

Serbian Project Management Journal

Volume 6

Issue 2

December 2016

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SERBIAN PROJECT MANAGEMENT JOURNAL

Volume 6, Issue 2
December 2016

Publisher:

Serbian Project Management Association -YUPMA

Editor in chief: prof. Vladimir Obradović, PhD, University of Belgrade, Faculty of Organizational Sciences; International Project Management Association Education and Training board member

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Journal will be available online at www.spmjournal.rs twice a year.

ISSN 2217-7256 (Online)

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WORD OF THE EDITOR

Serbian Project Management Journal is a journal presented by the Serbian Project Management Association – YUPMA, who had launched this publication on the occasion of its 25th anniversary.

This specialized journal has been presenting the most recent knowledge and best practice in the field of project management and other management disciplines.

So far, many authors from more than 15 countries have recognized Serbian Project Management Journal as a vital reference in their academic or professional career. Most of the articles are based on research undertaken by scholars and specialists in the field. In addition to research articles, the Journal publishes commentaries, researches in brief, and book reviews.



The Journal is deposited in the Serbian National Library and is recognized in Serbian Citation Index, Google Scholar, and Research Gate. In the time to come, the editorial team will pay particular attention to indexing Journal in other scientific databases.

It is our genuine wish to continue further contribution to the project management development and implementation in Serbia through publishing latest achievements and research in the field.

Editor in Chief

Prof. Vladimir Obradović, PhD

A handwritten signature in black ink, appearing to read 'V. Obradović', written in a cursive style.

PROJECTS AND PROJECT MANAGEMENT IN SERBIA

Reinhard Wagner

President of International Project Management Association

Last week I visited Serbia. It was my first visit and I realized how limited my knowledge about this country and the region is. The city of Belgrade impressed me a lot, a major hub at the confluence of Sava and Danube river. This is figurative for Serbia, because the country is a confluence of many tribes, cultures and people. In the middle of the Neolithic period people settled in the region and formed the Vinča Culture, later Thraco-Dacians, Celts, Romans and Slavs settled but were often challenged by other cultures. For example, the Ottomans conquered the region and tried to convert people from the Orthodox religion into Muslims. In 1594, a major rebellion of the Serbs was crushed and Sinan Pasha ordered the relics of Saint Sava – the founder of the Orthodox church in Serbia – to be publicly torched on the Vračar plateau, where nowadays one of the world's largest Orthodox churches is being build, the Church of Saint Sava.



Later the Austrian Empire occupied the country. It was the declaration of war between Austria-Hungary and Serbia that caused the first World War and subsequently many damages to the capital Belgrade. Also during the second World War Serbia was between all forces, first the German Luftwaffe bombed the city, later the Allies and the Red Army attacked it too which still can be seen in the city. After WWII the Socialist Federal Republic of Yugoslavia was formed under the leadership of Josip Broz Tito. Glasnost in Russia and the fall of the Berlin Wall caused the dissolution of Yugoslavia in the early 1990s with another military conflict in the region. Finally, the states of Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Slovenia became independent.

Serbia is in the process of transforming its economy from a planned economy into a market economy. In 2015, the nominal GDP was about \$5,000 per capita, which is half of its neighbour Croatia. Main sectors of the economy are services that account to 50% of GDP, followed by industry with 40% and agriculture with about 10%. Most of the trade is performed with the countries of the European Union and Russia. The economic crisis of 2008 and 2009 hit Serbia very much, the country is still trying to find its place in the world's economy.

The Top 5 export goods of Serbia in 2014 were vehicles, electrical machines, cereals, fruits and vegetables as well as clothes. New businesses, especially in the IT sector are rapidly growing and changing the focus of the country. In addition, tourism is of increasing significance for the country, attracting more than 3 Million people every year to come, from Europe, Middle East and Asia. Many projects are performed in Serbia to improve the infrastructure, for example the \$388 million World Bank Corridor X Highway Project, connecting Serbia and Bulgaria. Or the Belgrade Waterfront development project, combining commerce, culture and community along the Sava River. It is designed to cover an area of approximately 80 hectares with approximately 1.8 million square meters of offices, retails, hotels and luxury apartments. It's estimated that the cost of the project will be around three billion US dollars and will be completed within ten years. Other projects, sponsored by the European Union and the World

Bank, are aiming at increasing the entrepreneurial activities and innovation, e.g. through Mini Grants and Matching Grants Programmes.

Project management is not new to Serbia, already in the late 1960s consulting firms brought know-how into the country. Later individuals, companies and universities used it for country-specific adaptation. 30 years ago the first association was formed. In the context of the former Yugoslavia it was called Yugoslav Project Management Association (“YUDRUP”) and became member of IPMA. Following the disintegration of Yugoslavia, the association was renamed into “YUPMA”, now focusing on the profession in Serbia. YUPMA is one of the founders of South-East Network (“SENET”), exchanging experiences on a regional basis.

Many events have been organised, bringing together Academia as well as practitioners out of the region. In 2006, a Project Management College was established, contributing significantly to the education of undergraduate and graduate students. In 2014, the Commission for Accreditation and Quality Assurance of the Republic of Serbia awarded the College the status of the Faculty for Project and Innovation Management. Currently, a doctoral study programme is undergoing an accreditation process to soon complement the academic offerings. Since twenty years an international symposium is being held in Serbia, bringing together experts from the country, the region and the international level. Other activities of YUPMA cover seminars, workshop and events for practitioners and the Young Crew, the 4-Level-Certification System is offered in order to develop the competences of project managers in the country. An important step for Serbia in order to improve the economic situation and to reposition itself within Europe.

Note from the Editor:

On the occasion of the 30th Anniversary of YUPMA - Serbian project management association and 50th Anniversary of IPMA - International Project Management Association, Mr. Reinhard Wagner, IPMA president, visited Serbia and gave key note speech at the opening of 20th International Symposium of Project Management held in Belgrade on May 19-20th. The above article is Mr. Wagner's review of his visit to YUPMA, Belgrade, and Serbia from the project management point of view.

IMPORTANCE OF PROJECT MANAGEMENT – THE FIRST 30 YEARS OF YUPMA AND 50th ANNIVERSARY OF IPMA

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Abstract: The paper sums up the activities that have been accomplished during the 30 years since the Project Management Association of Serbia was established. Especially assessed are the conditions as regards the development and implementation of project management both in Serbia and throughout the world and also certain trends in the development of project management and the YUPMA in the period to come are traced. Also analyzed and presented are certain tendencies of the future development of project management in the world and Serbia.

Key words: Project, management, improvement, development, implementation.

1. INTRODUCTION

The analysis of the condition and development of project management in Serbia may begin with the following questions: Are the 30 years of the Association a long or a short period for the analysis of the condition and development of project management in Serbia? What has the Association achieved in this period? What people that make this Association achieved in this period? Has project management spread in ex-Yugoslavia, or in Serbia? These are the questions the people who run YUPMA are faced with today when we talk about the thirtieth anniversary of the Association and when we agree that it is time we draw some conclusions and analyze what we have accomplished and what is to be done in the period to come. One issue is also what the situation is with the implementation of project management in Serbia, how we can enrich our knowledge in project management and train as many project managers as possible so that they should contribute to a more efficient execution of our projects.

We should first decide whether this, twentieth scientific conference of the Association YUPMA and PM College is a good opportunity for such an analysis on the basis of which we will be able, upon the completion of the conference and when we take all the suggestions, attitudes and conclusions into

consideration, to say what we have done and how we should proceed.

This is also an opportunity to remember that the preparations for an institutional establishment in the area of project management commenced in 1982, following the participation of a number of our experts at the INTERNET Congress in Copenhagen but also that the beginnings of the implementation of project management methods and techniques in Serbia, the then Yugoslavia, date back to the late 1960s, when two Belgrade institutes and certain companies started to implement network planning techniques and gantograms in business planning and management in certain firms in Serbia, Slovenia and Bosnia and Herzegovina and when some people visited the INTERNET Congresses in Vienna, Amsterdam, Paris, etc.

