% | 5,8% | 30,0% | | | | | | |
| | 3. Higher education | 1 | 1 | 1 | 0 | 1 | 4 | | | | | | |
| | 0,8% | 0,8% | 0,8% | 0,0% | 0,8% | 3,3% | | | | | | | |
| | 4. High professional | 7 | 10 | 9 | 5 | 6 | 37 | | | | | | |
| | | 5,8% | 8,3% | 7,5% | 4,2% | 5,0% | 30,8% | | | | | | |
| | 5. Master / Doctor of Science | 10 | 15 | 11 | 4 | 3 | 43 | | | | | | |
| | | 8,3% | 12,5% | 9,2% | 3,3% | 2,5% | 35,8% | | | | | | |
| Years of service | 1. Up to 10 years | 7 | 7 | 12 | 9 | 7 | 42 | 120 100% | $x^2=18,315$ C=0,364 | p=0,106 p>0,05 | | | |
| | 5,8% | 5,8% | 10,0% | 7,5% | 5,8% | 35,0% | | | | | | | |
| | 2. From 11 to 20 years | 7 | 11 | 8 | 3 | 8 | 37 | | | | | | |
| | | 5,8% | 9,2% | 6,7% | 2,5% | 6,7% | 30,8% | | | | | | |
| | 3. From 21 to 30 years | 6 | 7 | 3 | 7 | 0 | 23 | | | | | | |
| | | 5,0% | 5,8% | 2,5% | 5,8% | 0,0% | 19,2% | | | | | | |
| | 4. Over 30 years | 4 | 6 | 6 | 0 | 2 | 18 | | | | | | |
| | | 3,3% | 5,0% | 5,0% | 0,0% | 1,7% | 15,0% | | | | | | |
| Workplace | 1. Worker | 13 | 20 | 20 | 16 | 14 | 83 | 120 100% | $x^2=9,193$ C=0,267 | p=0,686 p>0,05 | | | |
| | | 10,8% | 16,7% | 16,7% | 13,3% | 11,7% | 69,2% | | | | | | |
| | 2. Operations Manager | 5 | 6 | 4 | 2 | 2 | 19 | | | | | | |
| | | 4,2% | 5,0% | 3,3% | 1,7% | 1,7% | 15,8% | | | | | | |
| | 3. Mid-level manager | 3 | 3 | 4 | 0 | 1 | 11 | | | | | | |
| | | 2,5% | 2,5% | 3,3% | 0,0% | 0,8% | 9,2% | | | | | | |
| | 4. Top Management | 3 | 2 | 1 | 1 | 0 | 7 | | | | | | |
| | | 2,5% | 1,7% | 0,8% | 0,8% | 0,0% | 5,8% | | | | | | |

Source: author

According to the data in Table 3, not all independent variables are significantly related to the respondents' attitudes about whether the compulsory pension insurance is excellent.

Namely, the value of the Chi-square test and the coefficient of contingency C show that age ($x^2=6.890$, $C=0.267$ and $p=0.684$), profession ($x^2=11.845$, $C=0.300$ and $p=0.458$), work experience ($x^2=18.315$, $C=0.364$ and $p=0.106$) and the position of the respondents in the company ($x^2=9.193$, $C=0.267$ and $p=0.686$) were not statistically significantly related to the stated attitude of the respondents (opinion: the pension fund guarantees safe pensions). This means that we have no significant deviations in respect of the said position. Most respondents share the view that the pension fund does not guarantee a secure pension.

The independent variable of gender ($x^2=8.672$, $C=0.155$ and $p=0.070$) is statistically significant with the view that the pension fund guarantees safe pensions. In other words, this means that the answers of the respondents are statistically significant in terms of gender.

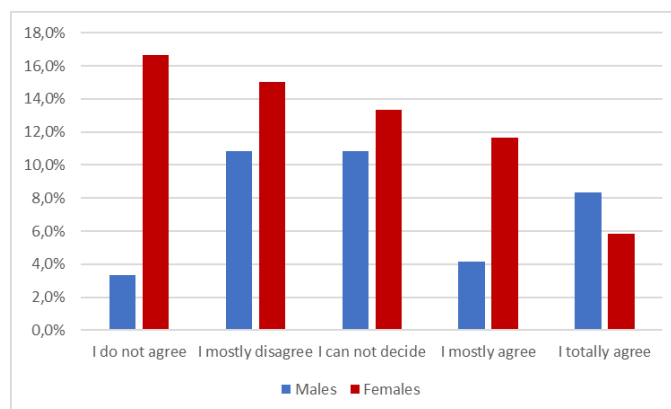


Diagram 2. Agreement with the claim that the pension fund guarantees secure pensions

Source: author

By analyzing the data from Diagram 2, we can conclude that the claim that the pension fund guarantees secure pensions does not agree with the majority of the respondents regardless of gender, but female respondents are predominant. This is perhaps understandable because women have a more cautious attitude to existence.

Table 5. A reform of the pension system is necessary

| Social-andragogical character. of respondents | | It is necessary to reform the mandatory pension insurance | | | | | | IN TOTAL | χ^2 i C | p |
|---|-------------------------------|---|---|----|----|----|----|----------|------------------------------|-------------------|
| | | 1 | 2 | 3 | 4 | 5 | | | | |
| Pol | 1. Males | 0 | 1 | 6 | 12 | 26 | 45 | 120 | $\chi^2 = 4,088$ C=0,182 | p=0,334 p>0,05 |
| | 2. Females | 0 | 0 | 9 | 14 | 50 | 75 | | | |
| Year of life | 1. Up to 35 years | 0 | 0 | 6 | 13 | 18 | 37 | 120 | $\chi^2 = 14,786$ C=0,331 | p=0,063 p>0,05 |
| | 2. 36-50 years | 0 | 0 | 5 | 8 | 36 | 49 | | | |
| | 3. Over 50 years | 2 | 1 | 4 | 5 | 22 | 34 | | | |
| Professional qualifications | 1. Finished elementary school | 0 | 0 | 0 | 0 | 0 | 0 | 120 | $\chi^2 = 8,335$ C=0,256 | p=0,754 p>0,05 |
| | 2. Secondary education | 2 | 0 | 4 | 9 | 21 | 36 | | | |
| | 3. Higher education | 0 | 0 | 1 | 0 | 3 | 4 | | | |
| | 4. High professional | 0 | 0 | 5 | 8 | 24 | 37 | | | |
| | 5. Master / Doctor of Science | 0 | 1 | 5 | 9 | 28 | 43 | | | |
| Years of service | 1. Up to 10 years | 0 | 0 | 6 | 15 | 21 | 42 | 120 | $\chi^2 = 20,106$ C=0,379 | p=0,065 p>0,05 |
| | 2. From 11 to 20 years | 0 | 0 | 5 | 4 | 28 | 37 | | | |
| | 3. From 21 to 30 years | 1 | 0 | 1 | 4 | 17 | 23 | | | |
| | 4. Over 30 years | 1 | 1 | 3 | 3 | 10 | 18 | | | |
| Workplace | 1. Worker | 2 | 1 | 10 | 19 | 51 | 83 | 120 | $\chi^2 = 3,573$ C=0,170 | p=0,990 p>0,05 |
| | 2. Operations Manager | 0 | 0 | 3 | 4 | 12 | 19 | | | |
| | 3. Mid-level manager | 0 | 0 | 2 | 2 | 7 | 11 | | | |
| | 4. Top Management | 0 | 0 | 0 | 1 | 6 | 7 | | | |

Source: author

According to the data in Table 4, we see that all independent variables are not significantly related to the respondents' attitudes about the necessity of reforming compulsory pension insurance. The value of the Chi-square test and the contingency coefficient C show that gender ($\chi^2=4.088$, $C=0.182$ and $p=0.334$), age ($\chi^2=14.786$, $C=0.331$ and $p=0.063$), profession ($\chi^2=8.335$, $C=0.256$ and $p=0.754$), work experience ($\chi^2=20.106$, $C=0.379$ and $p=0.065$) and the position in the company ($\chi^2=3.573$, $C=0.170$ and $p=0.990$) were not significantly related to the above respondents. This means that we have no significant deviations in respect of the said position. Based on the data from the table, we can conclude that regardless of gender, age, professional qualifications, working experience and position in the company, most respondents agree with the view that a mandatory pension insurance reform is necessary.

Table 6. A reform of compulsory pension insurance can be realized

| Social-andragogical character. of respondents | | Reform of compulsory pension insurance can be realized | | | | | | | χ^2 i C | p |
|---|-------------------------------|--|------|-------|-------|-------|----------|-------------|------------------------------|-------------------|
| | | 1 | 2 | 3 | 4 | 5 | IN TOTAL | | | |
| Pol | 1. Males | 2 | 0 | 13 | 16 | 14 | 45 | 120 100% | $\chi^2=5,761$ $C=0,214$ | p=0,218 p>0,05 |
| | 2. Females | 1,7% | 0,0% | 10,8% | 13,3% | 11,7% | 37,5% | | | |
| Year of life | 1. Up to 35 years | 2 | 6 | 24 | 17 | 26 | 75 | 120 100% | $\chi^2=10,652$ $C=0,286$ | p=0,222 p>0,05 |
| | 2. 36-50 years | 1,7% | 5,0% | 20,0% | 14,2% | 21,7% | 62,5% | | | |
| | 3. Over 50 years | 3 | 1 | 14 | 12 | 7 | 37 | | | |
| Professional qualifications | 1. Finished elementary school | 2,5% | 0,8% | 11,7% | 10,0% | 5,8% | 30,8% | 120 100% | $\chi^2=17,575$ $C=0,357$ | p=0,129 p>0,05 |
| | 2. Secondary education | 0 | 4 | 13 | 13 | 19 | 49 | | | |
| | 3. Higher education | 0,0% | 3,3% | 10,8% | 10,8% | 15,8% | 40,8% | | | |
| | 4. High professional | 1 | 1 | 10 | 8 | 14 | 34 | | | |
| | 5. Master / Doctor of Science | 0,8% | 0,8% | 8,3% | 6,7% | 11,7% | 28,3% | | | |
| Years of service | 1. Finished elementary school | 0 | 0 | 0 | 0 | 0 | 0 | 120 100% | $\chi^2=11,318$ $C=0,294$ | p=0,502 p>0,05 |
| | 2. Secondary education | 0 | 1 | 10 | 9 | 16 | 36 | | | |
| | 3. Higher education | 0 | 0 | 2 | 0 | 2 | 4 | | | |
| | 4. High professional | 0,0% | 0,0% | 1,7% | 0,0% | 1,7% | 3,3% | | | |
| Workplace | 5. Master / Doctor of Science | 0 | 2 | 16 | 8 | 11 | 37 | 120 100% | $\chi^2=10,840$ $C=0,288$ | p=0,543 p>0,05 |
| | 1. Up to 10 years | 0,0% | 1,7% | 13,3% | 6,7% | 9,2% | 30,8% | | | |
| | 2. From 11 to 20 years | 0 | 2 | 13 | 7 | 15 | 37 | | | |
| | 3. From 21 to 30 years | 0,0% | 1,7% | 5,0% | 4,2% | 8,3% | 19,2% | | | |
| Workplace | 4. Over 30 years | 1 | 0 | 5 | 7 | 5 | 18 | 120 100% | $\chi^2=10,840$ $C=0,288$ | p=0,543 p>0,05 |
| | 1. Worker | 0,8% | 0,0% | 4,2% | 5,8% | 4,2% | 15,0% | | | |
| | 2. Operations Manager | 3 | 2 | 25 | 25 | 28 | 83 | | | |
| | 3. Mid-level manager | 2,5% | 1,7% | 20,8% | 20,8% | 23,3% | 69,2% | | | |
| Workplace | 4. Top Management | 1 | 2 | 7 | 4 | 5 | 19 | 120 100% | $\chi^2=10,840$ $C=0,288$ | p=0,543 p>0,05 |
| | 1. Worker | 0,8% | 1,7% | 5,8% | 3,3% | 4,2% | 15,8% | | | |
| | 2. Operations Manager | 0 | 2 | 3 | 1 | 5 | 11 | | | |
| | 3. Mid-level manager | 0,0% | 1,7% | 2,5% | 0,8% | 4,2% | 9,2% | | | |
| Workplace | 4. Top Management | 0 | 0 | 2 | 3 | 2 | 7 | 120 100% | $\chi^2=10,840$ $C=0,288$ | p=0,543 p>0,05 |
| | 1. Worker | 0,0% | 0,0% | 1,7% | 2,5% | 1,7% | 5,8% | | | |

Source: author

As in the previous case and by analyzing the data in Table 5, we see that all independent variables are not significantly related to respondent attitudes about the possibility of implementing the reform of compulsory pension insurance. The value of the Chi-square test and the contingency coefficient C show that gender ($\chi^2=5.761$, $C=0.214$ and $p=0.218$), age ($\chi^2=10.652$, $C=0.286$ and $p=0.222$), profession ($\chi^2=17.575$, $C=0.357$ and $p=0.129$), work experience ($\chi^2= 11.318$, $C=0.294$ and $p=0.502$) and the position of the respondents in the company ($\chi^2=10.840$, $C=0.288$ and $p=0.543$) are not statistically significantly related to the stated attitude of the respondents. This means that we have no significant deviations in respect of the said position. Based on the data from the table, we can conclude that regardless of gender, age, professional qualifications, working experience and position in the company, most respondents agree with the view that a mandatory pension insurance reform is necessary.

5 CONCLUSION

Pension insurance is the subject of debate and analysis in almost all countries of the world because a stable pension system is one of the prerequisites for economic growth and development. It is therefore important that there is pension security, regardless of whether the system can generate revenues sufficient to provide a socially acceptable living standard and their proper funding.

The problem of population aging and a decline in the birth rate leads to an unfavorable relationship between the number of employees and the number of pensioners. Adding to this is the economic crisis that has caused problems in the functioning of national economies in the last decade, all this contributing to the increase of contributions and problems with their collecting. This in turn leads to irregular payments of pensions, as well as an increasing deterioration of pensioners due to the small amount of pensions that often fail to provide to cover their existential needs. It is precisely for these reasons that a reform of the pension insurance system is in progress in many countries of the world. The existing public pension insurance system (1st pillar) becomes financially unsustainable, which necessitates the introduction of an additional one (2nd pillar) and voluntary pension insurance (3rd pillar).

It can be concluded that the main reasons for the reform of the compulsory pension insurance system in Serbia are the same as in the rest of the world: the efforts to reduce public spending and budget deficit, address the aging of the population, prevent early retirement and the need for greater coverage of the insured.

The average pension in Serbia is among the lowest in Europe and cannot guarantee material security in old age.