What is certain at this moment is that the conditions as regards project management implementation are not satisfactory, especially in the area of managing the execution of capital projects. As stressed several times before, [9] implementation of project management, despite definite needs, remains marginal in this society. Regardless of a long tradition of project management development and implementation in Serbia, knowledge in project management is still not disseminated to a satisfactory extent, nor is the need for managing different projects, although it is

evident that without an efficient management there are no efficient projects and results for either the company or the society in general. As far as YUPMA is concerned, the basic goal of the Association's work has remained the same during all these years [4]; it is primarily education, development, and expansion of project management, training, and certification of competent project managers and creation of project units in trade and the private sector.

Despite objective circumstances and difficulties Serbia has encountered in the past years, we have to change the conditions in which the major goal has been that the project should be completed without any questions as to how long it took for the project to be completed and what the costs were, to what extent the delays in the execution of the project raised the price of the project, not to mention the lost profits [9].

2. PROJECT MANAGEMENT IN SERBIA

The YUPMA experts did their best to organize education, implementation, and development of project management in Serbia, however, even after 30 years from the day the Association was established and extensive efforts that were made, the situation as regards the dissemination of knowledge and development is unsatisfactory. As already concluded [9], apart from certain groups of enthusiasts and a small number of academic institutions and economic entities and private sector organizations, there are not many people interested in project management and only a small number of experts implement project management in managing their projects. The public has only limited knowledge about this managerial discipline, especially about its potential to improve the effectiveness of project execution. Hence the awareness of the needs of project management and the potentials of this discipline in project management are significantly limited.

On the basis of the above-quoted conclusions [4;9] and the research conducted by the YUPMA and the Faculty for Project and Innovation Management (PM College) experts over the past years, Serbia lacks broader

available knowledge in project management as well as certified project managers that will manage projects and thus contribute to the efficiency of their execution. Research suggests that awareness among the public should be first raised about the need for project management and certified project managers, and then the implementation and development of knowledge in project management can be discussed.

Having in mind the analysis of the situation conducted for the YUPMA 2011 and YUPMA 2015 symposia and additional research and analyses carried out so far, the situation as regards the implementation and development of project management worldwide can be illustrated by the following conclusions and findings ([4;9], amended):

- There are two international associations, IPMA and PMI, a large number of national project management associations and varied academic and consulting organizations engaged in development and implementation of project management;
- IPMA and PMI hold congresses on a regular basis where the latest knowledge and experience in the area of project management are presented; national and regional conferences on project management are also organized;
- A large number of scientists, consultants and practitioners continually work on the development and implementation of project management, their efforts resulting in numerous approaches, procedures and methodologies being developed.
- There are numerous faculties, associations and consulting organizations engaged in education and training in the area of project management;
- There is sample literature on project management;
- The demand for competent and certified project management increases, etc.

The above-quoted conclusions only prove that the situation as to the expansion of implementation and development of project management worldwide is highly satisfactory and that the implementation of project management constantly increases.

The situation regarding the implementation and development of project management in Serbia, however, is absolutely different ([4;9], amended):

- Knowledge in project management is not developed to a satisfactory degree, and the need for project management is not recognized;
- National capacities in project management, especially reputed and competent organizations such as YUPMA, the PM College and the FOS (Faculty of Organisational Sciences) are not used up to their potentials;
- The number of organizations engaged in project management as well as the number of competent project managers in Serbia are too small in comparison with the need for them;
- Economy and the public sector lack well-designed project units;
- There are good examples such as YUPMA, the PM College and the FOS that are engaged in education, training, and certification in the area of project management, however, they are insufficiently employed, etc.

If we compare the situation in the development and implementation of project management in the world and Serbia, we can conclude that the situation in Serbia, despite great efforts made by YUPMA, the PM College, and the FOS, is not satisfactory and that we do not keep up nor do we make use of PM development and implementation in the world. It is necessary that much more should be done in the following fields:

- Disseminating knowledge and explaining the need to implement project management;
- Creating new educational and consulting organizations to be engaged in disseminating knowledge in project management;
- Creating project units in both trade and the public sector;
- Encouraging state institutions and chambers of economy to work more on explaining the need for project management;

- Introducing an obligation to implement project management in the public sector;
- Developing new approaches and methodologies for different types of projects within IPMA and YUPMA;
- Conducting a more intensive promotion of the project manager profession;
- Intensifying work on increasing the need for certified project managers.

3. TRENDS IN DEVELOPMENT OF PROJECT MANAGEMENT IN SERBIA

The introductory paper of YUPMA 2011[4] brought the strategic trends of the YUPMA development that were partly based on valid needs for the implementation and development of knowledge in project management on the level of Serbia. It was then that the vision, the mission and the three priority strategic trends in the development of project management in Serbia were defined. They were to be realized by YUPMA in collaboration with the PM College and the FOS. These three strategic trends can be supplemented by the fourth, and they are as follows:

1. Popularization of project management and increasing the number YUPMA members;
2. Training and education in the field of project management;
3. International certification of project managers;
4. Development and implementation of new approaches and methodologies.

These strategic trends in the development of YUPMA and project management in Serbia brought forth certain strategic goals ([4], amended) among which we present ones that appear to be relevant at this moment.

To these strategic goals are related a number of tasks whose accomplishment results from the realization of strategic goals and the appropriate trends of development. The major strategic goals include the following:

1. Development, need and dissemination of knowledge in project management;

2. Intensifying different forms of education and training in project management;
3. Defining the YUPMA methodology in project management;
4. Disseminating knowledge in project management among the young;
5. Holding scientific conferences in project management;
6. Promoting and development of the project manager profession;
7. Expanding international certification of project managers, etc.

As well as in the previous period, three organizations are strongly engaged in implementing and development of project management in Serbia. These are YUPMA, the PM College, and the FOS and they represent the pillars of development and implementation of project management in Serbia in the period to come.

These three organisations have done much in the execution of a large number of tasks that resulted in the popularisation of project management, in a relative increase in the number of the members of the Association, in the development of the project management profession and the international certification of project managers, however, this is not enough, and the situation as regards development and implementation of project management in Serbia remains far from satisfactory. It is to be expected that the PM College will significantly contribute to the development and dissemination of knowledge of project management through its undergraduate, master and doctoral studies and thus establish a firm nucleus of competent project managers who will participate in the expansion and an increased implementation of project management in Serbia.

A specific challenge to the future researchers and consultants in the area of project management is the selection of appropriate methodology for managing a specific type of project(s), or development of an entirely new methodology. The world knows a certain number of methodologies [1,2,3,12,13] that are implemented in practice with more or less success. Among them are: PMI, PRINCE2, APM, YUPMA and others. However, there is

no unanimous attitude as to which methodology is the best geared for a certain type of project. Since it is evident that there is a large number of projects with different characteristics, this fact means that it is not possible to formulate and implement a single methodology for all types of projects; hence this problem remains an important challenge to be solved in the future. Worth mentioning here is that the problem of development and expanding the need for knowledge in project management is further highlighted by the fact that IPMA has not provided its project management methodology or methodologies and that, with its PMBOK, PMI already holds a prominent position among the project management users in Serbia and the world.

4. NEW TRENDS OF DEVELOPMENT

When talking about strategic aspects and trends of the development of project management, it is hard to offer any firm and realistic predictions; we cannot offer but indications of paths and orientations that present the trends relying on the achieved level of project management development. From the standpoint of YUPMA and the project management in Serbia, however, we can mention some trends in the development of project management in Serbia that is partially coordinated with the trends of the development of project management in the world.

In accordance with the trends of development of project management in the world, the YUPMA, the PM College, and the FOS experts have individually or in a team worked on the development of certain new approaches, knowledge and applicable solutions in project management. This primarily refers to the research into the possibilities of linking project management with other specialised management disciplines such as strategic management, change management, knowledge management, etc., but also to some other aspects of project management, such as the implementation of certain approaches and methodologies, team work and broader collaboration, impact of the diversity of projects, expanding project management implementation, etc. [5,6,10,13].

It is in this sense that we highlight a number of aspects that may be part of new trends and paths in the development of project management:

1. Strategic insight in the project execution;
2. Change management and project management;
3. Traditional and Agile approaches;
4. New team work and team spirit;
5. Versatility of projects and different methodologies;
6. Expanding the implementation of project management, etc.