Reforms should not be expected to solve all the problems of the pension system. The World Bank is no longer so categorical in applying the pension reform model which it previously advocated. It can therefore be said that it has conducted one type of experiment to examine how this model will look like in the practice of transition countries. In order to solve the problem of pension system deficits in the long run and improve the position of key retirees, the problem of unemployment needs to be resolved and production increased. This represents a harder path to healing, so to speak, but it is, of course, much more effective.

The globalization process has also affected the pension system as an important segment of the economy (public finances) as a whole, so that, along with unfavorable demographic trends, reforms are inevitable.

In this paper, in one place, the current situation and perspectives of pension systems are analyzed both in our country and in the world. It has been shown that many countries (especially countries in transition) have to transform their systems for financial, demographic and economic reasons.

By analyzing the data from the survey, we can conclude that the general hypothesis is confirmed: citizens are not satisfied with the existing situation in the pension insurance system, they consider the pension fund to be empty and that it fails to guarantee safe pensions.

This means that the reforms implemented so far have not been sufficient and that they need to be continued.

There are significant differences between the populations of men and women regarding this issue: the pension fund is full and guarantees safe pensions.

There are significant differences between age and age populations regarding this issue: mandatory pension insurance is excellent.

With other issues, there is no significant difference in opinion regardless of gender, age, professional qualifications, work experience and the position of the respondents in the company.

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DIFFERENT INDUSTRIES – DIFFERENT VALUES: COMPARATIVE ANALYSIS BETWEEN THE ORGANIZATIONAL CULTURES IN FINANCIAL AND IN SOFTWARE COMPANIES

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ABSTRACT

The paper explores the topic of organizational culture in different industries. By applying a questionnaire based on the Competing Values Framework the cultures of two different companies are compared – one from the finance industry and one from information and communication technologies. Four types of culture are studied – market, clan, adhocracy and hierarchy and profiles of the values in each company are created. The sample consists of 300 participants from a bank and 124 participants from a software company operating in Bulgaria.

The predominant values in both organizations are competitiveness and goal achievement related to the market type of culture. However, in the bank the results are higher when compared to the software firm. In the bank institution, expectedly, the hierarchy culture has higher mean points and the adhocracy culture is more predominant in the software than in the bank organization. Only one company per industry is included in the paper and this provides opportunity for future and extended studies on the topic although the fact that we have one company per industry could be a limitation of the paper. The results from the different profiles of the value types are valuable for the practice of managers from different departments and can serve for the creation of organizational development programs, recruitment programs, employer branding campaigns, trainings and other activities that foster corporate effectiveness.

Keywords: Organizational development, culture, values, industry, bank, software

JEL: M14

1 THEORETICAL OVERVIEW

The dynamics and development of modern organizations pose different challenges to employers and employees from the state, private and non-governmental sectors. In times of mergers, acquisitions, rapid organizational change, new roles and other changes, organizations strive to keep and maintain their flexibility and effectiveness. Work projects become more complex, with more scope and less time to execute them. The combination of all these factors affects people and teamwork, leading to some difficulties in the workplace.

The organizational context influences both the way teams work and their results.

Organizational culture is one of the major factors for effectiveness of contemporary organizations. Culture can vary depending on the external environment and the internal processes of any organization and therefore any industry. It has an influence on teams due to its relationship to the values, norms and behaviors that are acceptable in an organization [1].

The influence of culture on the teams has been investigated by the researchers ([2], [3], [4]) and proves its effectiveness in practice. Contemporary studies emphasize that culture influences one other key aspect of any organization – its strategy and therefore its strategic

orientations. It is shown in various researches that culture defines the manifestations of strategic orientations ([5], [6]). Organizational strategy and management processes are related to the way teams work by influencing the following aspects:

- The creation and set of clear objectives and tasks for the team by the management;
- The encouragement of the match between team goals and organizational goals through the management processes and solutions;
- The management support for allocation of the necessary resources for the teams [4].

Various studies support the understanding that culture predetermines team processes [4], and according to Cameron and Quinn [1], the way in which teams are managed and operated and in line with strategic orientations can lead to improved company performance and increased organizational effectiveness. Culture explains to a large extent changes in the performance and financial results of organizations [7]. One of the models that explain the relationship between culture and performance is the Competing Values Framework and a questionnaire OCAI created by Kim Cameron and Robert Quinn [8]. The application of OCAI (Organizational Culture Assessment Instrument) is common in the literature and in practice for the study of the culture type in different industries. The framework distinguishes between four types of culture (clan, adhocracy, hierarchy and market culture), and the authors draw a specific profile of the type of culture by industry affiliation. The model is one of the most influential in business culture research. It distinguishes between two dimensions: “flexibility versus stability and control” and “external vs. internal orientation”, and defines four types of organizational culture: clan, hierarchical, ad-hoc, and market. The clan organizational culture is oriented towards supporting the intragroup members, encouraging participation and cooperation. The focus is on people, on development of mutual trust, team spirit and support and encourages the personality development. Hierarchy culture puts emphasis on authority, rationality, procedures and division of labor. Rules are important and respected, thus providing order and predictability for the organization. Adhocracy culture is characterized by the search for new information, creativity, openness to change, experimentation. A peculiarity of the market culture is the orientation towards the achievement of the goals. Tasks must be executed and completed, focusing on rationality, performance indicators, accountability and remuneration [1]. Fig. 1 represents the different cultures according to the Competing Values Framework.

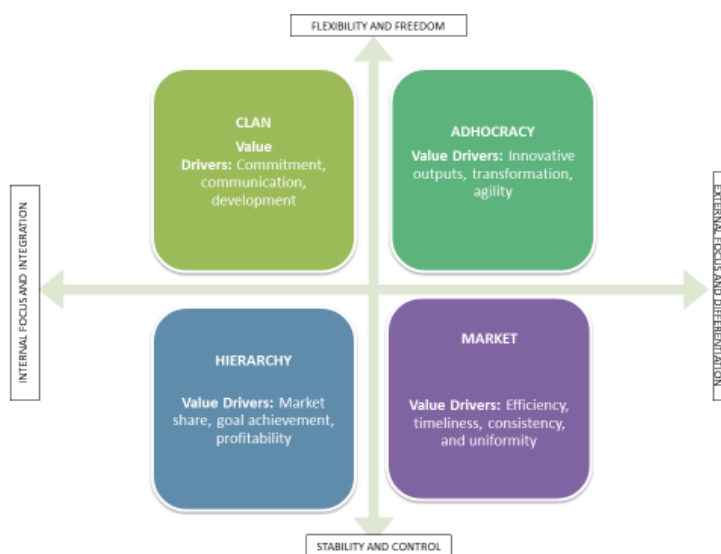


Fig. 1. The Competing Values Framework

When studying the culture in technological companies it is good to take into consideration a research done recently in the Netherlands. In this study of organizational culture in a technology company in the Netherlands, the hierarchical culture results to be the most common, followed by clan, ad-hoc and market culture [9]. The company's goal with this research was to change their current culture and achieve a strong drive towards innovation and customers. In Bulgarian socio-cultural environment, there are several examples of studies of the profiles of organizational culture with Cameron and Quinn's methodology in various industries ([10], [11], [12], [13]; [14]). A questionnaire based on the Competing Values Framework was applied in Bulgarian bank institution and shows that the bank's organizational culture is a balanced combination of the four types of organizational culture – market, hierarchy, adhocracy and clan. However, there is a little preference towards the market culture [13]. Bank institutions are usually a workplace that is characterized by efficiency and stability. Reliability is important, as well as rules and policies. In the literature, we can find different results for the culture of financial institutions. Survey made by Belias and Koustelios of organizational culture in the banking sector in Greece shows that the prevailing current organizational culture is hierarchy, followed by the market, clan and adhocracy while the desired future culture is the clan followed by adhocracy, market and hierarchical [15]. In a research of Bremer it is stated that in US banks the prevailing current culture is market, followed by hierarchical and clan. The desired future culture is adhocracy, followed by clan, market and hierarchy. Most preferred is adhocracy [16]. On the contrary, results from a research in Bulgarian bank show a balance between the four types of current organizational culture. However, the tendency is to prefer more the market culture followed by hierarchy, adhocracy and clan [13]. In order to deepen the understanding of the organizational values in Bulgaria and to find whether there are similarities or difference in the culture profiles and values of companies from different industries, we decided to conduct surveys and to compare the cultures of a financial company and a software company.

2 RESEARCH METHODOLOGY

For the purpose of the study, we applied quantitative research method by using Questionnaire for organizational culture. It is created by Meschi and Roger [17] and is based on the Competing Values Framework of Cameron and Rohrbaugh [18], Cameron, and Quinn [8]. It distinguishes between four types of culture – clan, hierarchy, adhocracy and market.

The scale of Meschi and Roger [18] contains 16 items rated with a 5-degree Likert scale (1=Totally disagree, 5=Totally agree). The scale is standardized for Bulgaria and has good psychometric results with Cronbach's alpha $\alpha=0,731$ [19]. For the purposes of the current study, the original English version [18] of the scale is applied as well as the Bulgarian standardized version.

The psychometric characteristics of the scale for reliability and validity for the current study are tested with factor and item analysis. The overall reliability of the scale with the 16 items for the software companies is very good with Cronbach's alpha equals to 0,87. For the sample from the bank, Cronbach's alpha is 0,731.

3 RESEARCH RESULTS AND ANALYSIS

In order to identify the profile of the organizational culture in the different companies and industries that they operate, we applied exploratory and confirmatory factor analysis, correlation analysis between the subscales of the questionnaire, and descriptive analysis. The results from the factor analysis confirm the structure of the Questionnaire from its original creation [18]. For the analysis described the statistical program SPSS, version 22 is applied.

The profiles of the software and the bank organizations are compared are presented in Fig. 2.

Overall, the results for the software company have small differences between the means of the four types of culture. The leading culture is market ($x=15,35$), followed with a small difference by the adhocracy culture ($x=15,10$). This type of organizations positions themselves in the external environment. They do not rely so much on the traditions, which is understandable about the IT sector and the relatively recent creation of most companies in it.

Innovation, entrepreneurship, creativity is valuable. Of particular importance to the sector are the achievement of goals, the drive for excellence and the establishment of worldwide organizations. It is important for employees to be inspired for more and more achievements; however, the internal environment becomes rather debilitating and stressful. The second result is for the adhocracy culture. In the IT sector, people willingly take risks, experiment and want to be first. Success means using cutting-edge technologies and developing new products and services [1]. IT encourages personal initiative and freedom, which is even visible in artefacts (office space, logos, dress code, etc.) and workspaces in the sector. The informal environment is predominant, but combined with work and initiative to achieve the goals. It is important in software companies to be different, creative, proactive and risk-taking. Change is a rule, not an exception. The leading values are creation of novelty and speed. On a third place is the clan culture ($x=14,80$), which is associated with the family type organization. Values supported in clan-type culture are trust, decentralization, which is typical for technological sectors, given the flat organizational structures. The sense of equality is important. The clan-type culture definitely complements the strong external focus and values of the market and ad-hoc cultures. However, the third place for clan culture indicates that probably there is a lack of empathy, communication and team interaction in the software company. The hierarchy culture has the lowest results ($x=13,21$). The possible explanation is that the order and the control are not well accepted. Quality control through measurement and reporting, also process control is lacking, as well as the detection of errors. The lack of knowledge transfer and good processes could be an issue when working on projects and in different teams.

Therefore, the software company can develop better processes and policies as well as programs for better communication and team interaction. The results from this technological company differ from other similar studies. A study by Abbink [9] states that the leading type of culture in a Dutch technology company is the hierarchical, followed by the clan. When comparing research on culture with innovative teams [20], where the focus is on the internal focus, the results of our study differ. Differences are also observed in the comparison of results for the IT sector in Bulgaria since 2014 [21] when there is a leading market, clan, hierarchical and, lastly, ad-hoc culture.

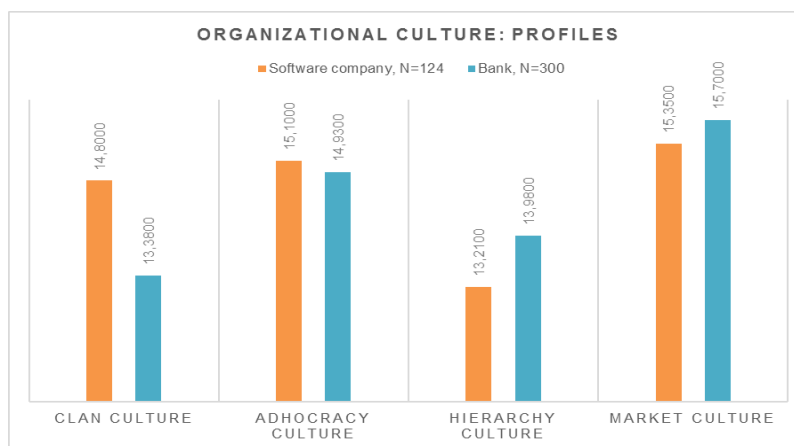


Fig. 2. Organizational culture profiles in software and in bank companies
Source: Authors' analysis in SPSS

The results from the descriptive analysis reveal the specifics of the Bank and are partially in line with the results from a study of financial institutions. According to a research done with the OCAI questionnaire [1] the Market and the Clan Culture are the predominant ones in the financial institutions, and are followed by the Hierarchy and respectively Adhocracy Culture. The discrepancy of the profile of the bank with the profile of other banks is in the area of the adhocracy culture that scores better results compared to the hierarchy culture in terms of results in this study. According to the assessment of the participants the leading bank culture is market oriented ($x=15.07$). The leading values of the bank are related to the positioning in the external environment, dynamics, competition, achievement of results, customer orientation. Productivity and profitability are of high importance. The leaders are ambitious, dominant and insist on fast performance and competitiveness. The mean points of the adhocracy culture are 14.93 and this result makes it second most popular among the participants. According to adhocracy values there is a dynamic environment in the bank that encourages entrepreneurship and creativity. For the adhocracy company risk, flexibility, experimentation, individual initiatives and modern thinking are important. Lower results when compared to the first two types of culture has the hierarchy culture ($x=13.97$) where the values are compliance with rules and procedures, work requirements and job assignments.

With these results for the hierarchy culture, we can assume that the existence of control, structure, careful planning, operations, standard rules and stability are not a priority for the bank employees. Generally, in the hierarchy culture success goes hand in hand with the rules, the completion of the tasks according to the deadlines. The hierarchy leaders are like coordinators – they monitor the work process. Based on the average mean points in the current study, such characteristics are not so popular in the organization. The clan culture ($x=13.38$) has the lowest results. It seems that values such as loyalty, ethics, traditions and the feeling that the employees are part of the same organization are not so popular in the bank.