Strategic insight in the project execution is characteristic of programme management and project portfolio management [7,8,12] and requires the programme manager and the project portfolio manager to understand and adopt strategic goals of the company and be capable of linking them with the strategic goals of the projects and programmes and vice versa. This strategic attitude and strategic insight, however, are all the more required from project managers since, besides the basic goals in project execution – time, costs and performance, it is necessary that project managers should be able to apprehend the strategic perspective of the project as well and fit it into the company's strategic intents. It is in this way that the project manager moves from a purely operational function towards strategic aspects and positions.

Certain approaches and methodologies point to the need and manner of managing change in the project. However, it is important to say that the approach and manner of introducing change can have a significant effect on the project outcomes. Using the principles and methods of change management is especially important in the case of IT projects, particularly in software development projects, since in this type of projects there is a constant need for introducing change and for changes in individual sections and phases of the project.

A specific manner of project management is used by agile methodologies or agile approaches that propose a phased approach to

project management. In this approach, on completion of a certain phase, specifications and requirements may be changed in accordance with the clients' requirements and desires, and then the new phase follows, all through to the completion of the entire project. In certain situations, it is possible to go back to the previous phase and introduce some changes in order to improve the project process and outcome.

Talking about the agile approach, it is worth mentioning that this approach differs significantly from the traditional approach to project management and the traditional methodologies that mean a clearly defined project management procedure, from the initial idea to the completion of the project. The agile approach insists that the project should be executed in stages or phases, that changes should be introduced in accordance with the client desires and that part of the project or the entire project should be delivered to the client as soon as possible. According to this approach, the delivered project or product can subsequently be altered and improved.

This is possible in case of software projects, however, in the largest number of cases this is not possible when investment, manufacturing projects and the like are considered. When a project of a bridge, railway, factory, hydroelectric plant construction is executed, it is not possible to constantly make alterations or deliver the project in parts and then improve it [14]. This also goes for large manufacturing projects (crane, locomotive, tractor, etc.) as well as for the projects of a general project (steelworks, mills and other). It is necessary that the initial project solution (design) in such projects on the basis of which the project is executed (the so-called technical documentation in investment projects) should be highly accurately produced for the project execution to be possible. In the case of manufacturing, project parts of technical solutions have to be accurately and precisely worked out (these are often expressed in millimeters or parts of millimeters) which shows what the project solution (design) should be like so that the project be executed.

Such project solution cannot be continually altered as that would considerably prolong the execution time and increase the total project costs [1].

The diversity of projects, of managerial approaches and methodologies, are also reflected in the manner the project team is assembled and the team work on the project and increasingly broad collaboration in project execution. The agile approach, for example, requires a different method of organization and work of the project team members. The IT experts engaged in the project team for the development of a certain software solution find it very difficult to observe a rigid organization and principles of team work. They want to work in a relaxed environment, at ease and without strict deadlines and set procedures, hence the notion of team work and team spirit in such situations is different. For such projects the principles of self-organised and self-directed teams should be used, where the team members are considerably more autonomous and free in their work and where the role of project manager as a team leader is not as pronounced as, e.g., in team work in investment project management.

The agile approach and managing software development projects stress the need for a broad collaboration in project management, not only by involving the client in all the phases of project execution but by a continual including all stakeholders that are in any way related to the project. It is in this manner that the importance of stakeholder management as a specific segment of project management is increased.

As far as new approaches, methodologies, and manuals are concerned, it is important to stress a large variety of projects where project management is implemented and the resulting need for different approaches and methodologies adjusted to the characteristics of certain projects. The above presentation and the comparison between traditional and agile approaches to managing investment and software projects clearly highlights significant differences between these projects that in turn require differences in project solutions (design), team work, need to include clients

and other stakeholders, as well as significant differences as to the role of project manager and implementation of specific procedures and methodologies. All these mean that in the times to come it is necessary to work on the development of a number of methodologies for different types of projects since it is obvious that there is no single methodology for all types of projects. It is in this sense that we can stress the weaknesses of the PMI methodology that presents a single methodology for all types of projects.

Finally, it is necessary that new trends and paths in the development of project management should point out to new needs, potentials and methods of expansion of project management as a specialised management discipline that is oriented not only towards a more efficient project execution but also towards improving the efficiency of certain companies, cities and entire regions. This is simultaneously one of the main tasks set before YUPMA in the period to come.

5. CONCLUSION

The celebration of the 30 anniversary of the YUPMA Association stresses the need to perform if only a partial, analysis and assessment of the results the Association has achieved. We can probably agree that this is a rather difficult and unrewarding task. Unrewarding, primarily, because the members of YUPMA, in collaboration with the PM College and the FOS, have worked hard and done much in the development, dissemination, and implementation of knowledge in project management, however, the situation in Serbia as regards implementation of project management can be said to be unsatisfactory. The reasons for such a conclusion are numerous, some of which were mentioned at previous YUPMA scientific conferences.

Firstly, it should be said that the activities of YUPMA, since it was established until the present day, were conducted in hard times in Yugoslavia and later in Serbia, and in the last years, in the conditions of a severe economic crisis both in the world and in Serbia. Given a broad perspective, there is a serious lack of knowledge, partly inherited, about what

project management is and hence the indolence about disseminating knowledge in project management. This also resulted in a lack of understanding of the need for project management and great potentials of project management in improving the efficiency of large companies. It is rather difficult to talk about the need to expand and implement project management in the conditions of poverty and decay in Serbia. People often have to struggle hard to make both ends meet, so they lack the desire and need for a more efficient management.

All these are additionally aggravated by the lack of interest and understanding of state agencies and chambers of the economy that have done very little so far and are doing very little today, about the development and dissemination of project management in Serbia. They are, before all the others, obligated to support the need for permanent education, training and international certification of project managers as well as for the creation of organized project units both in trade and in the public sector, where trained and professional project managers will work. It is only in this manner that companies can be made more stable and more efficient and that the society can be made better and richer.

REFERENCES

- [1] Jovanović P.: Upravljanje projektom, VŠPM, Beograd, 2015.
- [2] Gareis R.: Happy projects, MANZ Verlag, 2005.
- [3] Kerzner, H.: Project Management: A Systems Approach to Planning, Scheduling, and Controlling, Ninth Edition, John Wiley & Sons, 2006.
- [4] Jovanović P.: Projektni menadžment u Srbiji – uspesi i mogućnosti, XV Internacionalni simpozijum iz projektnog menadžmenta, YUPMA 2011.
- [5] Jovanović P., Drobnjaković S., Rudić T., Jovanović F.: Pravci razvoja projektnog menadžmenta, Beograd, 2010.
- [6] Cleland D. I., Bidanda B.: Project Management Circa 2025, Project Management Institute, Inc. 2009.
- [7] Merrow E. W.: Industrial Megaprojects: Concepts, Strategies, and Practices for Success, John Wiley & Sons, Inc. April 2011.
- [8] Reiss G.: Programme Management Demystified, E&FN Spon, London and New York, 2000.
- [9] Jovanović P.: Projektni menadžment u Srbiji – Novi izazovi, YUPMA 2015, Zlatibor
- [10] Frame J.D.: The new project management, Jossey-Bass, San Francisco, 2002.
- [11] Jovanović P.: Projektni menadžment u Srbiji – Vizija i strategijski ciljevi, YUPMA 2009, Zlatibor
- [12] Grundy T., Brown L.: Strategic project management: Creativity organisational breakthroughs, Rumson Learning, 2002.
- [13] J Rodney Turner: Gower Handbook of Project Management, Fifth Edition, Farnham: Gower, 2014.
- [14] Kilibarda G. i dr.: Upravljanje softverskim projektima, Tehnika-Menadžment 66, 2016.

ORGANIZATION DEVELOPMENT PROJECTS MANAGEMENT DRIVING BY ENTREPRENEURSHIP ENERGY

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Abstract: Management of successful projects and programs on the basis of entrepreneurship for development of organizations is considered.