Some of the characteristics of the clan culture are teamwork, managers who act as mentors and protector figures. However, based on the result for this type of culture in the current study such behaviours are rarely seen.

4 CONCLUSION

When comparing the two profiles – of the software and of the bank company, we can outline that finance and technology are similar in market culture results and adhocracy.

Therefore, for both type of organizations achieving goals and working with cutting-edge technologies and innovations is highly important. However, the biggest discrepancies are found in clan and hierarchy culture. Both companies can promote loyalty, improve communication and put focus on consensus and common goals and values. Collaboration and mentoring can be encouraged with trainings and special programs from the HR and management. Smooth processes related with the hierarchy culture could also improve the internal environment, foster traceability and effectiveness. The study has its limitations such as limited sample. Possible improvement could be to conduct the study in more companies and to include factors for team effectiveness. The results from the current study could be useful for HR managers, team leaders and C-level managers to shape their strategy for people management, to plan programs for trainings, to boost attrition levels and to encourage talent acquisition practices.

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DIGITAL TRANSFORMATION, AGILE DIGITAL COMPANIES AND CONCEPT OF INDUSTRY 4.0

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ABSTRACT

Digital technologies are currently driving the “fourth industrial revolution”. Digital transformation enables and accelerates the smart integration of products and services, placing the customer at the centre. The major power of the fourth industrial revolution lies in the combination of digital technologies with other advanced technologies in order to achieve maximum resource efficiency and boost competitiveness. These challenges require innovative leadership and organisation within companies and greater cooperation across different value chains. Empowered by digital investments, disruptive business models and improved production processes, companies are generating international market opportunities with new products and services. Industries and digital players are converging at a rapid pace, offering new value propositions.

Keywords: Technology, industrial revolution, digital transformation, agility, Industry 4.0, smart factory

JEL: O14

1 INTRODUCTION

We are witnesses to major transformations, not just in businesses, but also in behavioral model, both in public and in private life. Customer expectations have changed significantly, which lead to a shift in strategy and the way which companies do business. To secure the success of their operations, companies must follow various events in their environments, in order to be faster than their competition and to timely react to market changes and new opportunities. Wide use of new technologies has increased the number of demanding customers, which is a consequence of different social trends such as the use of social networks, smart devices etc. [1].

Production sector has sustained radical changes in the twentieth century. After World War II, production was rigid and driven with a goal of producing as many products possible, with the smallest operational cost. During the 1980s, the quality of production became an extra variable and total quality management (TQM) was added to production systems. Afterwards, the goals of manufacturers were competitiveness, integration and proactivity, which lead to inclusion of agile production as a logical next step in mass customization. Changes in industry have always influenced society and the demands of customers, but in case of agile production, a point can be made in the opposite direction. Current social habits and need in society have caused changes in production sector and directly influenced its transformation, adaptation and the beginning of a new industrial revolution.

First industrial revolution involved the implementation of mechanical production systems in the 18th and 19th century. At the end of the 19th century, the second industrial revolution occurred which lead to a wide electrification and distribution of work roles. Digital revolution

represents the third industrial revolution, which began in the 1970s and led to a wide use of automatization, electronics and IT systems in production process. Present-day challenges encountered by production sector are the elements of fourth industrial revolution (Industry 4.0), which was made a term in 2011., and refers to a strategy for the competitiveness of German production industry – “High-Tech Strategy 2020 for Germany” [2], [3]. According to a definition of Industry 4.0 work group, future business systems will be based on global networks which include robotization and high automatization, modern storage systems and production facilities shaped as cyber-physical systems (CPS) that bring a completely new approach to production – integrated production systems called smart factories.

Digitalization of business is an actual issue for some time now and leaders consider it an imperative. In 2016, in Brussels, a declaration of digital transformation was made with seven recommendations which demands concrete, daring and urgent action on all levels, so that transit of all subjects on Industry 4.0 and digital economy can be quickened. With this declaration, the EU has sent a clear message to all of Europe to speed up its development and transformation, so it can continue to exist, remain competitive and to retain its customers [4].

2 CHALLENGES OF DIGITAL TRANSFORMATION

Digital economy is a new type of economy based on digital technologies and for most countries represents one of the most attractive growth possibilities. The presence of digital technologies is something we take for granted and notice an increasing number of different digital tech shapes entering our private lives and business activities, changing the way we lead our lives, organize our obligations, participate in social activities and fulfill our business tasks. Digital technologies have become an important element of endeavor for changes, but also for creating new ways of successful positioning of all participants, from state to individual, from global positioning to family communication, from global solutions to local community interventions.

Overall, the concept of digital transformation describes changes made on individual, organizational or social level, whose contribution is relevant for the given area compared to its previous state, which occur under the influence of some information and communication technologies, like social networks, mobile applications, analytical tools and cloud based applications [5]. In the widest context, the relevant definition of digital technology is a change which digital technologies cause or influence in all aspects of human life [6]. Furthermore, from a business aspect, a narrow definition is more relevant, as it describes this process in business environment as completed, when using digital technologies that are completely mastered start to enable innovation, creativity and encourages meaningful changes in professional or knowledge domain [7].

However, there isn't an agreement and a clear attitude on what it means to be digital. For some managers, digital business is exclusively related to technology, for others it's a new way of interaction with consumers. None of those answers is wrong as it depends on the perspective and the scope of digital transformation of a company. For digital initiatives to succeed, management must have a clear and coordinated attitude on what digital means for them and their organization and how it reflects on strategy and fundamentals of business. If a company uses digital technologies as a lever for strategic repositioning and becomes completely digital, then it becomes necessary to reconsider how much digital technology helps to create greater value for its customers.

Strategic choice of digital transformation of businesses becomes not just an element of style of management or long term planning, but also of company success. Results of latest global study show that the ability of a company to reinvent their business with digital

technology is a result of a clear strategy whose use is supported by management ready to encourage an organizational culture of change [8].

Digitalization brings the most benefit in these areas:

1. **Creating value outside of existing borders.** Digital companies must be ready to redefine their entire business, listen to constant feedback of their customers and to understand how their needs and customers habits are changing in the widest context possible: outside of their own offers or their closest competition, even outside of the entire industry they belong to.
2. **Creating value in basic business.** Next important element and improvement area is a way by which the company serves existing customers and new possibilities which digital technologies bring in that area. Thanks to new technologies, companies can link all of their organizational units and communicational channels with customers in the entire chain of value, offering a unique and unified user experience.
3. **Increase of fundamental capabilities.** When it comes to making decisions, digital companies rely on data and organizational knowledge, encourages innovation at all levels and expanding culture of knowledge sharing. This accommodates flatter organizational structures and better cooperation between organizational units. Likewise, digital companies set new standards for IT support: IT is expected to provide stable and reliable support for standard daily operations, on one side, and to offer speed and innovation for new products and services or completely new business models altogether, on the other side.

To guide successful change (Fig. 1), organizations need to answer four key questions [9]:

1. **Direction:** Where are you going and how will you know when you arrive?
2. **Experience:** Do you have the right engagement for the right audiences?
3. **Culture:** Does your culture support change and innovation?
4. **Technology:** Is your enterprise flexible and adaptable?

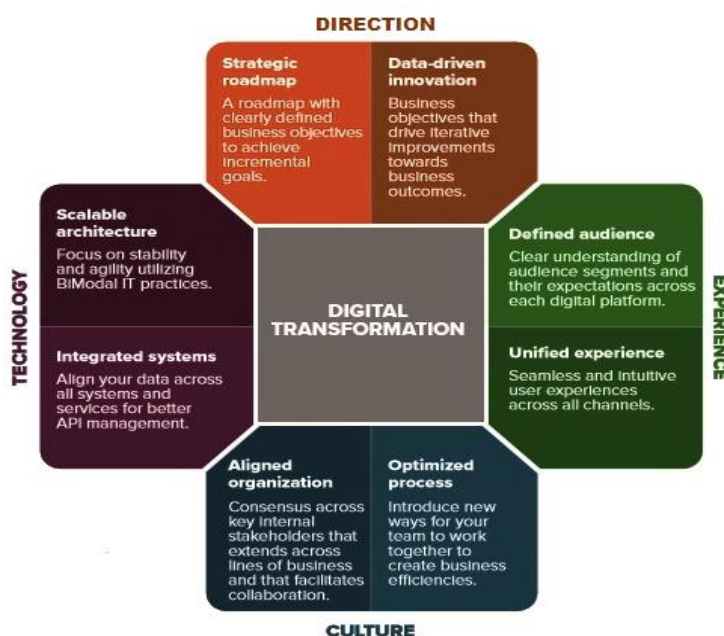


Fig. 1. Answers to the digital transformation

Business digitalization knowledge is not yet completely profiled and there isn't enough practical examples and experiences which could help companies make concrete steps. As Fig. 2 shows, digital companies should be observed as a journey, not as destination. The proposed

processes. For managing numerous variations of business processes, the most successful initiatives of business transformations will rely on agile business processes, with increased demand for IT systems that enable more efficient and effective business.

Digital company is not digital because it uses new technologies, its competitive advantage consists of organizational culture, strategy and the method of operational business which is based on agile business processes. It strives to continually improve its business model by changing its processes, linked platforms, analytical and collaborative capabilities that increase productivity, flexibility and adaptability. Key areas for digital transformation are digital business models (what a company should be doing), digital operational models (how will it do it) and digital talents and skills (who should be doing it).

3 AGILE DIGITAL COMPANIES

Dynamic business environment and mass customization trends have led to major changes in production company organization. Implementation of agile manufacturing in production sector is evident in the last decade. On the one side, a high level of services is expected, and on the other, high flexibility clearly points to a change from mass production to a more agile one [11]. Main driving force of agile production is change [12], with Nagel and Dove [13] confirming it by concluding that the concept of agile production has originated from adapting production systems to a dynamic business environment and the need for frequent change.

Agile production is a new concept in production sector, with a goal of increasing competitiveness of organizations [14]. Inman *et al.*, [15] have researched the connection between lean approach (just-in-time) and agile production. Results show that many authors have diverging opinions: one group holds that lean and agile production are mutually exclusive, while the other thinks that they are mutually supportive and can be integrated fairly well. Focus of lean production is on cutting costs and optimizing operational activities in value chain, while the goal of agile production is to improve operational flexibility that leads to agile (quick and proactive) answer to everchanging demands of customers. As a concept, agility is mostly used in industrial and software engineering [16]. Agility is commonly defined as a measure of flexibility of organization or a system relative to external input values, such as demands of customers or changes in working environment.

The process of achieving agility begins with identifying the current state of things, which enables organizational awareness of where the company stands (Fig. 3). Basic tool for identification is a maturity model which, combined with control lists, provides a mechanism of self-check assessment. Identifying the current level enable a quality GAP analysis and clearly defines a difference between the current and wanted state, the necessary steps needed to be taken for the company to reach the agile stage.

The next step is standardizing of business processes. Efficient companies survive on the market, since they achieved productivity with standardizing. Productivity is a foundation of existing and doing business of companies of the market since it provides efficiency and effectiveness, fulfilling the needs of customers in anticipated time. In the trend of digital transformation, productivity of business processes is tightly connected with digitalization of basic process flows. After achieving productivity, the company is faced in its operational business process with the need of varying basic standardized processes, the need for flexibility in business.

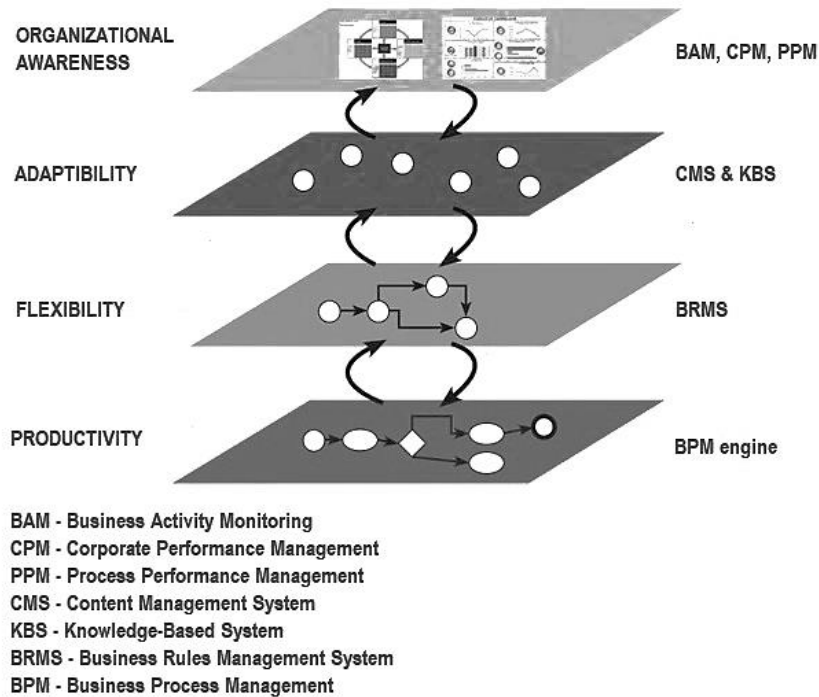


Fig. 3. BPM agility architecture

To achieve flexibility, fulfill the demands of customers and keep its position on the market, the company must identify all known events and situation that initiate a specific variant of process and establish business rules that determines how processes are performed. In the case of digitalized processes, it implies implementing systems for defining and executing business rules (BRMS – Business Rules Management System), which enable automated execution of business processes for all known events and expected situations.

However, in trend technological changes, its not enough for agile business. With increasingly personalized customer needs, its impossible to predict all events and process execution variants. For such unpredictable situations and dynamic, semi-structured processes, standard methods and execution techniques are not enough for their agile implementation. In order to efficiently and effectively respond to such events, it is necessary to use methods and techniques of case management. BPTrends analytical house and their leading expert and one of the biggest authorities in managing business processes, Paul Harmon, has identified case management as key for efficient execution of business processes in years to come [17].

For digitalized processing of new, unknown events and situations, with the use of case management methods of process execution and using knowledge of people and teams through the use of KMS (Knowledge Management System) with Decision Support System (DSS), organizational adaptability is achieved. Such level of process execution includes learning and innovations, so that all new, unknown situations and events are marked down in database for future referencing.

With business process management (BPM), as a key aspect for achieving agility, it is necessary to manage knowledge on different levels of business processes and agility achieving. KMS architecture enables classification of knowledge by sources and connecting them with agility levels. KMS is an integral part of BPM agility platform. It enables addressing problems, necessary knowledge and solutions for all four levels of agility and ways of business process management (see Fig. 3).

Organizational awareness of successful business process execution, business agility, is possible only through continually tracking of execution performance of all levels of business

processes in realtime, using Business Activity Monitoring (BAM). Gathered data and awareness of current state of things are key input for next cycle of maturity level identification and defining needs and steps for further improvements.

BPM agility platform is currently in both private and state companies, on key and very complex business processes. Significant results have been achieved in segments of effectiveness, speed and adaptability, which enables companies to work with the unknown, to learn from new situations, to quickly change processes according to consumer needs, to provide business agility through the use of all technological advantages.

Such systematic approach in managing business processes, with use and implementation of BPM agility platform for executing business processes initiated by known and, as of yet, unknown events, enables organizations to quickly implement the needs and wishes of customers into business process. Furthermore, it enables organization to timely identify changes in their environment, to optimally react to both expected and unexpected events and changes in organization and around it or, simplified, it enables achieving agility.

4 CONCEPT OF INDUSTRY 4.0

According to many industry standards, the fourth industry revolution has occurred in recent years. A lot of new terms have arisen: smart factory, cyber-physical systems, industrial Internet of things. The characteristics of such systems and subsystems are mentioned: visualization, digitalization, real-time analysis, identification, real-time location, collaboration, decentralization, autonomy, agile systems, big data, sensors, cloud computing, virtual reality & network etc.

The government of Germany has marked a strategy of digitalization of production processes called “Industrie 4.0”, aiming to keep its lead in producing and developing technology and standards. USA answer is known as “Advanced Manufacturing Partnership 2.0”, aimed at achieving high quality products, creating a renaissance in production and connecting industry with internet [18]. The government of Japan answers to Industry 4.0 with a strategy called “Revitalization and Robots Strategy”, aiming to increase productivity in industry by promoting, developing and implementing robotic industry, as well as revitalizing digital society and industrial sector [19]. The government of China has adopted a strategy called “Made in China 2025”, aimed at achieving technological development of such capacity that it would make China a leading technological power by year 2025., to improve global competitiveness by implementing innovations, research and applying new jobs through production adaptation [20].

Industry 4.0 is the digital transformation of manufacturing, leveraging third platform technologies and innovation accelerators in the convergence of IT (Information Technology) and OT (Operational Technology) to realize connected factories and industry, smart decentralized and self-optimizing systems and the digital supply chain in the information-driven cyber-physical environment of the 4th industrial revolution [21].

From Industry 4.0 platform (Fig. 4) can be seen that efforts are not being directed only at technology – even though its key – but work groups are being aimed at elements that would enable the project to succeed and achieve set goals. Cooperation with syndicates is especially important, as utilizing Industry 4.0 is expected to bring many changes in area of work and employment. Industry 4.0 is being led by companies, assisted by government on achieving set goals in planned stages. Germans are aware that it can’t be just their own national project, so they are anticipating international cooperation, with a clear intent of being the first or at least among the first. It’s important to note that several universities and national science institutes are included in the project.

According to Herman *et al.*, [22] six project principles have been identified, on which Industry 4.0 implementation scenarios are being based upon:

1. Interoperability,
2. Virtualization,
3. Decentralization,
4. Ability to work in real-time,
5. Service orientation,
6. Modularity.

Its obvious from these principles that a smart factory becomes very flexible in regards to its production program and its support for small series production while also being elastic and resilient to disorder in continued mass production. Advantages of smart factories (4th revolution) over older CIM factories (3rd revolution) are significant. Economically speaking, smart factories will produce up to 30% added value. Even more important are its characteristics: faster response, greater flexibility, shorter time, fewer mistakes, higher productivity, easier work for employees, their numbers aren't decreasing, etc. Smart factory is ecologically optimal, therefore its location is predicted to be near a populated cities.

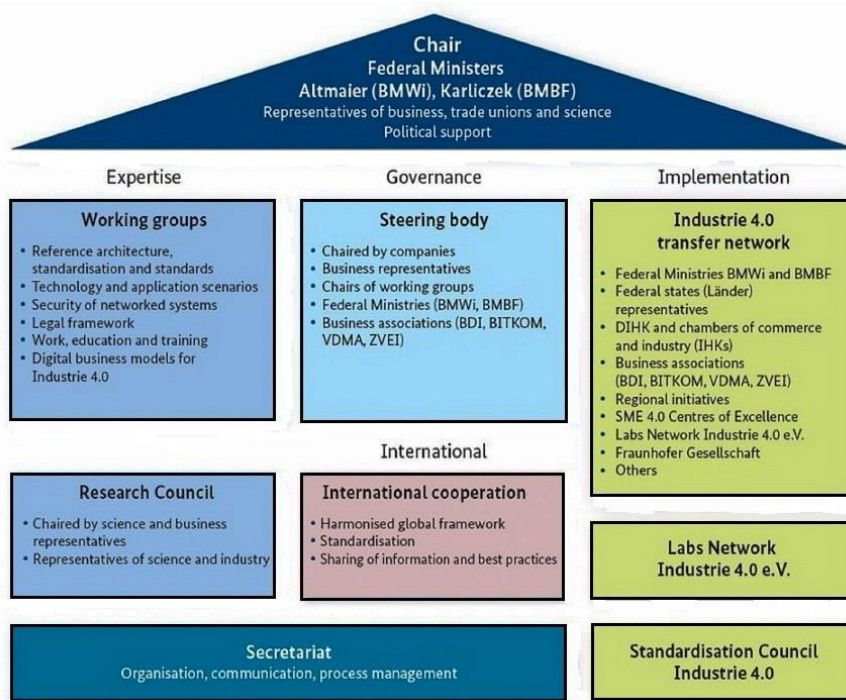


Fig. 4. Platform Industrie 4.0

5 CONCLUSIONS

New concept of digital transformation describes, in the most general sense, the changes made on individual, organizational or societal level whose significance is relevant for given area compared to its previous state, which are happening under the influence of some information of communication technology, such as social networks, mobile applications, analytical tools and cloud based applications. All revolutions are disruptive, and Industry 4.0 is no exception. It poses risks, but offers tremendous opportunity: for new products and services, better ways to serve customers, new types of jobs, and wholly new business models.

As with previous industrial revolutions, the impact of these changes has the potential to ripple across industries, businesses, and communities, affecting not just how we work, but how we live and relate to each other. Industry 4.0 will likely change how we make things, but

it could also affect how those things are moved (through autonomous logistics and distribution), how customers interact with them, and the experiences they expect to have as they interact with companies. Beyond that, it could drive changes in the workforce, requiring new skills and roles.

It can be assumed that Industry 4.0 platform will fundamentally change the way industrial production in the world and that it will once again rearrange the situation on the ranking scale of industrial producers. Implementing Industry 4.0 can make certain problems. The main question is employment and availability of highly skilled workforce. Furthermore, countries that don't implement it in time will have problems with employing and raising GDP. In new, smart factories, a relatively cheap work force won't be necessary, as employed experts won't need to be in the factory itself, since they will work from distance most of their time. Technology will continue to develop, as usual, according to its needs, but this can cause social and political problems, as the direction of bringing industry back to main customer continents (North America and Europe) can cause deeper consequences.

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“CLOUD COMPUTING” TECHNOLOGY AND THEIR USE IN EDUCATION

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ABSTRACT

The purpose of this paper is to show how, in these times of information, knowledge and innovation, to optimize the use of existing resources, to plan long-term direction and make the right decisions regarding the investment by applying cloud computing technology. We will try to explain how it works, the application models, services offered, as well as the justification for its introduction with the benefits it brings. The paper focuses on the advantages of cloud computing in education, which can help increase the quality of higher education and reduce operational costs. The introduction of Cloud computing meets the educational needs of students. It allows for the connection and exchange of knowledge on all levels, direct access to a wide range of different educational resources, research applications and tools. By applying the technological platforms of Cloud computing, operating systems can be more innovative, capital and operating costs are lowered, and the need for human resources is reduced, the use of IT resources is cheaper, and all with the aim of achieving revenue more quickly, increasing efficiency and flexibility in relation to its competitors. The focus of the work is on getting acquainted with an innovative technological platform, which is widely used in different business systems, allowing the development in line with the changes in the business environment, changing the mode of operation, which contributes to cost-effective operations, with emphasis on improving the service, risk management and cost reduction

Keywords: Cloud computing, innovations, electronic learning, Internet, Web technologies

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1 INTRODUCTION

The global economy, as well as the widespread innovations in field of technology have significantly changed the way of business in the global market and introduced novelties in business. Technological changes do not only reduce costs but enable the business system to change its market orientation, and the introduction of new technologies opens new markets.

It is the pursuit of innovation in information technology has led to the emergence of cloud computing (CC). During the year 2008, at the centre of media events dedicated to information technology was the cloud technology that has emerged as a response of information technology professionals to increase the capacity of hardware resources without investing in new infrastructure and training needs for technical staff or the purchase of new licensed programs.

Cloud Computing can be considered as the fifth generation of computer development. The first generation is represented by Mainframe computers and terminals from which data was sent for processing, then the second generation were personal computers (PCs), third and fourth generation are client-server computing and network computing.

It is estimated that by the year 2020, the Cloud technologies will overcome the current state of problems and become the dominant technology. This is ensured by most companies

that invest in the development of platforms for “Cloud Computing” (Amazon, Microsoft, Google, SAP) or in the development of software solutions for some of the platforms Google, Microsoft).

By applying ICT, education comes out of the traditional teaching framework and becomes independent of location and time. This impact in the work will be considered on two grounds.

One which uses ICT to promote the teaching process itself, and the other as a need to learn through the education system how to benefit from these technologies in business and educational institutions.

Universities around the world apply distance learning systems. Given that the number of users and the amount of educational content available in such systems grow, these systems are becoming more complex. The main problems that arise when designing and implementing an e-learning infrastructure in an educational institution are scalability and reliability. The proposal for overcoming these problems is the introduction of the cloud computing infrastructure. This technology enables interaction between users and various services that are accessible on the Internet. In cloud computing, scalable IT capabilities are provided in the form of services delivered via the Internet to external consumers. (R. Bakhshi and J. Deepak, 2009)

When drafting this paper in order to present Cloud computing technology and its applications in education the following scientific methods and techniques have been used:

- collecting and analysing existing scientific results and achievements,
- analysis of business intelligence processes and techniques,
- to develop the model of IT infrastructure for electronic education based on a private cloud model,
- to analyse the effectiveness and usefulness of the IT infrastructure model for electronic education, systematic data collection, and the method of computer data processing.

2 LITERATURE REVIEW

Today, an increasing number of universities organize the teaching process by using the concept of distance education. In addition to the fact that online learning is developing rapidly, it is also becoming an integral part of the educational process. The European Commission points out in the document *Opening up Education: Innovative teaching and learning for all through new Technologies and Open Educational Resources*, that technologies and open educational resources are an opportunity for transforming education (EC, 2013). In this respect, the Learning Management System (LMS) (S. Graf, 2007). – is a basic component in the model of electronic education and can be applied in a very simple system, but also in complex distributed environments. Based on more research, the open source learning management system Moodle is one of the most acceptable platforms in its segment (E. Kahigi *et al.*, 2007). In literature and research, technologies related to the migration of computer centres into the cloud computing environment are cited as technologies that will enable continuous progress in the field of information technology, regardless of the economic circumstances.

2.1 Definitions

There are many definitions of Cloud Computing, but the National Institute of Standard (NIST), defines it as: “Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction”.

3 INFORMATION TECHNOLOGIES AND STRENGTHENING OF CAPITAL

The development of information technologies promotes the transformation of business systems and their transition from a closed to an open business model. Business systems are expected to take advantage of the opportunities that modern technology provides, and to take internal communication and communication with external partners and customers in the business, up to the highest level.

Cloud computing integrates modern Internet and Web technologies which are the key to competitive advantage in the market, and also can encourage the creative potential of business users for the realization of various business plans and ideas or to improve existing business processes.

It is believed that high-speed Internet should be the meeting place for the exchange of knowledge, goods and services. Europe 2020 strategy aims to fund research and innovation, to ensure that innovative ideas can be turned into products and services that create a boost of growth and employment, (COM, 2010 p. 6).

4 CLOUD COMPUTING – SOURCE OF COMPETITIVE ADVANTAGE

The rapid increase of the use of CC technology is motivated by economic considerations, and technological inventions. In Cloud technology IT resources are provided as services, enabling users to access services on the Internet without special knowledge, expertise or the need for the surveillance of technology infrastructure.

Potential users of Cloud hosting are all companies that have requirements for simplified information technology (IT) infrastructure, scalability, high availability, and pay only for the IT resources they really need. In many ways, cloud computing offers business systems “the best of both worlds”, providing solid support for core business functions on one hand and the development of new and innovative services on the other. Services of cloud computing are particularly attractive for companies that can not allocate a large initial investment in IT equipment and the development of their own data centers.

Business systems find the reasons for the application of the cloud computing model in its flexibility and cost effectiveness. Modern services provided by operations in the “cloud” significantly reduce the amount of time and money required for the supply and installation of new hardware systems and software, and the existing maintenance costs of the information infrastructure of the business system. This leads to easier and faster production of new products and services, requested on the market.

5 CLOUD IN EDUCATION

Education in the future should be a source of innovation, creativity and social engagement.

For this to be feasible it will have to change the pace of progress, strategy, content and style of learning. This requires a new strategy, completely adapted to the student, new curricula, changes in the role of teachers in education, and the providing of personalized learning materials. It is also necessary that students can see a clear link between education and employment, and in this sense increased cooperation between schools and businesses is also required. In our country, there isn't enough investment in the IT education. One of the main reasons is the lack of economic development and lack of awareness about the importance of information technology in everyday business activities.

Customer satisfaction is the vital problem in all commercial activities such as telecommunication industry and identifying important factors in satisfying customers is the subject of many researches. (Fatemeh A. 2016). Knowledge is the foundation for the progress

and development of society. Investing in knowledge requires expenditures for education, research and software. This means investing in research and development of, particularly private, high quality research institutions, collaboration in research between universities and the industry and the protection of intellectual property. Disposal of investment in knowledge and measurement of these investments is one of the most important issues facing the knowledge-based economy. It is defined by the OECD as an economy that is “directly based on the production, distribution and use of knowledge and information.”