Key words: project success, model, entrepreneurship, context, organization development.

1. INTRODUCTION

The success of development projects and programs depends on two groups of factors: (i) the competence of organizations in managing of its projects and programs; (ii) "Entrepreneurial spirit" that is formed by the leadership of the organization and by the initiator of the project, and which support progress towards successful completion of the projects. The success of the project, as a management category, has contradictions which are formed as a result of different views of the parties concerned. Thus, each of the key party concerned has its level of competence in project management, and may have diametrically opposed views on the success of the projects and their products.

Entrepreneurial energy of various concerned parties promoting the project contains contradictions which are to be accounted for by the organization's leadership in project management processes. Entrepreneurial energy depends on "entrepreneurial potential" available in the organization and the key concerned parties. It is a set of orientations for success, individual and collective responsibility, freedom of expression and creativity (Grachev, 1993). Entrepreneurial potentials a socio-determined set of features and capabilities for organizing and operating a business, which entrepreneurs could possess. Most often, the business potential is characterized by such properties as efforts to

promote economic innovations, forms of implementation of the role function, the final product of economic creativity, ability to take risks, creativity, leadership ability as an entrepreneur, and individual psychological characteristics of the entrepreneur as management skills, independence in the selection and decision-making ability to respond to changes in the economic and social situation (Helfat, 2003).

Summing up all these definitions and properties in the category of concepts and tools for project management, we should note that the entrepreneurial potential determines the technological maturity and organizational competence in the management of projects, programs and portfolios of projects (ICB OCB[®], 2014).

2. RESEARCH PROBLEM

In the practice of project management, the term "entrepreneurial potential" is used often instead of "entrepreneurial energy", which, in fact, reduces the meaning and application of the latter.

The potential is an indicator that characterizes the reserve of energy (including business energy).

In this article, we will use the generalized definition of energy. Energy (or work) is a mathematical expression which is numerically

equal to the power of the object (work) multiplied by the time of the process. Thus, we will consider the power as a quantitative measure of the inertia of the object, based on the work produced and consumed resources per one unit of time.

As the power associated with the cost of enterprise resources in the process of project implementation, *the entrepreneurial energy* is different from *the entrepreneurial potential* which characterizes only reserve of those resources. Entrepreneurial energy is generated and reproduced through internal and external sources. Set of entrepreneurial energy sources can be mathematically modeled by means of a set equipped with additional mathematical structures (metrics, topology, etc.). This is the most common approach.

System model of development projects in a general approach to the use of business energy will include absolutely heterogeneous concept reflecting energy sources, its transmitters (amplifiers, transformers, etc.) and users (projects and programs).

The item of the restudies is formulated as a project management for development of organizations through the development and reproduction of entrepreneurial energy of the parties concerned under operational and project activities of the organization in order to build effective mechanisms for the development of the organization.

3. CLASSIFICATION OF ENTREPRENEURIAL ENERGY

To study the mutual influence of entrepreneurial energy and project for development of organizations, a system of indicators of its condition and sources of forming the initial energy and renewable energy development should be identified.

To date, no method for assessing entrepreneurial energy for development programs exist. Evaluation of energy for development should be based on a hierarchical system of indicators (or a system close to it). The starting point for such a system of indicators should be a system of

common values which will form the mobile context for development of organizations (Bushuyev, 2014).

Let's consider the classification of entrepreneurial energy in the context of modern concepts of development of organizations (Azarov, 2011). In its structure, entrepreneurial energy is multidimensional. The main factors that shape the classification system are: types of entrepreneurial energy, sources and types of energy carriers, catalysts and inhibitors of the application of entrepreneurial energy in development projects, as well as indicators of the impact of the environment (Jaroshenko, 2010). As for the types of entrepreneurial energy, it can be identified: *the primary entrepreneurial energy* (potential) and *the reproducible entrepreneurial energy*. The renewable energy is usually formed in the course of the project.

When classified by energy *Resources*, the three groups maybe distinguished: financial and other resources that are invested in the program, knowledge and creative technologies used as catalysts of entrepreneurial energy management leadership and motivation parties concerned.

As for the *Sources* of entrepreneurial energy, it is possible to define the following classification features: external, internal, resource, technological, behavioral (motivational). Thus, resort, technological and behavioral characteristics may refer both to internal and external sources.

In the direction of the classification of *Financing*, the following features can be distinguished: external investment financial resources, domestic financial resources and other resources.

In the direction of *Knowledge and Creative Technologies*, we can define the following attributes-external and internal intellectual property (patents, trademarks, etc.), open innovation technology and know-how.

In the direction of *Leadership and Motivation*, we define the following features: management leadership, motivation of the parties concerned.

4. COMPETENCE-BASED APPROACH DRIVING DEVELOPMENT PROJECTS BY ENTREPRENEURIAL ENERGY

Now, the terms "the energy of change" or "the energy of reformation" are often used in practice. In this case, the analogy with the motion in mechanical systems is used intuitively. Thus, energy is defined as a scalar physical quantity, as a general quantitative measure of movement and interaction of all forms of matter. Under the term "the entrepreneurial energy", we will understand the visible and invisible activity of the actions of the project and other key concerned parties with using key resources, including knowledge, technology, and creative leadership, which provide progress of the project.

The presence of polar views on the existence and impact of entrepreneurial energy to the successful implementation of development programs were due to differences in the understanding of what the entrepreneurial energy means in the management of projects and programs.

Outside and external sources of entrepreneurial energy, leadership, intuition, rational thinking, appropriate emotions, needs, moods, associations and others may be included here. This set of characteristics can be modeled mathematically by means of a multitude endowed with additional mathematical structures (metrics, topology, etc.). Let's apply the hypothesis of the unity of entrepreneurial energy for sustainable balanced development of the organization based on the chosen strategy. However, under such general approach, the concept of the energy business will include completely different elements, such as energy sources, energy transmitters, amplifiers or transformers of energy.

In the development, the internal and external context of the organization plays an important role. By context, we will understand the behavior of the environment and system of contextual competences of the project team (IPMA OCB[®], 2014), which links the activities of project management and

operational activities of the organization. The operating activity of the organization is its activity aimed to produce products or services. In the development of contextual competences in project and program management, mobile context is formed, which is fueling the development of projects and operations of the organization. The theme of this research is formulated as a definition of the relationship of entrepreneurial energy, mental space and mobile context of operating and project activities of the organization for establishing effective mechanisms for the development of organizational competence and competitiveness.

The entrepreneurial energy in the management of projects and programs is often by enhanced by catalysts and hampered by inhibitors. Catalysts and inhibitors of entrepreneurial energy have their own structure. Elements of the structure of catalysts are: the presence of the special function commercialization of key decisions, the system of incentives for innovators based on the distribution of values obtained in the course of project implementation, metrics for values evaluation and integrated information for decision-making. Inhibitors of development projects inhibit the formation and restoration of entrepreneurial energy and have their certain structure. Examples of inhibitors may be "the belief that innovation will be implemented by itself", "the creation of development policy, forms the barriers to innovation", "sending all the problems to innovators" and others.

Structure of catalysts and inhibitors are complementary elements of the evaluation model for entrepreneurial energy of an organization in a particular situation.

Exploring a new class of energy, such as "entrepreneurial energy" in organizational systems, as a rule, the studies are concentrated on the psychology of the parties concerned and technical aspects of the implementation of development projects, the investment component, the economy of production and development projects.

Creating entrepreneurial capacity, the formation and reproduction of entrepreneurial energy are based on the incremental implementation of development projects and programs.

The hypothesis in this model is used under conditions where the entrepreneurial potential of the project will be formed on the pre-investment phase of the project, during the formation of the project team and key concerned parties.

To assess the entrepreneurial capacity of the organization in the field of project management, programs and project portfolios (PP&P), let us consider a model of organizational competence IPMA OCB[®]. The basic principles of construction of this model are: *completeness of description of the competencies for management of PP&P, their integrity and consistency, independence from the assessment system of organizational competence.*

The key concept of the model is the organization's focus on the next development spiral: Competence>Efficiency of Activity>Competitiveness. Thus, the organizational competences divided into five classes IPMA Delta[®].