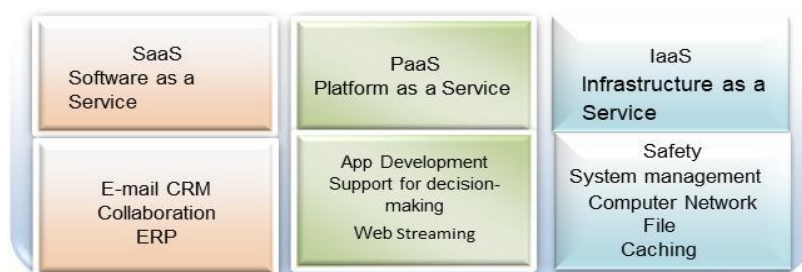
Almost every higher education institution has its own computer centre that was built for its own use. Capacities eventually become inadequate and cannot meet the various requirements of educational and scientific research activities, and at the same time, they are expensive to maintain. Students’ practical projects and laboratory exercises require computers with the latest hardware and specific software. CC in higher education can provide direct access to a wide range of various educational resources, research applications, and tools.

The introduction of “cloud computing” in the educational process is a way of relocating teaching outside the school building. The utilization of this service would allow students practical and targeted use of the Internet in the learning process, and the computer would become the primary means of learning. IBM launched the IBM Cloud Academy (2009), a global forum for educators, researchers and staff from information technology educational institutions to pursue research and development of CC.

The realization of electronic learning in an institution of higher education by applying the concept of internal CC would allow all students and teachers in higher education institutions to have their own data and applications in a way that is much more economical, safer and easier to handle compared to the classical approach in the use of computing resources.

5.1 Models of cloud computing in education

Multiple models of cloud computing are available, providing solid support for core business functions and flexibility in delivering new services.



Picture 1. Types of service delivery

Source: Authors

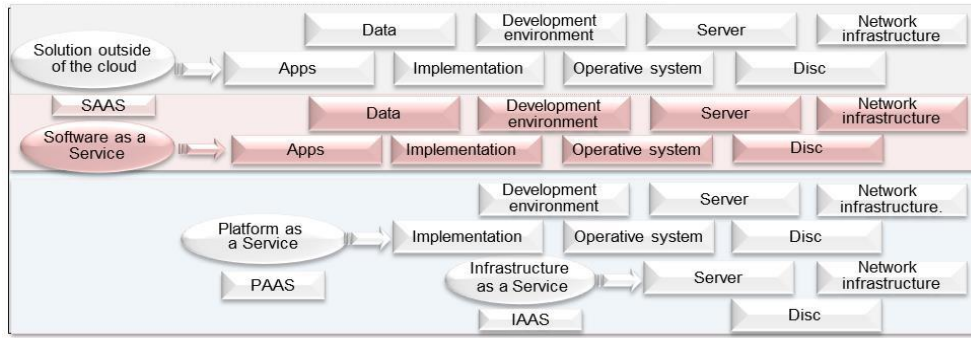
Cloud computing is divided into three segments: “application”, “storage” and “connection.” Each segment serves a different purpose and offers different products for companies.

SaaS (Software as a Service).

SaaS is the realization of a complete application solution that is used as a service on demand. SaaS is a software developed by a third party, and set by the SaaS service provider.

End users access the software through the Internet. The user of SaaS software does not need to install any additional software on his machine, he doesn’t have to know where software is physically located, which operating system is used and what programming language it is written in (Zhu *et al.*, 2011). All users of the same SaaS provider use the same software for their needs (Google’s Gmail and Apps, Yahoo!, Vonage VOIP and Skype).

Picture 2. Delivery of the software as a service

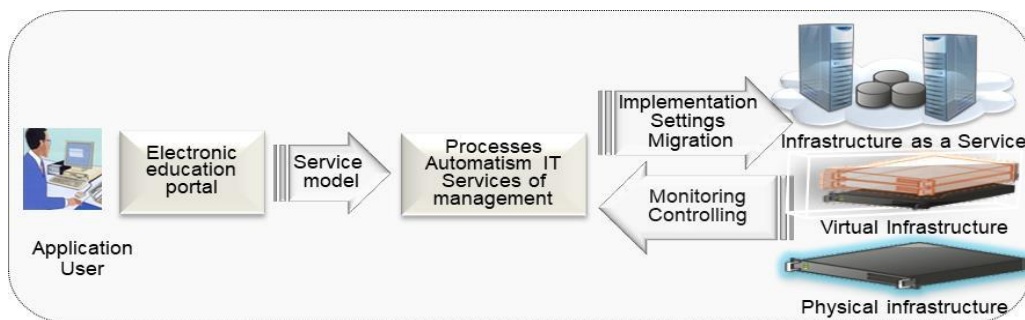


Source: Authors

Much of the responsibility for security management is on the cloud provider. SaaS provides a number of ways to control access to Web portals, such as managing user identities, configuration-level applications and the possibility of limited access to specific IP addresses.

IaaS (Infrastructure as a Service).

Provider offers clean resources, system software, virtual server, processing power, network organization, storage, clusters, etc.



Picture 3. Delivery of the infrastructure as a service

Source: Authors

Further organization is the user’s responsibility. IaaS model shifts the control and responsibility for the security from cloud providers to the client. In this model, access is allowed to the operating system that supports virtual images, networking and storage.

There are many ways for the student to access Cloud computing:

- through hardware devices: Standard computers, PDAs, mobile phones,
- software applications: Web browsers.

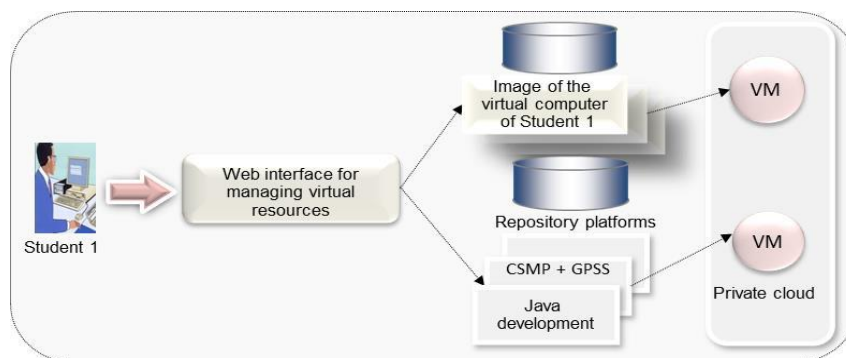
PaaS (Platform as a Service).

PaaS platforms represent an integral computing platform consisting of an operating system, middleware and a set of application solutions.

There are four types of cloud computing development models:

- Private cloud,
- public cloud,
- hybrid cloud and
- common cloud.

If an educational institution wants to have more control over privacy and data security, it should choose the development of a private cloud model.

Picture 4. Platform as a service in e-education

Source: Authors

Architecture of an IT infrastructure based on the private cloud for e-education can provide a high availability, scalability and security system. Designed architecture should provide a quick response to infrastructure needs both for services and resources. This is reflected in the dynamic change in the physical infrastructure size by adding new servers and dynamic clustering in order to meet the requirements of the service. The system should have centralized management of digital identities, virtual and physically distributed infrastructure.

5.2 Electronic learning frames based on the cloud platform

Electronic learning based on Cloud has all the needed resources, such as hardware and software needed to improve the traditional learning infrastructures. Educational materials for the electronic learning systems are virtualized within Cloud servers, so they are available for use to students and other educational institutions and business systems. There are two important Cloud environments that offer a wide range of electronic learning services to students and other users: Virtual – VLE (Virtual Learning Environment) and personal – PLE (Personal Learning Environment).

VLE is used to represent an interactive system of electronic learning. Here, students are faced with a classroom, learning material and a teacher through computer applications and a Web platform.

PLE is an electronic learning system, which allows users to manage their way of learning.

PLE is used to integrate WEB 2.0 technologies such as Wikis, blogs, online materials, online social communities with independent students. PLE offers users a wide range of services, some of them being:

- A student can manage his learning goals so that they fit their own electronic learning system;
- A student can manage the electronic learning system as well as the organization of the learning materials and the system's processes;
- A student can communicate within the learning process with other users who are in the same electronic learning system. (Rajam, S., *et al.*, 2010)

Electronic learning involves learning methods and techniques with the help of a computer, by using the Web and other internet technologies, which offers possibilities of remote teaching and learning. Electronic learning developing environment includes:

- Electronic learning systems (Learning Management Systems – LMS). They control the distribution of multimedia content, towards all or the selected users.
- LMS environment managing systems (Managed Learning Environments – MLE). They allow tracking and researching of lessons based on the so called Scrambled Book, test results, and notes stored in the student achievements database.

- SCORM (Sharable Content Object Reference Model) (<http://en.wikipedia.org/wiki/SCORM>). A collection of standards and specifications for electronic learning, the basic material which students get. (Blinco, *et al.*, 2004).

There are three layers which form the electronic learning on the Cloud platform:

- Basic layer which provides the hardware resources needed for the platform layer and connects enormous system reserves to provide all the needed services
- Platform layer supports hardware organization, takes care about the data storage, development of software and computer environment, and handles the tasks of completing data storages and processing business intelligence.
- Application layer for electronic learning provides application software and the required services for schools and universities (Madan, *et al.*, 2012).

5.3 *Economical aspects of cloud computing*

Cloud computing is a very flexible, cost-effective, “user friendly” proven platform, whose main task is the delivery and providing of business or consumer IT services over the Internet.

Cloud system resources are developing rapidly, with all processes, applications, and services obtained “on demand”, regardless of the user’s location or device within a broadband Internet network.

Cloud computing is defined by the following characteristics, which are oriented toward the user:

- Availability of applications from anywhere, at any time (the only limitation is the link to the prov.);
- Measured services – services are paid on a “pay-as-you-go” basis, consumption of resources can be measured and charged to the user, e.g. monthly;
- There is a very wide network access – e.g., employees can work from home;
- Elasticity - The user can adjust resources according to his needs;
- Self-service – available at any time, with the possibility of alteration, adjustment of server or applications, and labour costs are reduced;
- Applications are “user-friendly” and there is no need to invest time and money to maintain software (licensing the software shall not be paid, there is no need to develop your own software or worry about compatibility with hardware);
- There is no need to invest resources to improve the data centre, servers, or their maintenance;
- High-performance computers are not necessary for users to run the applications. They can be safely run from the Cloud platform;
- There are no problems with fonts and formats;
- Savings in physical space required for the data centre. Studies have documented that cloud computing can save 80 percent of the costs required for a data centre;
- Energy consumption is reduced. Power and air conditioning costs for data centres are large (increased eight-fold over the past 12 years), and the data centre resources have low utilization (below 20 percent). Energy savings go up to 60 percent.

From the standpoint of the provider, the major response is also economy:

- Service providers do not need to invest in infrastructure so that they can begin to make a profit without investing;
- Providers have the ability to use servers and storage hardware, as needed, or as a commodity. In this way, companies can be offered exactly what they require;
- Via provider, application developers can more easily get to the user, by offering their software solutions to the provider, and the provider will offer them to customers.

From the standpoint of IT experts:

- IT professionals can devote the time and resources to development activities;
- They can promote innovation and the true potential of the data centre.

Executives in IT must change their position to leaders who can add to their company a new level of performances and efficiency through IT. This means focusing on improving the service, risk management, cost reduction through effective use of technical staff. If we take into account that IT labour costs represent 70 percent of the IT budget then it is imperative that IT professionals devote more energy to improving the value of IT usage in their company.

As the advantages are mentioned, it is necessary to bear in mind some of the downsides and disadvantages:

- The problem of security, or the confidence that “the owner of the cloud” won’t take over the users of applications, steal data or the application itself;
- It is necessary to adopt a new way of developing applications. Platforms which are offered today by different manufacturers such as Microsoft and Amazon are very different and require a special way of architecture designing of such applications;
- There are no standards for connecting applications (services) in the “clouds” of different manufacturers (or even the same manufacturer), information exchange, or the transfer of the data and software support from the “cloud” of one manufacturer to another;
- Different parts of applications can be in several places in the “cloud.” Means for monitoring and maintenance are not good. There are tools for the system management of the “cloud” environment, but may not be integrable with existing tools;
- The problems of delays of Internet connections or limited bandwidth. Basically, the provider controls the hardware, so unexpected sharing and relocation of machinery can occur, which can affect the execution time.

6 CLOUD COMPUTING IN SERBIA

Every year, the World Economic Forum publishes its report by ranking countries on the basis of the world economy. Ranking is done according to the 12 pillars of competitiveness, which include, inter alia, infrastructure and education. Based on this report for 2017, the quality of education in Serbia is on the 93rd out of 137 ranked positions. This suggests that there is a need for changes in schools, universities and other education organizations in order to make the learning process more effective, using the opportunities provided by new technologies, and encourage creativity and innovation. In order to adapt its educational system to modern requirements, and in accordance with the strategies adopted and above all, having in mind the European space, the Republic of Serbia’s Government (2012) adopted the Strategy for the Development of Education in Serbia by 2020. The Strategy deals with determining the purpose, goals, directions, instruments and mechanisms of the development of the educational system in the Republic of Serbia until 2020. The introduction of new technologies into educational processes would enable highly educated young people, with useful knowledge and skills, using the latest technologies to contribute to the development of the economy.

There has emerged a business need for public and private Cloud solutions in our region.

Services within the CC domain are offered by Telekom in cooperation with Coming Computer Engineering Company, based on VMWare solutions which offer a flexible use of virtual infrastructure, and renting of virtual servers, (server and user applications or the whole

platforms). This service is naturally followed by systems for supporting data security, as well as the “disaster recovery” mechanisms.

In general, weaknesses of existing laws on legal issues, customs and taxes, plus the lack of adequate written laws dealing with electronic crime, are serious obstacles. (Besharat, S., 2017). Official sale of the Symantec Cloud solution for integrated computer safety is offered by the company Net. In corporative ecosystems, Symantec is considered to be the top offer and it has become available in our country within a relatively short period. The number of incidents in the information security is growing throughout the world, from passive monitoring of announcements to real attacks. Although the data from many studies around the world show that the number of cyber-attacks is relatively small, this does not mean that organizations are not at risk. They can have a sense of false security. Taking into account global trends and an increase in the number of attacks, and not to think about cyber security matters, in the end can lead to many Serbian companies become victims of hackers, (Dragan, T., *et al.*, 2016).

7 CONCLUSION

Improving current knowledge in the field of innovations by using high technologies and detailed research within the service activities represents a challenge for innovative management, because changes are supposed to become a part of the way they do business.

Contemporary model is not perennial and the environment will soon force upon them a need to change their business model again. The most successful business systems will be those that dictate the changes, instead of waiting for them to happen. They will always be one step ahead, carefully studying the future and predictions.

In this work, new possibilities and solutions were considered, which indicate how companies can optimally use current IT resources in the condition of economic crisis, simplify the IT infrastructure with low investments and pay only for those IT resources which are really necessary. Introducing Cloud Computing technologies provides a solid support for the main business functions on one side and development of newer and more innovative services on the other.