Based on the previously mentioned principles, IPMA OCB[®], Model of Organizational Competence, systematically displays all aspects of the organization's project activity, determines the necessary connections within the administration and management of projects, programs and project portfolios, takes into account the internal and external context. Thus, the model represents the process of converting of the mission, vision and strategy into results of projects and programs. The general scheme of the conceptual model, which was developed by the authors for the development of IPMA Delta[®].

Organizational competence in the management of projects, programs and portfolios (PP&R) is determined within 5 expert areas: Administration of PP&R, Management of PP&R, Human Resources,

Material Resources and Integration Processes, Structure of Culture.

Let the organizational competence will be determined by the five areas:

$$K = \langle k_1, k_2, k_3, k_4, k_5 \rangle.$$

Each are a contains a number of elements (Fig.1).

For example, the area of 'Administration of PP&P':

$$k_1 = \{G_{11}, G_{12}, G_{13}, G_{14}\}.$$

Thus, the estimation model of the area is formed by the R1 ratio and all of its elements. This relationship forms the convolution rule for evaluations of each competence element in the area. All the elements of organizational competence displayed in the context of the three axes (A): Strategic (S), Tactical (T) and Operating (O):

$$A = \langle S, T, O \rangle.$$

The generated three-dimensional space determines the trajectories for development of organizational competencies. Complete description of all elements of the organizational competences model is given in IPMA OCB[®] Standard.

In assessing of entrepreneurial potential (potential entrepreneurial energy) for a development project or program, the basic sources of G-organizational competence in the management of PP&P, investments, resources, applied creative technologies and leadership of key concerned parties should be taken into account. Each of them is determined by specific gravity (V_G) and the impact on the success (S_G). The parameter of influence on the success of development projects and programs is an integrated index, which is to be determined in expert way.

The level of the potential (initial) entrepreneurial energy is defined as:

$$E_i = \sum_{k=0}^G V_{ik} S_{ik}.$$

where $i = \overline{1,4}$.

Reproducible level of the reproducible entrepreneurial energy is determined basing on the following relationship:

$$K_r = \sum_{k=0}^6 V_{rk} S_{rk},$$

where $r = \overline{1,4}$.

Specific gravity and impact on the success of development projects, their catalysts and inhibitors are based on expert assessments, and processed on the basis of qualimetry; they give the total normalized result of entrepreneurial energy at each phase of the project.

It follows from the applied analogy and from the definition of the potential and kinetic (reproducible) entrepreneurial energy that their level must be greater than one within all phases and steps.

Given catalysts and inhibitors, level of entrepreneurial energy is defined as:

$$E_C = E_i + K_r + E^k + E^l,$$

where,

E^k - normalized level of influence of catalysts to the entrepreneurial energy;

E^l - normalized level of influence of inhibitors to entrepreneurial energy in the implementation of development projects.

5. CONCLUSION

1. The proposed classification of entrepreneurial energy organization allows creating basic terminology and models of successful projects and programs based on entrepreneurship.

2. The evaluation model of business model on the basis of the IPMA OCB® Standard allows assessing both the original and reproducible entrepreneurial energy of the organization.

REFERENCES

- Azarov M.Y, Yaroshenko F.O., Bushuyev S.D. (2011) *Innovative Mechanisms for Managing of Development Programs*. Kyiv: // 'Sammit Knyga', 564 pages. DOI: 10.13140/2.1.4925.4409
- Bushuyev S. D., Wagner R. (2014) *IPMA Delta and IPMA Organisational Competence Baseline (OCB): New approaches in the field of project management maturity*. International journal of managing projects in business. № 7(2). DOI 201410.1108/IJMPB-10-2013-0049
- International Competence Baseline IPMA ICB - IPMA Competence Baseline*. (2006) Version 3.0. IPMA Editorial Committee. - IPMA: 200 p.
- IPMA Organisational Competence Baseline (IPMA OCB)*. (2013) Version 1.0 – IPMA: 67p.
- Jaroshenko Y.F., Yaroshenko R.F.. (2010) *Model Driving Forces of Resistance Models in Management of Projects and Programs*. Kyiv:// 'Sammit Knyga', – 160 pages.
- Grachev M.V. *Entrepreneur in Today's Economy*. (1993)// Science and Economy. №4. pp. 69-81.
- Helfat, C.E. & Peteraf, M.A. (2003), *The dynamic resource-based view: capability lifecycles*, Strategic Management Journal, Vol. 24, pp. 997-1010.

SUPPORTING KNOWLEDGE CREATION AND SHARING IN PROJECT-ORIENTED ORGANIZATION

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Abstract: Economic development is increasingly focused on intangible assets that further implicate growing needs of knowledge acquisition and sharing and the growing importance of knowledge based service. On the other hand, changes in management perspectives and implementing of the strategy through projects consider projects as business ventures that add value. This paper presents literature review on knowledge management in project environment with specific focus on knowledge sharing process, relying on knowledge acquisition and creation of new knowledge. Paper also presents the results of empirical research conducted in Serbia, which showed that knowledge between projects is shared mostly using informal communication, meetings, expert's re-engagement.

Key words: Project, knowledge, sharing, project environment.

1. INTRODUCTION

Economic development is increasingly focused on intangible assets that further implicate growing needs of knowledge acquisition and sharing and the growing importance of knowledge based service. On the other hand, changes in management perspectives and implementing of the strategy through projects consider projects as business ventures that add value. Projects are characterized by a discontinuity in the work processes, uniformity of coverage, lower level working routines, short-term orientation and interdisciplinary in terms of internal and external experts. For this reason, the knowledge management in the project environment is very important. This paper discusses knowledge management in project environment with specific focus on knowledge creation and sharing process. There is an awareness of the fact that knowledge sharing between projects can create the significant base of organizational knowledge for future endeavors, and add value to future project and the performing organization. This paper's analysis literature on knowledge management in project environment, with specific focus on knowledge sharing process, relying on knowledge acquisition and creation of new knowledge. The existence and development of

the knowledge base in the organization has a significant effect on the strategic development of an organization.

2. THE NEED FOR EXPERTISE IN PROJECT-ORIENTED ORGANIZATIONS

Knowledge can be defined as a set of skills, experiences, information and the ability of individuals to apply it to solve problems. According to Gasik (2011) knowledge can be analyzed on two levels, or as micro-and macro-skills knowledge.

Micro-knowledge is part of the knowledge required to perform a single task (the method of determining certain types of software bugs, the name of persons who can perform some tasks are classic examples of such knowledge).

Macro-knowledge is knowledge of one person. An example of the formation of macro knowledge is the training of a team member in order to acquire knowledge for participation in the project. The formation of the project team, as a group of individuals with appropriate expertise for the execution of projects, is also an example of the process of project management knowledge at the project level. Implementation of the system of project

knowledge in the organization has a total impact on organizational knowledge. The development of global knowledge on project management is an example of the process by which this knowledge is made available to people worldwide. So, there are four categories of project knowledge (Gasik, 2011):

- individual macro-knowledge (knowledge possessed by one member of the team)
- macro-knowledge of the project team (who possesses knowledge of the project team)
- macro-organizational knowledge (knowledge that an organization owns), and
- global macro-knowledge (knowledge that possesses the world community of project managers).

Project knowledge is based on generally accepted knowledge in this field, certain publications, guidelines, based attitudes (body of knowledge). In addition, the organization itself provides the necessary knowledge for the realization of projects, giving the specification in terms of providing the necessary knowledge and using that knowledge. In this way, the knowledge of the organizational level transmitted at the project level. Specific knowledge for individual tasks or solving problems could shift from the individual project level. In the opposite direction, individual skills are transferred to the project level in order to use them at the project level. Furthermore, knowledge from the project level is transferred to the organizational level that could be used for future projects. Knowledge can then be transferred to the global level, if discover new problems, solutions and examples which contribute to general knowledge in the field of project management. In the next picture we can see a vertical flow of project knowledge.