From this paper, it can be concluded that using Cloud technologies contributes to connecting and exchanging knowledge on all levels, allows a direct access to a wide range of different educational resources, research applications and tools, increases the quality of doing business, reduces capital and operational expenses with a goal to achieve profit as fast as possible and increases work efficiency. The goal of this paper is to encourage future research of new possibilities and solutions within the area of Cloud computing technological platform, related to scientific research activities in higher education institutions.

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COMPREHENSIVE ANALYSIS OF ENTREPRENEURIAL PATTERNS IN VISEGRAD COUNTRIES

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ABSTRACT

This paper intends to provide a comprehensive overview about the current state, challenges and future perspectives of the SME community in Visegrad countries (Poland, the Czech Republic, the Slovak Republic and Hungary). The publication deals with the basic facts and the importance of the SME's, overviewing the main features of the V4 group economies focusing on the SME sector and analysing relevant country specific case studies.

The methodology and the materials based on secondary desk research analysing EU, OECD documents, on-line literature sources and relevant, up-to date statistical data. Based on this methodologies, the main entrepreneurial pattern and opportunities for the SME sector in each Visegrad countries were identified. Taking into consideration of the different patterns, relevant case studies were investigated (Support Program for Poland; Praga as a world class high-tech start-up centre for the Czech Republic; National Project Support for Internationalization SME's for Slovakia; and the Google Extended Digital Workshop Program for Hungary). These case studies pointed out the most urgent challenges of the SME sector. Governmental measures have to clarify the emerging trends and challenges in this area focusing on the future development needs of their diverse SME community everywhere inside the V4 region.

The conclusions and lessons learned based on the “desk research” work reflect the authors' own professional views.

Keywords: Comprehensive, Visegrad countries, SME, Digitalization, Start-up; Youth Entrepreneurship

JEL: L26

1 INTRODUCTION

Small and medium-sized enterprises (SMEs) play pivotal role everywhere in the European economy. Their mission is creating new jobs and economic growth and ensure social stability.

In 2016, the SME sector employed 93 million people (67% of the total number of employees) and generated 57% of value added in the EU-28. Almost all (93%) of the SMEs can be regarded as micro SMEs employing less than 10 persons. Within the non-financial business sector, SMEs play important role in the ‘accommodation and food services’, ‘business services’ and ‘construction’ sectors, in each of which they accounted for more than 80% of EU-28 employment in 2016. In addition to, 70% of EU-28 employment in the ‘retail and wholesale trade’ sector created by the SME's.

Nine out of every 10 enterprises are an SME, which can generate an entrepreneurial spirit and innovation throughout the EU and they can contribute to strengthen competitiveness and employment. 99% of all businesses in the EU mean SME. In the course of the past five years, they have provided 85% of new jobs and two-thirds of the total business sector employment in the EU. Almost three-quarters of SMEs are active in the five key areas: wholesale and retail trade, manufacturing, construction, business services and accommodation & food services. 37% of EU citizens prefer to be self-employed, compared to 51% of the citizens in

the USA and China. 50% of new enterprises failed due to bankruptcy within five years of their initial start date.

2 THEORETICAL OVERVIEW

Since SMEs are the most important source of employment in the EU, numerous national and international programs make efforts to promote entrepreneurship and increase the growth of its turnover.

- The favourable trends in EU-28 SME employment, reflect a stable economic growth in 2016, with some sectors recording growth size 3% or more.
- The employment recovery in the SME sector was most dynamic in the services industries.
- According to the forecast, SMEs will be able to continue their growth in 2018 as well.
- In every Member States – except Greece and Poland – value added production of the SME sector increased in 2016.
- In 2016, 30.6 million individuals were self-employed in the EU-28, that means 14% of total EU-28 employment.

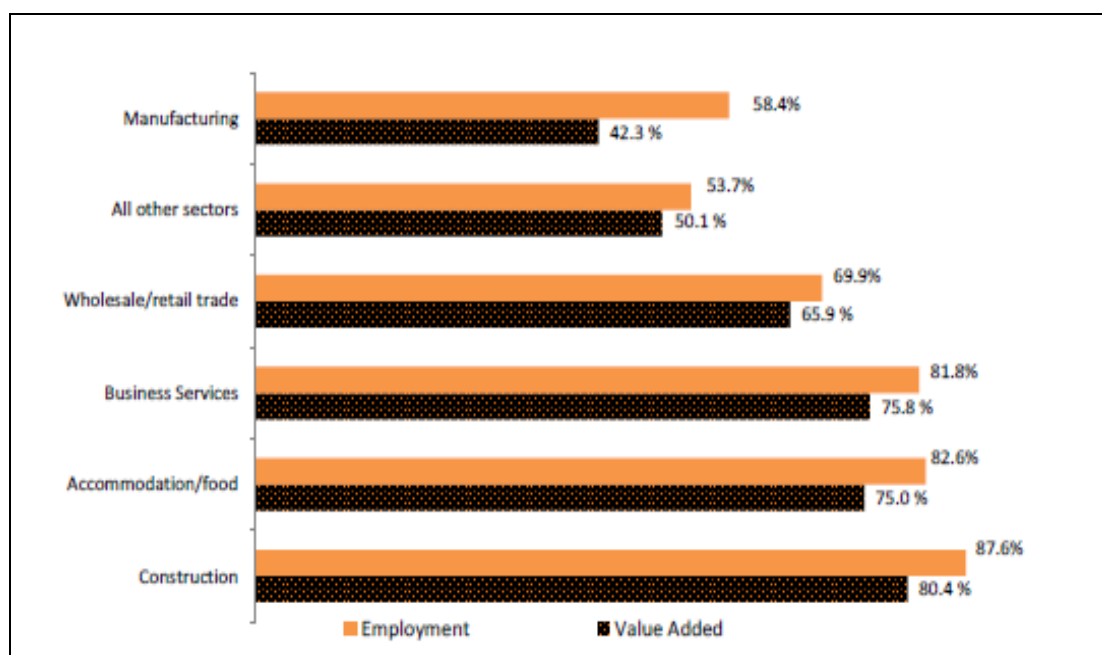


Fig. 1. Contribution of SMEs to employment and value added in the key sectors of the EU-28 non-financial business sector in 2016

Source: Eurostat, National Statistical Offices, and DIW Econ

Clarification of SME definition can be important for access to finance and EU support programmes targeted specifically at these enterprises. According to EU recommendation 2003/361, SMEs can exist in many different forms and sizes; furthermore, in today's complex business environment they have close financial, operational or governance relationships with other enterprises. These relationships can make it difficult exactly to draw the dividing line between an SME and a larger enterprise. For this reason, the SME Definition can be a practical tool in your hand to help SMEs identify themselves so that they can gain access to different grants and financial instruments via programs of the EU and its Member States.

| Enterprise category | Headcount: annual work unit (AWU) | Annual turnover | or | Annual balance sheet total |
|---------------------|-----------------------------------|------------------|----|----------------------------|
| Medium-sized | < 250 | ≤ EUR 50 million | or | ≤ EUR 43 million |
| Small | < 50 | ≤ EUR 10 million | or | ≤ EUR 10 million |
| Micro | < 10 | ≤ EUR 2 million | or | ≤ EUR 2 million |

Fig. 2. Main criteria for the different enterprise categories

Source: European Commission: *User Guide to the SME Definition, 2015, p. 11*

The staff headcount criteria include full-time, part-time, temporary and seasonal staff on the following:

- Employees
- Labour workforce working for the enterprise who have been seconded to it and are considered to be employees under national law (this can also include temporary or so-called interim employees);
- Owner-entrepreneur-managers;
- Partners involved in a regular activity in the enterprise and deriving financial advantages from the enterprise.

The situation of SME's – playing a very complex role in the economy of all European Memberstates including the Visegrad group (V4) as well – can be described as follows:

- They have a complex role in generating social cohesion, and/or in achieving the more equitable distribution of income. The enterprise as a business operation positively reinforces the social commitment of participants in the business, and their civil behaviour in the broad sense of the word (through professional and representative organisations);
- They have another essential role is the creation and maintenance of jobs, and ensuring proper balance in the labour market;
- Due to their characteristics, they have an important role in a more balanced regional development either as actors of the internal market or as suppliers to larger companies, global or multinational;
- Taking into account their profile as producers and service providers fulfil their role in catering sector on the domestic market.

Effective usage of technologies can also be important for SMEs, since more and more industrial sectors become to be digitalised. For increasing their new sales and improve their efficiency, SMEs are deploying technologies exploiting the benefits arising from these ones.

Significant improvements in the reliability of communications used to be one of the highest priorities for SMEs (64%). Other investment priorities include developing customer-facing mobile apps and technologies to analyse customer data. Newly introduced technologies related to business intelligence or operational efficiency can contribute to improve decisionmaking, including data analytics, enterprise resource planning systems (ERP),

Internet of Things (IoT), process automation, robotics and workforce productivity, which is a priority for 56%-57% of SMEs.

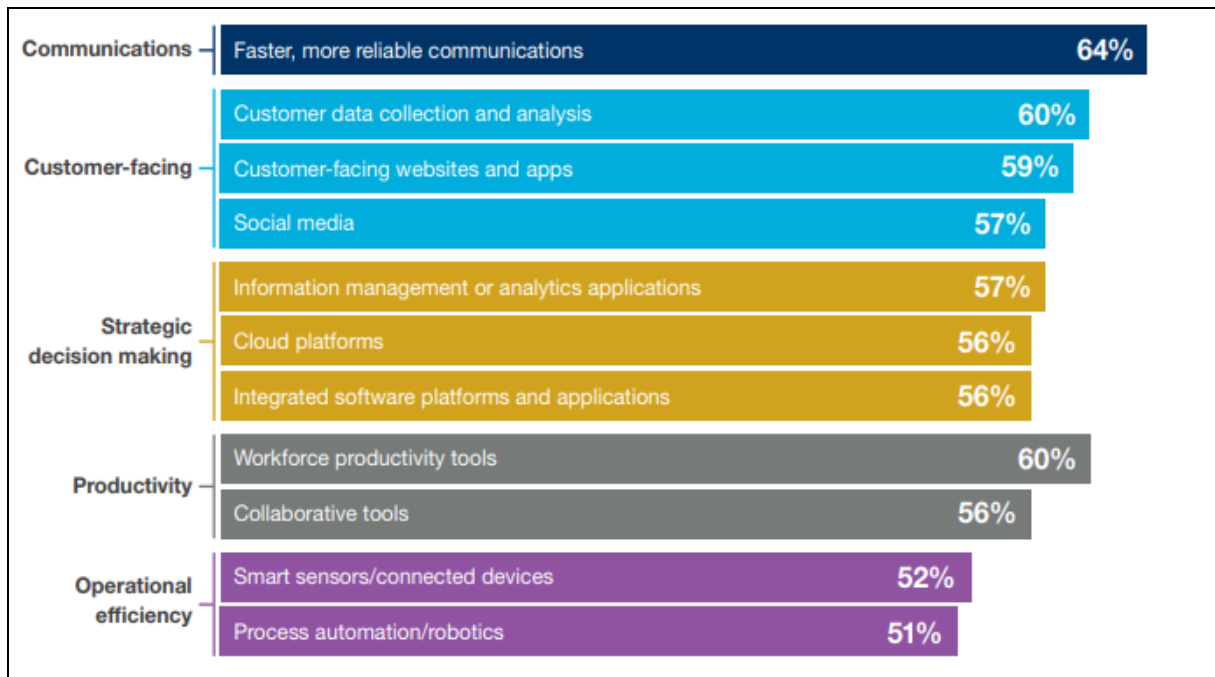


Fig. 3. SMEs most important technologies, today (American Express Global SME Pulse Report)

Source: *SME strategies for success A global study that reveals the key drivers of success for SMEs in 2017 and beyond. Oxford Economics 2018., p. 13*

The EU-28 SME's are facing several challenges as you can see on the below picture:

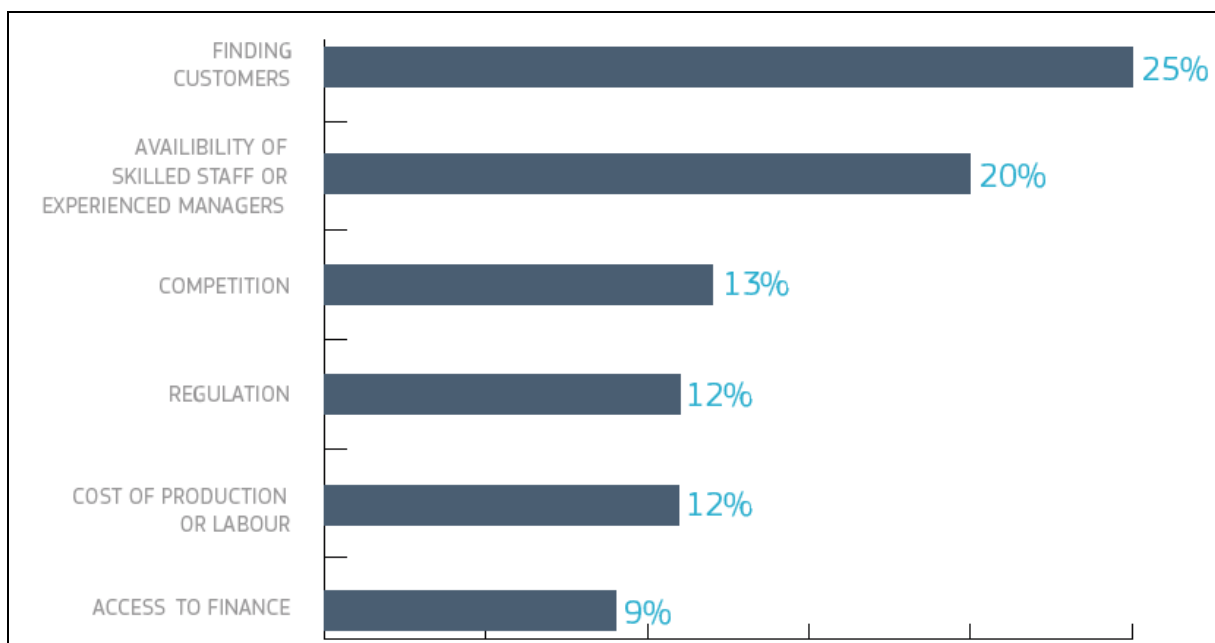


Fig. 4. Most pressing problems of EU-28 SME's

Source: *2016 Safe Survey*

3 GENERAL OVERVIEW OF THE VISEGRAD COOPERATION

The Visegrad Cooperation (ie Visegrád countries, Visegrád fours or V4s) is a regional organization of the Czech Republic, Poland, Hungary and Slovakia. The mission of this cooperation is to represent the economic, diplomatic and political interests of these Central European countries and to coordinate their possible actions. (Visegrad Group used to be regarded as an attractive destination for foreign investments as all four nations are members of the EU and offer lower costs of labour along with high productivity compared to other parts of the EU with an area of about 534,000 square kilometres and a population of about 64 million people).