Each project has different plans, results, problems and the level of performance it provides plenty of opportunities for learning. By integrating and sharing of such experiences between projects created significant organizational knowledge base of information to be used for future projects. According to Kotnour and Landaeta (2002) there are six key types of knowledge in project-oriented organization:

- Knowledge about customer's/investor's needs: knowledge of what creates the need for the project. This knowledge is used to facilitate the definition of the targets/specifications of products or services, including operating environment, current methods used, expected performances etc.
- Knowledge about technology: knowledge about potential technological solutions to improve project performances and be focused project needs.
- Knowledge about internal strengths and weaknesses: the knowledge of the current-used technology in the organization and existing processes, tools and competenciesto meet the project needs. It may be that the technology exist, but the project manager must be familiar with the existing knowledge of people who use it. The organization aims to link specific skills and enable their usage in certain processes.
- Knowledge of external features: knowledge of external organizations/individuals who may have knowledge, skills and techniques that are essential for the project. This knowledge can help to overcome internal shortcomings.
- Knowledge about potential partners: knowledge about potential partners and their needs. Partners may have a similar operational environment and specific needs in relation to the project. Partnership should be seen as a benefit or opportunity of increasing market opportunities of the project or reduce costs.
- Knowledge about stakeholders: knowledge of project stakeholders and their needs. Project organization needs to understand the needs of the stakeholders and to establish a relation strategy for themthem.

3. WHY DO WE NEED KNOWLEDGE MANAGEMENT IN PROJECT ENVIRONMENT?

Knowledge management in project-oriented organizations is a very complicated task, due

to the fact that the project teams are made up of people with different skills and to a certain period, often including people who have never worked together before. After completion of the project, the team is reformed and people return to their organizational units. This indicates that if the organization does not have a knowledge management system, knowledge gained during the project implementation is mainly lost. Although the project-oriented organizations are considered suitable for providing products adapted to the specific requirements, researches focused on knowledge creation in these organizations indicate the problem spotting new knowledge and knowledge sharing between projects (DeFilippi, 2001). Some authors point out the contradiction appearing in the organization that wants to achieve short-term project goals and long term goals of organizational learning (Bresnen, 2004). Ekstedt et al. (1999) note that a permanent organization, with long-term perspective, generally have mechanisms for learning, but the problem with out a project of intense organizational structure (ie. a temporary organization) is that they are:

- organizations oriented to the task and are not focused on learning and what
- individuals become capable and experienced, but often there is no mechanism or incentive to learn within the organization.

However, learning through projects is one of the best ways in which project-oriented organization interacts with its environment and changes in accordance with it. This means that knowledge of more or less successful projects is a vital part of the long-term competitiveness of the business (Schlichter, 2001; Williams et al., 2005). Knowledge management is recognized as a wide-spread mechanism to provide the right information to make decisions.

According to different authors (Cooper et al., 2002; Disterer, 2002; Gasik, 2011; Reich et al., 2012; Todorovic et al., 2015) procedures for the acquisition of knowledge and dissemination of lessons learned should be organized. In order to learn project-oriented organization have to create, share and apply knowledge. Members of the organization create new knowledge based on experience, using the existing procedures and methods for

solving problems in order to achieve positive results and avoid the negative results. Many organizations implement a process of knowledge management in order to: improve processes, achieve financial savings, generate more revenue, increase customer satisfaction, increase the competitiveness of (Ayman al., 2010). Research results presented in Hanisch and al. (2009) show the great potential of project management knowledge, which is reflected in savings in costs (3-5%).

One of the most recent papers in the field of knowledge management between projects confirms the hypothesis that an appropriate environment, including social and technological aspects, enable knowledge management process and has a significantly positive impact on documenting of project knowledge (Reich et al., 2012). The learning process can not exist in isolation from other processes, and organizational learning is impossible unless it is seen as a supplement to other processes. Sense (2007) highlights the following five factors that influence the creation of a learning environment: cognitive style, the relationship between the participants in the learning process, the hierarchical scale, knowledge management and situational context.

3.1. IMPACT OF KNOWLEDGE MANAGEMENT ON THE PERFORMANCE OF PROJECTS

Kang (2007) and Kotnour (2000) tested the hypothesis that the performance of the project in conjunction with strong elements of knowledge. PremaKotnour (2000) increased knowledge enables project team to repeat old mistakes, and to waste time in finding solutions to some problems that have already occurred. Learning within the project contributes knowledge transfer between projects, but only if there are existing routines, databases, information and knowledge in a form that allows knowledge to be transferred to other projects. Pinto (1999) states that the IT projects have a poor database of performances and continues with a reference to the need to start with a new project with lessons learned from previous project. An appropriate knowledge is the basic prerequisite for effective project management.

A continuous learning and improvement present the highest maturity level of project management in the organization (Kerzner, 2000). The same author emphasizes that without the summarized lessons learned, the company can quickly move to the lower level of maturity in project management. Most knowledge management strategies are usually focused on how to better utilize the knowledge that already exists within the organization, and then to create new knowledge. The ability of organizational learning reflects corporate intelligence quotient (Weijmars, 2001). From the above one can see a clear need to gather information about the achieved performance of the project in order to form a knowledge base that would improve the process of managing future projects and ensure better project results in the future.

3.2. KNOWLEDGE INTEGRATION IN PROJECT ENVIRONMENT

The integration of knowledge collected from various projects has its economic value, because the organizational competitiveness is affected by diversity and strategic value of specialized knowledge and also the organization's ability to integrate knowledge effectively. An organization's ability to integrate knowledge depends on the mode of communication and working procedures (routines) and the way in which implicit knowledge into explicit codified rules. On the efficiency of the process of integration of knowledge affects the existence and developed knowledge among the participants, coordination and organizational structure (Papke-Sields, Beise, & Quan, 2010). The greater scope of knowledge that should be integrated, the lower is the efficiency of knowledge integration. The greater the volume of knowledge requires better coordination, and organizations that do not have a lot of experience in this process becoming less efficient in this process. On the other hand, a larger scope of knowledge strengthens the competitiveness of organizations and reduces the chance for copying from other organization. Flexibility of the process of integration of knowledge depends on the organization's ability to reconfigure existing knowledge by promoting innovation (Love et al., 2005). Integrating

knowledge present the set of activities of team members that share individual knowledge and combine them to create new knowledge (Okhuysen & Eisenhardt, 2002). The core activities of any project-oriented organization is a coordination which is achieved through the active participation of individual specialists and managers. Such coordination can not be achieved without access to an adequate knowledge.

In many project there are multifunctional teams rather than functional teams. Multifunctional teams are formed under the assumption that they will combine specialized knowledge in different organizational units. However the way in which knowledge will be integrated remains often poorly explained. Multifunctional teams are typical for the following three situations: when the focus is on creativity and innovation, when you need to reach a consensus through community input, negotiation, or investigation and when it is necessary to manage strategic change. Prencipe (2001) based on the collection of data through interviews and questionnaires with projects from six organizations developed a schematic view of learning as an attempt to create a pattern for learning process between projects. First, the organization is divided into three categories: social projects where prevailing social processes and work with people; technical projects with clearly articulated processes and ICT projects. For each of the three project's categories the author developed a matrix that shows the mechanism for the accumulation of experience, knowledge articulation and codification of knowledge.

- A social approach emphasis the creation and sharing of tacit knowledge, based on experience through joint work on the project. Contacts face to face and via social media have great significance. Learning between projects has more informal character and involves sedimentation of new practices in the form of routine.
- A technical approach attach importance to the articulation process at all levels. Meetings are often organized in order to improve communication and knowledge transfer.

- For ICT projects efforts are focused on the codification and storage of knowledge developed during the execution of the project and its documentation in order to be used on other projects. These processes are aimed at creating and renewing formal procedures.

4. KNOWLEDGE CREATION IN PROJECT ENVIRONMENT

The ways of acquiring of organizational knowledge include: the usage of knowledge that already exists in the organization or gathering knowledge that exists outside the organization, instructions or direct transmission of knowledge from the people who own it, observation and notification of problem solving, brainstorming, protocol analysis e.g. experts are required to express their thoughts in solving problems aloud, nominal group technique, Delphi technique, etc. To acquire knowledge in project environment following steps need to be implemented: the usage of certain assets in order to collect information from people involved in the project; interpretation of information and draw conclusions based on the of experts knowledge and their judgment; the usage of those interpretations to form policies that represent the thinking of people who have experience of working on projects.

The process of sharing knowledge should enable not just a simple transfer of acquired information but transfer of knowledge to new users in their context and then move into knowledge. The process, which involves the adoption of new information and linking them with existing knowledge and experience, is a learning process. Learning and knowledge are separate but related processes in terms of learning to create knowledge, and expertise to influence the future of learning (Lyles & Easterby-Smith, 2003). The knowledge gained is not always completely and without any changes useful to the project. It can be either to extensive or too specific. In other words, it is necessary to adapt the requirements of a particular project. The process that enables this is the process of *knowledge creation*, based on existing knowledge gathered within and outside the organization, adapting it to the needs of the project.

Knowledge creation can be accessed through a variety of ways such as training, hiring external resources, recruiting people of different profiles in order to create fresh knowledge base. This is a question of innovation - effectively turning ideas into action. The challenge is not to lose creative ideas and allow them to flow wherever they can be used. Most often the difference between the old and new knowledge is not always clear. Innovation can often be drawn from the lessons of the past. The application of old knowledge almost always involves some adaptation and in the process creates new knowledge. In the end, the quality of knowledge does not depend on the fact whether it is old or new, but whether it is relevant.

5. KNOWLEDGE SHARING IN PROJECT ENVIRONMENT – EMPIRICAL RESEARCH

The knowledge sharing can be seen as a process of reconstruction of knowledge, not as a simple act of sending and receiving of organizational knowledge (Abou-Zeid, 2005). In other words, when we talk about the knowledge transfer, but without the creation of new knowledge without an existing organization, then we can talk just about information transfer (Boder, 2006).

Project managers today are faced with many challenges of project management specially with the need for fast decision making in selection of an appropriate project and how to make the best use of existing knowledge and information from previous projects in order to avoid waste of resources and achieve better results for further projects. The purpose of this research was to discover whether team members use a systematic approach to acquire and share knowledge between project. The authors created on line questionnaire that was distributed to more than 500 addresses. More than 100 questionnaires were collected from participants on project from different industries (construction, processing industry, metal industry, wood industry, trade, public sector, healthcare, architecture, design, etc.)

The questions were oriented on how they treat the problems, risk and changes on their project/is there any documented file on those

issues; do they always create a final report on completed project or this action is not a common practice; and what are the most frequently used mechanism for knowledge sharing: project files/reports or less formal communication.

Results showed that respondents use mostly informal mechanisms to share knowledge between projects. Around 2/3 of respondents answer that they have meetings to discuss project risks and problems but that they don't have a procedure to document those issues but only 1/3 of respondents answered that they document all project problems and risks. Comparing with the conclusion of other papers and studies we can conclude that the evidence of those project issues present a significant source of project knowledge. According to those results, the practice of acquiring knowledge by evidencing project issues is not particularly present.

Analysing the questions that aim to investigate the level of regulation of project management processes, we can conclude that project planning, monitoring, control and reporting are regulated in a very high level. Still project initiation and selection are in the most of partially or even not regulated. The respondents were offered the scale of 1 to 5 to assess the degree of the regulation of individual sub-processes of project management process, the average score for the processes planning, monitoring, control and reporting was ranged between 3 and 4 (on scale from 1 to 5), while the processes of project initiation and selection were assessed with the lower grades (average grades ranging from 3 to 3.5). Despite the regulation of reporting process, the final report on completed project is always performed in only 34% of cases, and in more than 50% final report is performed only if management of the performing organization or project manager request it. An arising question is do project managers and their teams actually use those documented project issues and reports. From the perception of the respondent's knowledge between projects is shared mostly using informal communication, meetings, expert's re-engagement. Only 24% of them said that they use files/reports from previous projects to acquire information and knowledge.

6. CONCLUSION

Based on the above presented facts, we conclude that knowledge management in a project environment can have a positive impact on the performance of the future project and thus the performance of the organization that realized their business through projects. Project knowledge is created within the framework of learning and learning from other projects. However, to knowledge management in the project environment were effective and efficient, this process should be integrated with other processes, project management.

Through literature review it can be concluded that the key factors of influence on knowledge sharing process in project environment are: organizational culture, organizational structure, stakeholder support, and the level of coordination of this process along with other processes in project. Literature points on significance of knowledge sharing between projects for organizational knowledge. Literature also shows that there are different mechanisms to acquire, articulate and codify knowledge between projects in accordance to project characteristics. However, in the practice there is an evidence of knowledge sharing using mostly informal ways instead of formal processes. It is not doubtful that knowledge can and should be shared using informal ways and that benefits of tacit knowledge can be achieved, but the question is how much informations and knowledge are passed if there is no formal evidence of project realization (problems, risks, changes and other issues, compliation etc.) and the usage of project history files for future projects.

ACKNOWLEDGEMENTS

This paper is a result of Strategic research and development project 179081 "Exploring strategic management modern trends of the application of specialized management disciplines in the function of the competitiveness of Serbian economy", founded by Ministry of Education, Science and Technological Development, Republic of Serbia.

LITERATURE

- Abou-Zeid, E. (2005). A culturally aware model of inter-organizational knowledge transfer. *Knowledge Management Research & Practice*, 3 (3), 146-155.
- Ajman, M., Helo, P. & Kekale, T. (2010). Critical factors for knowledge management in project business. *Journal of Knowledge Management*, 14(1), pp. 156-168
- Arthur, M. B., DeFillippi, R. J., & Jones, C. (2001). Project-based learning as the interplay of career and company non-financial capital. *Management Learning*, 32, 99-117.
- Berends, H. (2005). Exploring knowledge sharing: moves, problem solving and justification. *Knowledge Management Research & Practice*, 3 (2), 97-105.
- Boder, A. (2006). Collective intelligence: a keystone in knowledge management. *Journal of Knowledge Management*, 10 (1), 81-93.
- Brady, T., & Davies, A. (2004). Building project capabilities: From exploratory to exploitative. *learning*, 25, 1601-1622.
- Bresnen, M., Goussevskaia, A. & Swan, J. (2004). Embedding new management knowledge in project-based organizations, *Organization Studies*, Vol. 25, pp. 1535-1555
- Brooks, N., Morton, S., Dainty, A., & Burns, N. (2006). Social processes, patterns and practices and project knowledge management: A theoretical framework and an empirical investigation. *International Journal of Project Management*, 24, 474-482.
- Cook, S., & Brown, J. (1999). Bridging epistemologies: the generative dance between organizational knowledge and organizational knowing. *Organization Science*, 10 (4), 381-400.
- Cooper, K. G., Lyneis, J. M., & Bryant, B. J. (2002). Learning to learn, from past to future. *International Journal of Project Management*, 20, 213-219.
- Davenport, T., De Long, D., & Beers, M. (1998). Successful Knowledge Management Projects. *Sloan Management Review*, 43-57.
- DeFilippi, R. (2001). Project based learning, reflective practices and learning outcomes. *Management Learning*, 32(1), pp. 5-10
- Desouza, C., & Evaristo, R. (2006). Project management office: A case of knowledge-based archetypes. *International Journal of Information Management*, 26, 414-423.
- Disterer, G., Management of project knowledge and experiences, *Journal of Knowledge Management*, 2002, Vol. 6, pp. 512-520
- Grant, R. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109-122.
- Hanisch, B., Lindner, F., Mueller, A. & Wald, A. (2009). Knowledge management in project environments, *Journal of Knowledge Management*, 13(4), pp. 148-160
- Kang, J. (2007). Testing impact of knowledge characteristics and relationship ties on project performance, *Journal of Knowledge Management*, 11(3), pp. 126 - 144
- Kerzner, H. (2000). *Applied project management: best practices on*, Wiley, New York.
- Kotnour, T. (2000). Organizational learning practices in the project management environment, *International Journal of Quality and Reliability Management*, Vol. 17, pp. 393-406
- Kotnour, T. & Landaeta, R. (2002). *Developing a Theory of Knowledge Management Across Projects*, IIE Annual Conference. Proceedings, 1
- Lindquist, L., Soderlund, J., & Frohm, C. (2002). *Knowledge Management in Technology and Project Based Firms*. East Horsley, UK: EuroProjex Ltd.
- Love, E., Fong, S., & Irani, Z. (2005). *Management of Knowledge in Project Environment*. Burlington: Elsevier Ltd.
- Lyles, M., & Easterby-Smith, M. (2003). *The Blackwell Handbook of Organizational Learning and Knowledge Management*. Oxford: Blackwell Publishing.
- McDermott, R., & O'Dell, C. (2001). Overcoming cultural barriers to sharing