The establishment of the Visegrád Convention based on a medieval agreement. At the Visegrád Royal Palace in November 1335, a meeting took place due to the initiative of the Hungarian King Charles Robert Károly, III. Kázmér Polish and János Luxemburg with the Czech King. The purpose of the meeting of the three countries was to overcome their controversy and to agree on economic and political cooperation against the Vienna stockpiling right. New trade routes were selected to avoid the Vienna tax. The main stations of the Buda-Brünn route were Esztergom, Trnava and Holics. Buda and Brünn received a full stock right. The centre of Polish-Russian trade in Hungary became Kosice. This cooperation was so successful that the economy of the three kingdoms had flourished in this age.

This cooperation was renewed on 15 February 1991. The declarations signed in 1991 included the elimination of the remnants of the totalitarian regime, the defense of democracy and the unification of the three countries in economic progress and the advancement of the Euro-Atlantic accession. These original aims were widening by many economic and political discussions and conciliations during the '90s. Over the decade, V4 has become a truly powerful and authentic trademark and co-operative. The V4's goals have now changed in NATO and within the European Union. The new targets were laid in 2004 by the leaders of the four countries in their meeting in Kroměříž. The Parties stressed the need for long-term co-operation in the Common Agricultural Policy, in the Structural and Cohesion Funds, in matters relating to the Common Foreign and Security Policy and in the operation of the Schengen system. It is necessary to enforce the principles represented by NATO, and to strengthen transatlantic relations.

The Visegrad Group is not an alternative route to pan-European integration aspirations and does not even try to counteract with other, already existing, functioning Central European structures. Its activities are in no way designed to isolate and loosen connections with other countries. On the contrary, the group is aiming to encourage cooperation with every country, predominantly with their neighbours, as it is in the best interest of democratic development in Europe as a whole. Main cooperation fields within the V4 countries

- Culture, Education, youth exchange, science and technology (S&T)
- Continuation of the strengthening of the civic dimension of the Visegrad co-operation within the International Visegrad Fund and its structures,
- Cross-border co-operation,
- Infrastructure development, Sustainable Environment,
- Combat against terrorism, organised crime and illegal migration,
- Schengen co-operation (joint border protection),
- Disaster management
- Exchange of views on possible co-operation in the field of labour and social policy,
- Exchange of experiences on foreign development assistance policy
- Defence industry

The benefits of closer cooperation of the V4 group in these areas are:

1. Taking concerted actions on regional level may be the most effective solution to strengthen V4 startups and to attract potential partners, investors and customers for Visegrad startups in an extremely competitive market largely due to the mutual support of globally-competitive projects;
2. More cost-effective resource management via sharing expenditures on presentation, participations in different fairs, exhibitions and conferences as well as for support of Visegrad startups;
3. Making the Visegrad region more transparent and visible for third party as an internationally competitive innovation hub and the commitments of the V4 countries to cooperate take into practice economic success on global scale;
4. Joint activities which widening and deepening interactions and cooperations among young entrepreneurs from the V4 countries and provide greater match-making opportunities with potential investors;
5. Exchanging the implementable and adaptable international best practices of regional cooperation in the field of innovation and startups;
6. Potential for a V4 leadership in strategic areas in EU led policy-making and for common regulatory initiatives related to innovation and startups.

Main fora for the Visegrad cooperation:

- V4 Think Tank Platform is a network for well-structured dialog focusing mainly on regional strategic issues such as energy security, internal cohesion, EU institutions and politics, development assistance, ICT security, environmental protection, national minorities issues, migration, transport. The network analyzes hot issues for the Visegrad Group (V4), and gives recommendations for the V4 countries governments.
- The Visegrad Fund is an international donor organization, established in 2000 by the V4 Group governments widening and deepening the regional cooperation among the V4 region as well as between the V4 region and other third parties, especially in the Western Balkan and Eastern Partnership regions. Till now, the Fund allocated €8 million through grants, scholarships and artist residencies provided annually by equal contributions of all the V4 countries. Other sponsor countries (e.g., Canada, Germany, the Netherlands, South Korea, Sweden, Switzerland, USA) have also allocated other additional €6 million through various grant schemes run by the Fund since 2012.

With the signing of the Budapest Declaration in April 2018, industrial cooperation between the V4s will be at a new level. In a global competition, Europe needs a new industrial policy that boosts innovation capacities, promotes faster deployment of new technologies and encourages entrepreneurial spirit, ensuring that the V4 region remains the European Union's growth engine. The mission of the Visegrad governments is to support regional and then international market access for promising SME's operating in the region. The statement calls a number of areas related to the industrial digitization. It means the collaboration of Industry 4.0 platforms, creating the adequate business operational models and processes, the mutual exchange of experiences on workshops, seminars and the development of digital skills where the V4 countries can strengthen their position within the EU and can contribute to the pursuit of EU industrial policy aspirations. Among the V4 countries, possible area can be for further cooperation in the field of newly emerging innovative technologies arising primarily from the global Industry 4.0 trends exploiting the hidden benefits that can give significant competitive advantage.

4 MAIN DATA OF THE VISEGRAD COUNTRIES SME SECTOR

“SMEs have been pivotal strategic role for their stable economic development. However their features in national economies and internationalisation paths can be completely different in every region or country. The reason is beyond that V4 countries can be regarded rather a heterogeneous group in terms of economic potential, macroeconomic situation, pace and course of political changes and market reforms which in turn create different conditions for businesses environment and development. According to Global Competitiveness Report, in the Czech Republic the effectiveness and efficiency of the public institutions, including social trust in politicians are extremely low. Also, the macroeconomic environment is characterized by rising deficits and debt. However, Czech enterprises are relatively innovative, supported by a strong uptake of new technologies” (Global Competitiveness Report 2013-2014, pp. 168-169).

“The shortages of the Hungarian economy arising from high administrative burden of government regulations, low efficiency of legal framework and transparency of government policy-making. The macroeconomic environment is characterized by high government debt and inflation. The strengths of the Hungarian economy based on the high quality of overall infrastructure, including the railroad infrastructure as well as higher education and training. In addition, innovativeness in Hungary is highly ranked in the areas of quality of scientific research institutions, university-industry collaboration and PTC patents” (Global Competitiveness Report 2013-2014, pp. 212-213).

“The strengths of Polish economy include its large market size, high educational standards and well developed financial sector. On the other hand, further enhancing competitiveness will require a significant upgrading of transport infrastructure and reduction of high burden of government regulations for business sector, developing capacities in R&D and business sophistication. In addition, Polish companies should be more oriented towards R&D and intensify their collaboration with universities” (Global Competitiveness Report 2013-2014, pp. 316-317).

“The Slovak Republic is a small country. Main weaknesses arising from institutions burdening with government regulations and weak efficiency of legal framework. Moreover, the macroeconomic environment is not stable enough managing successfully the relatively high government deficits and debt. The innovation pillar has low and weak position in the country. The strengths of the Slovak Republic emerge in the area of financial market development and the technological readiness of the country is quite high, with an emphasis on FDI and technology transfer” (Global Competitiveness Report 2013-2014, pp. 342-343)

4.1 SMEs in the Czech Republic (European Commission: SBA profile of the Czech Republic 2017. p. 2-3.)

Non-financial business economy creates two thirds of total employment, coincide with the EU average. However, the SME share of 54.5% of total value added is slightly below the EU average of 56.8%. Czech SMEs employ an average of 2.4 people, compared to 3.9 average in the EU. The most important sector for Czech SMEs is *manufacturing*, which generates almost 30% of SME value added and employment, nearly 10 percentage points more than the averages in the EU. *Manufacturing* was one of the key sector in which SME growth was weaker compared to large firms. One of the key driving force for overall sector growth was the car industry, including supply chain manufacturers as well as OEM car manufacturers.

SMEs in the field of *motor vehicle manufacturing* sector can exploit the benefits arising from upturn in consumer spending, with value added and employment rising by 32.6% and 8.1% respectively. However, *motor vehicle manufacturing* were dominated by large firms, which means that SMEs' share of growth is relatively small by comparison. This is the true

reason why the Czech SMEs in the *manufacturing* sector underperformed in general compared to large (multinational or transnational) enterprises. Another factor beyond the relatively weak performance of SMEs compared to large firms based on the fact that they faced more challenges in competing for highly qualified, skilled labour forces – large companies are able to offer more attractive wages (the size of the Czech minimum wage is one of the lowest in the EU) and they have better access to foreign labour market as well.

This is general trend not only in the *manufacturing* sector, but also in other sectors of the Czech economy.

In 2012-2016, the highest growth in SME employment took place in the *ICT sector* with its 10.7%. SME value added also grew strongly, up 13.3% in the same period. Total exports of ICT consulting, computer programming and related services increased by more than 40% in 2012-2015. SMEs, responsible for almost a third of these exports in 2015, did not benefit as much as large firms, but nevertheless they managed to achieve growth of 20% in 2012-2015.

Transportation and storage proved exceptional sector in terms of SMEs outperforming large firms. SME value added increased by 19.0% and SME employment by 3.7% in 2012-2016. The explanation for this growth can be the general economic recovery throughout Europe and huge warehouses being built alongside motorways (e.g., Amazon) in the Czech Republic, together with further deepening and widening of the single market. However, there were signs of a slowdown in growth towards the end of the 2012-2016 period. The recent growth in SME value added is expected to continue, with 8.7% according to the forecast for 2016-2018. On the contrary, the SME employment will remain near stagnation, with a minor increase of only 0.4% in the same period, corresponding to around 8 800 new SME jobs.

| Class size | Number of enterprises | | | Number of persons employed | | | Value added | | |
|--------------|-----------------------|----------------|----------------|----------------------------|----------------|----------------|----------------|----------------|----------------|
| | Czech Republic | | EU-28 | Czech Republic | | EU-28 | Czech Republic | | EU-28 |
| | Number | Share | Share | Number | Share | Share | Billion € | Share | Share |
| Micro | 972 523 | 96.0 % | 93.0 % | 1 132 929 | 31.0 % | 29.8 % | 18.5 | 19.6 % | 20.9 % |
| Small | 31 749 | 3.1 % | 5.8 % | 630 281 | 17.2 % | 20.0 % | 13.6 | 14.4 % | 17.8 % |
| Medium-sized | 6 654 | 0.7 % | 0.9 % | 679 173 | 18.6 % | 16.7 % | 19.4 | 20.5 % | 18.2 % |
| SMEs | 1 010 926 | 99.8 % | 99.8 % | 2 442 383 | 66.8 % | 66.6 % | 51.5 | 54.5 % | 56.8 % |
| Large | 1 632 | 0.2 % | 0.2 % | 1 212 452 | 33.2 % | 33.4 % | 43.0 | 45.5 % | 43.2 % |
| Total | 1 012 558 | 100.0 % | 100.0 % | 3 654 835 | 100.0 % | 100.0 % | 94.4 | 100.0 % | 100.0 % |

These are estimates for 2016 produced by DIW Econ, based on 2008-2014 figures from the Structural Business Statistics Database (Eurostat). The data cover the non-financial business economy, which includes industry, construction, trade, and services (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in agriculture, forestry and fisheries and the largely non-market service sectors such as education and health. The following size-class definitions are applied: micro firms (0-9 persons employed), small firms (10-49 persons employed), medium-sized firms (50-249 persons employed), and large firms (250+ persons employed). The advantage of using Eurostat data is that the statistics are harmonised and comparable across countries. The disadvantage is that for some countries the data may be different from those published by national authorities.

Table 1. The main data of the Czech SME sector in 2017
 Source: European Commission: *SBA profile of the Czech Republic 2017*. P. 2.

4.2 SME sector in Slovakia (European Commission: *SBA profile of Slovakia 2017*. p. 2-3.)

The Slovakian SME sector is still fighting to exit crisis. Based on the statistics, fall of 3% in value added and stagnation in employment took place between 2010-2015. After this sharp downturn, SMEs started to regain their “business health” in 2014. The forecast for 2015-2017 is for 11% growth in value added and a 4% increase in employment, equivalent to net job creation of more than 41 000.

SMEs in Slovakia have dominant meaning in the non-financial business economy, similar to the EU average. Slovak SME sector generate 57% of total value added and 71% of total employment, these facts are comparable to the EU averages. Micro-firms play a more

significant role in Slovakia compared to the EU average. They contribute 27% of value added and 41% of employment, 6 and 12 percentage points respectively higher than the EU average.

Wholesale and retail trade and *manufacturing* are taking into consideration as important sectors, which generate SME value added of 25% and 23% respectively. Furthermore, they each provide for more than a quarter of SME employment. SMEs have lately been performing worse than the non-financial business economy as a whole, experiencing an aggregate fall of 3% in value added and stagnation in employment between 2010 and 2015.

Administrative and support service activities has been one of the better performing sectors.

SME value added increased by 8% and employment by 16% between 2010 and 2015.

Demand for administrative and support services has risen due to Slovakia's strong position as an international offshoring destination in the field of financial services, accounting, ICT services, and HR services. Slovakia's attractiveness for foreign large companies based on to three main factors: the high ratio of its workforce with university degree (well educated, skilled labour force), its favourable location in central Europe and its long-term political stability, despite strict employment protection legislation and recent increasings in labour costs.

In the *transportation and storage* sector, 3% growth in SME value added coincided with 5% fall in employment between 2010 and 2015. The increasing in value added arised from falling fuel prices. The unfavourable trends in employment can explain with two main factors:

- vast majority of firms held back from replacing or hiring new employees due to volatility in fuel prices and the resulting expectation of price increases; 7,8%
- increasing tendency to make recruitment workers from neighbouring countries such as Hungary and Romania, which have lower labour costs and less strict employment regulation.

The forecast for 2015-2017 is for 11% growth in value added and a 4% increase in employment.

| Class size | Number of enterprises | | | Number of persons employed | | | Value added | | |
|--------------|-----------------------|---------------|---------------|----------------------------|---------------|---------------|-------------|---------------|---------------|
| | Slovakia | | EU28 | Slovakia | | EU28 | Slovakia | | EU28 |
| | Number | Share | Share | Number | Share | Share | Billion € | Share | Share |
| Micro | 395 223 | 96.8% | 92.8% | 597 090 | 41.1% | 29.5% | 8.8 | 27.0% | 21.2% |
| Small | 10 429 | 2.6% | 6.0% | 208 513 | 14.3% | 20.2% | 4.4 | 13.5% | 18.0% |
| Medium-sized | 2 139 | 0.5% | 1.0% | 230 807 | 15.9% | 17.0% | 5.5 | 16.8% | 18.2% |
| SMEs | 407 791 | 99.9% | 99.8% | 1 036 410 | 71.3% | 66.8% | 18.6 | 57.3% | 57.4% |
| Large | 487 | 0.1% | 0.2% | 417 090 | 28.7% | 33.2% | 13.8 | 42.7% | 42.6% |
| Total | 408 278 | 100.0% | 100.0% | 1 453 500 | 100.0% | 100.0% | 32.4 | 100.0% | 100.0% |

These are estimates for 2015 produced by DIW Econ, based on 2008-2013 figures from the Structural Business Statistics Database (Eurostat). The data cover the 'non-financial business economy', which includes industry, construction, trade, and services (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in agriculture, forestry and fisheries and the largely non-market service sectors such as education and health. The advantage of using Eurostat data is that the statistics are harmonised and comparable across countries. The disadvantage is that for some countries the data may be different from those published by national authorities.

Table 2. The main data of the Slovak SME sector in 2017
Source: European Commission: SBA profile of the Slovakia 2017. P. 2.

4.3 SME sector in Poland (European Commission: SBA profile of Poland 2017. p. 2-3.)

In 2015, the Polish SMEs value added activities for the first time exceeded its 2008 level.

After a brief stagnation period in 2016, they started increasing again at a rate of 5% in 2017. There is a higher proportion of micro-enterprises in Poland compared to the EU average. The Polish SMEs are making more labour-intensive activities compared to the EU

average. In 2015, Poland's SMEs produced 52% of value added, around 5 percentage points below the European average, and yet they generated for 69% of total employment, 2 percentage points above the European average.

Low productivity is main characteristic for Polish firms in all size. SMEs' labour productivity, calculated as the ratio of value added to employment, was less than 40% of the EU average, (EUR 16 920 per person, against an EU average of EUR 43 404). In 2015, micro-firms recorded the largest productivity gap. Their labour productivity amounted to EUR 11 030 per person, which was 70% below the European average of EUR 36.296 since the Polish firms are usually running with relatively little capital. Their asset base is relatively small and means a limit or barrier in front of their investment in expanding and modernising.

SMEs in the *administrative and support service activities* sector can be characterised with particularly strong growth. In 2015, SME value added was 40% higher than in 2010, and employment was 13% above that of 2010. The driving forces beyond this growth based on two specific subsectors: *rental and leasing activities* and *employment activities*. The value added of *rental and leasing activities* grew by 62% between 2010 and 2015, and SME value added in these areas went up by 102%. In 2014, the volume of new leasing contracts enhanced by 21.3%, reaching in worth extra PLN 42.8 million. In the first half of 2015, the total value of the leasing industry's active portfolio stood at PLN 80.4 billion. In 2014, almost 700.000 people were employed either on fixed-term contracts or as temporary agency workers, which means roughly 25% increase from 2013.

SMEs in the *professional, scientific and technical activities* sector – for example *construction activities* and the *real estate* market – grew by 10% in value added and 18% in employment between 2010 and 2015. In addition, Polish firms have tendency outsourcing their services, which is regraded to be an effective way to optimise costs, increased the demand for service companies in the sector.

Transport and storage also performed well. Between 2010 and 2015 SME value added in this field grew by 13%. Vast majority of SMEs gained advantages arising from Poland's largest logistics market position in Eastern Europe, and from the shift of Europe's logistics activities from Germany to Poland due to Poland's favourable geographic location and its competitive labour costs. As far as the maritime transportation development is concerned, the volume of cargo handled in Polish seaports increased to 538.000 freight units in 2015.

A total of 342.466 new businesses were registered in 2015, almost identical compared to the previous year's total of 343.214. Most of the new companies were set up as micro-businesses – roughly 288 000 of the 342.466 firms registered in 2015. According to estimates, the number of de-registrations in 2014 was 290.393, implying a net gain of approximately 43 000 companies in 2014.

| Class size | Number of enterprises | | | Number of persons employed | | | Value added | | |
|--------------|-----------------------|----------------|----------------|----------------------------|----------------|----------------|--------------|----------------|----------------|
| | Poland | | EU28 | Poland | | EU28 | Poland | | EU28 |
| | Number | Share | Share | Number | Share | Share | Billion € | Share | Share |
| Micro | 1 466 188 | 95.0 % | 92.8 % | 3 074 929 | 36.3 % | 29.5 % | 33.9 | 17.9 % | 21.2 % |
| Small | 58 900 | 3.8 % | 6.0 % | 1 226 673 | 14.5 % | 20.2 % | 26.8 | 14.2 % | 18.0 % |
| Medium-sized | 14 706 | 1.0 % | 1.0 % | 1 543 302 | 18.2 % | 17.0 % | 38.2 | 20.2 % | 18.2 % |
| SMEs | 1 539 794 | 99.8 % | 99.8 % | 5 844 904 | 68.9 % | 66.8 % | 98.9 | 52.3 % | 57.4 % |
| Large | 3 048 | 0.2 % | 0.2 % | 2 635 363 | 31.1 % | 33.2 % | 90.1 | 47.7 % | 42.6 % |
| Total | 1 542 842 | 100.0 % | 100.0 % | 8 480 267 | 100.0 % | 100.0 % | 189.0 | 100.0 % | 100.0 % |

These are estimates for 2015 produced by DIW Econ, based on 2008-13 figures from the Structural Business Statistics Database (Eurostat). The data cover the 'non-financial business economy', which includes industry, construction, trade, and services (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in agriculture, forestry and fisheries and the largely non-market service sectors such as education and health. The advantage of using Eurostat data is that the statistics are harmonised and comparable across countries. The disadvantage is that for some countries the data may be different from those published by national authorities.

Table 3. The main data of the SME sector in Poland in 2017
Source: European Commission: *SBA profile of Poland 2017*, p. 2.

4.4 SME sector in Hungary (European Commission: *SBA profile of Hungary 2017*, p. 2-3.)

As far as Hungary is concerned, SMEs value added increasing by 16.8% and employment by 5.7% in 2012-2016. Nevertheless, SMEs are lagging behind the growth levels of big companies. In 2015-2016, SME growth has continued, with both their value added and employment increasing by close to 2%. According to the previous forecast, value added can increase by 10.1% between 2016-2018. Employment has also favourably trends in recent years. Micro firms providing more than a third of all jobs. SME productivity, based on valued added per person employed calculations, was approximately EUR 16.200 in 2016, which is around a third of the EU average of EUR 43.500. The Hungarian SMEs employ 3.3 people, below the EU average of 3.9. SME employment increasing by 5.7% in 2012-2016. In 2016, employment in large enterprises exceeded the pre-crisis level of 2008, whereas employment in SMEs was still 3.5% lower than in 2008. In 2015-2016, SME value added and employment rising by close to 2%.

Manufacturing was one sector in which SMEs have not yet fully recovered from the crisis.

Value added in 2016 was 7.4% above the pre-crisis level in 2008, but SME employment was still 8.5% lower. The *automotive* sector is one of Hungary's core manufacturing sectors, generating 20% of total exports in 2015. Four large original equipment manufacturers (besides Suzuki, Opel, Mercedes and Audi from August 2018, the BMW will be the fifth OEM) have set up production facilities in the country. These large-scale foreign investments have attracted domestic and international suppliers (starting from TIER1 to TIER3) and benefited existing local manufacturers, among them SMEs. In 2012-2016, SME value added increased by 13.3%. But spill-overs from large-scale production plants to local suppliers have not been large enough to generate a significant increase in SME employment. Furthermore, investment in automating production has limited SME employment growth by increasing output per worker. As a result, overall SME employment in *manufacturing* grew only weakly, by 1.9%, in 2012-2016.

The Hungarian *ICT* sector has moderate growth, with an increase of 9.4% in SME employment and 2.3% in SME value added in 2012-2016. Besides the *automotive* industry, the *ICT* sector contributed the next highest share of total exports (8%) in 2014. Furthermore, more than 10% of total Hungarian R&D expenditure arising focusing on software products, including anti-virus protection, and bioinformatics. Overall, the strengths of this sector are the

highly qualified ICT workforce, strong industry-wide professional organisation, and the innovation.

In *administrative and support services*, SME value added grew by 24.9% and employment by 7.1% in 2012-2016. SMEs in *business support services* the rise was 29.1% in value added and 12.8% in employment. Beyond these trends, the driving force can be the centralisation and consolidation different business activities into single service units by multinational companies. The number of Hungarian shared service centres (SSCs) increased by 25% in 2013-2016, and they provided a total of 38.000 jobs in 2016⁹. They have been particularly successful because their cost savings of 30%-50% are higher than the global average savings for SSCs. In recent years the number of companies locating complex, higher value added activities in Hungary has risen. In September 2016, the total number of registered companies, including the self-employed, was 1.697.97212. The number of registered companies dropped by 4.2%, while the number of self-employed increased by 2.7% in 2016. This fact reflects the wide availability of comparatively cheap loans for Hungarian start-ups. Overall, the share of self-employment in total employment was 10.1% in 2016, substantially lower than the EU average of 14.0%.

Value added is forecast to increase by 10.1% in 2016-2018 across firms of all size-classes.

In contrast, SME employment is predicted to fall by 2.5% by 2018.

| Class size | Number of enterprises | | | Number of persons employed | | | Value added | | |
|--------------|-----------------------|----------------|----------------|----------------------------|----------------|----------------|-------------|----------------|----------------|
| | Hungary | | EU-28 | Hungary | | EU-28 | Hungary | | EU-28 |
| | Number | Share | Share | Number | Share | Share | Billion € | Share | Share |
| Micro | 515 298 | 94.1 % | 93.0 % | 900 052 | 33.9 % | 29.8 % | 10.0 | 18.0 % | 20.9 % |
| Small | 27 076 | 4.9 % | 5.8 % | 501 535 | 18.9 % | 20.0 % | 9.2 | 16.7 % | 17.8 % |
| Medium-sized | 4 384 | 0.8 % | 0.9 % | 415 900 | 15.7 % | 16.7 % | 10.1 | 18.2 % | 18.2 % |
| SMEs | 546 758 | 99.8 % | 99.8 % | 1 817 487 | 68.5 % | 66.6 % | 29.4 | 52.9 % | 56.8 % |
| Large | 917 | 0.2 % | 0.2 % | 836 709 | 31.5 % | 33.4 % | 26.2 | 47.1 % | 43.2 % |
| Total | 547 675 | 100.0 % | 100.0 % | 2 654 196 | 100.0 % | 100.0 % | 55.5 | 100.0 % | 100.0 % |

These are estimates for 2016 produced by DIW Econ, based on 2008-2014 figures from the Structural Business Statistics Database (Eurostat). The data cover the 'non-financial business economy,' which includes industry, construction, trade, and services (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in agriculture, forestry and fisheries and the largely non-market service sectors such as education and health. The following size-class definitions are applied: micro firms (0-9 persons employed), small firms (10-49 persons employed), medium-sized firms (50-249 persons employed), and large firms (250+ persons employed). The advantage of using Eurostat data is that the statistics are harmonised and comparable across countries. The disadvantage is that for some countries the data may be different from those published by national authorities.

Table 4. The main data of the SME sector in Hungary in 2017
 Source: European Commission: *SBA profile of Hungary 2017*, p. 2.

5 CONCLUSIONS

In general, you can draw the conclusion, that main common challenges for the SME sector in V4 region independently from the sectorial activities, are the followings:

- Automatization, digitalization
- Skilled labour force
- Management skills
- Foreign Market entrance

Building capabilities and competencies will not be simple for many SMEs, predominantly the newly established firms, since they don't have enough available resources and information to invest in all necessary areas, and managing a growing business successfully. More

developed and older businesses can use a structured change programme to tackle entrenched ways of working and shift organisational culture.

To build these operating capabilities, SMEs will need to find new challenges and solutions for financing. SMEs should look beyond traditional bank lending and see if the range of new sources could better meet their needs for flexible and cost-effective finance.

SMEs should focus on particular market niches either with unique innovative products and services or with products below the economical size for the big companies to explore the hidden business opportunities related to these new market segments. For some firms this can also encompass international expansion. These niche markets often means “blue ocean” areas in which the market contest can be irrelevant for the time being.

Based on the comprehensive analysis related to the main characteristic of the SME sector in the Visegrad countries, the following main “patterns” can be observed:

- The Czech Republic: In terms of the international competitiveness of this sector, the Czech Republic is not only favourably located at the heart of Europe, its labour costs are also highly competitive, with the Czech minimum wage one of the lowest in the EU. In addition to, one of the strongest and dynamically developing SME sector is the ICT.
- Slovakia: Administrative and support service activities has been one of the better performing sectors. Besides that, SMEs are predicted to be the main drivers of moderate growth in the overall non-financial business economy. Micro-firms, however, play a more significant role in Slovakia than the EU average. They contribute 27% of value added and 41% of employment, 6 and 12 percentage points respectively higher than the EU average.
- Poland: Low productivity is an issue for Polish firms in all size classes. SMEs’ labour productivity, calculated as the ratio of value added to employment, was less than 40% of the EU average. Furthermore, they are more labour intensive than the EU average. International comparisons indicate that the availability and quality of entrepreneurship teaching in primary and secondary schools in Poland are among the lowest in the EU. On the other hand, mentoring is not widely spread in Poland.
- Hungary: *The automotive* sector is one of core manufacturing sectors, generating 20% of total exports in 2015. Four large original equipment manufacturers (from August 2018, the BMW will be the fifth OEM) together with a numerous domestic SME vendors have set up production facilities in the country. Furthermore, investment in automating production has limited SME employment growth by increasing output per worker. As a result, overall SME employment in manufacturing sector increased weakly, by 1.9%, in 2012-2016.

Taking into consideration these features, a relevant case studies were selected (Youth Entrepreneurship Support Program for Poland; Praga as a world class high-tech start-up centre for the Czech Republic; National Project Support for Internationalization SME’s for Slovakia; and the Google Extended Digital Workshop Program for Hungary). These case studies pointed out the most urgent problems and difficulties of the SME sector and highlighted concerted actions to overcome these difficulties.

Government policy interventions have to look beyond the tried and tested and focus on the support SMEs will need for future development. To do this, they need to understand the emerging needs of their diverse SME community everywhere inside the V4 region.

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