- knowledge. *Journal of Knowledge Management*, 5 (1), 76-85.
- Okhuysen, G., & Eisenhardt, K. (2002). Integrating knowledge in groups: how formal interventions enable flexibility. *Organization Science*, 13 (4), 370-386.
- Papke-Sields, E., Beise, C., & Quan, J. (2010). Do project managers practice what they preach, and does it matter to project success? *International Journal of Project Management*, 28, 650-662.
- Petrović, D. (2012). Analiza procesa sticanja i transfere projektnog znanja. *XVI Internacionalni simpozijum iz projektnog menadžmenta "U susret ekonomiji znanja - upravljanje projektima znanja"* (pp. 24-31). Zlatibor: YUPMA.
- Prencipe, A. T. (2001). Inter-project learning: processes and outcomes of knowledge codification in project-based firms. *Research Policy*, 30, 1373-1394.
- Reich, H. G., & Sauer, C. (2012). Knowledge management and project-based knowledge in it projects: A model and preliminary empirical results. *International Journal of Project Management*, 30, 663-674.
- Sense, A. (2003b). A model of the politics of project leader learning. *International Journal of Project Management*, 21, 107-114.
- Sense, A. (2007). Structuring the project environment for learning. *International Journal of Project Management*, 25, 405-412.
- Shapiro, G. (1999). *Inter-Project Knowledge Capture and Transfer: An Overview of Definitions, Tools and Practices*. Complex Product System Innovation Center.
- Schlichter, J. (2001). *PMI's organizational project management maturity model: emerging standards*, Upper Darby, PA, Project Management Institute
- Swap, W., Leonard, D., Shields, M., & Abrams, L. (2001). Using mentoring and storytelling to transfer knowledge in the workplace. *Journal of Management Information Systems*, 18 (1), 95-114.
- Todorović, M. L., Petrović, D. Č., Mihić, M. M., Obradović, V. L., & Bushuyev, S. D. (2015). Project success analysis framework: A knowledge-based approach in project management. *International Journal of Project Management*, 33(4), 772-783.
- Weiejmars, R. (2001). *Building Corporate IQ: Moving the Energy Business from Smart to Genius*, Delft University of Technology, Netherlands
- Williams, T., Ackermann, F., Eden, C. & Howick, S. (2005). Learning from project failure, *Management of Knowledge in Project Environments*, Elsevier Limited, pp. 219-236

NEW PUBLIC MANAGEMENT AND SELECTION OF PUBLIC SECTOR PROJECTS

Jasmina Debeljak Maljković

Abstract: This paper explores the application of new public management (NPM) concepts and doctrines, in particular public accountability, performance measurement, transparency and openness, in the process of transparent and non-discriminatory selection of budgetary-funded projects and improvement of management of government grant programs, using the example of co-financing of projects of public interest in the area of public information – a program implemented by the Ministry of Culture and Information of the Republic of Serbia. NPM is a body of doctrinal beliefs, ideas, concepts, practices, and market-type mechanisms aimed at making government more business-like – improving efficiency, quality services, and making government be more responsive toward their citizens-clients. The paper proposes a new systematic approach to selection of public sector projects based on the theoretical research and empirical analysis of earlier practice of this government sponsored grant program, that will enable more efficient and effective management of the grant program and implementation of the awarded contracts, enhance public accountability and ensure adherence to strategic plans and commitment to the Ministry and priorities set to achieve strategic goals.

Key words: new public management, public sector, selection of projects, public interest, public information, transparency

1. INTRODUCTION

New Public Management (NPM) is a general theory or administrative philosophy that the public sector can be improved by the importation of business concepts, techniques, and values (Pollit&Bouckaert 2001). A paradigmatic break from the traditional model of public administration (Hood, 1991) spread among many countries in the 1980s and 1990s, mostly in the UK, New Zealand, Scandinavia, and North America. This term covers a wide range of public sector reforms aimed at making government more business-like – improving efficiency, quality services, and making government be more responsive toward their citizens-clients. It comprises a wide range of ideas, concepts, practices, market-type mechanisms, and a body of doctrinal beliefs whose components were formulated by Christopher Hood (1991) in an article *A Public Management for All Seasons*.

The original idea of NPM was a shift from the rigid, wasteful, centralized bureaucracies of the industrial era to the more flexible, entrepreneurial, decentralized government

(Osborne, Gaebler, 1992), that will be more market and results-orientated and customer driven.

In the last 15-20 years, as the governments appeared to lose trust, the public management reforms shifted toward an improvement of accountability and transparency of the work of public agencies, performance measurement, e-government, networks and partnerships in a bid to offer the public more transparent and responsive services. Public accountability has, hence, strengthened as a gate keeper of the ethical behaviour of public servants and organizations (Monfardini, 2010). Performance measurement has also been one of the main slogans of NPM, as it enables a government to document its achievement of the set programs' and policies' objectives.

Development and implementation of performance measurement system and reporting on performance targets are seen in a wider context of public accountability of public sector agencies (Dubnick, Frederickson, 2011). The reason for the need to measure performances lies in the

accountability of public officials that the budgetary funds are spent in line with procedures and contracts, that the resources are efficiently used, as well as that they are used for intended purpose (Flynn, 2015). The performance data are used not only for managerial decisions but are reported to legislatures and the public (Pollitt & Bouchaert, 2001 & Newcomer, 2001). Reporting of program performance reflects the demands of citizens and their elected officials for more transparent, entrepreneurial and efficient government (Osborne & Gaebler, 1992).

This paper explores the application of NPM concepts, in particular public accountability, performance measurement, transparency and openness, in the process of transparent and non-discriminatory selection of budgetary-funded projects and improvement of management of government grant programs, using the example of co-financing of projects of public interest in the area of public information – a program implemented by the Ministry of Culture and Information of the Republic of Serbia (“the Ministry”). Pursuant to the Law on Public Information and Media of the Republic of Serbia¹ (“the Law”), the authority responsible for the public information affairs of the Republic of Serbia, Autonomous Province or a local self-government unit allocates funds for realizing public interest in the public information sector on the basis of public competitions in the form of open calls for proposals in accordance with the principles of non-discrimination and the rules for state aid allocation and protection of competition. However, the first year of the implementation of the Law (2015) demonstrated challenges in the management of this government grant program. Professional media organizations’ critics raised the issues of non-transparency of procedures and a discriminatory process of selection and award of public funds, particularly on the local level, as well as a lack of analysis of effects of the co-financing program which would show whether the budgetary funds have been used in the most effective way.

¹ Official Gazette of the Republic of Serbia, no. 83/14

2. RESEARCH OBJECTIVES AND METHODOLOGY

The aim of the paper is to explore the application of NPM concepts and principles in the improvement of management of a program of co-financing projects of public interest in the area of public information based on the analysis of the earlier practice of this government sponsored grant program. The paper proposes a new systematic approach to an efficient and effective process of evaluation and selection of projects of public interest to be funded by budgetary funds through a new grant program management framework and standardization of rules and procedures.

The empirical part of the research refers to the analysis of co-financing program of projects of public interest, managed by the Sector for Information of the Ministry, i.e. the process of management of calls for project proposals, including the design of calls and adhering documentation, managing the evaluation process, award and implementation of the grant contracts.

Methodology tools applied are the following: a) analysis of relevant literature on new public management, including modalities and good international practices in management of calls and implementation of grants, b) analysis of legal documentation: Law on Public Information and Media, Rulebook on co-funding the projects for realization of the public interest in the field of public information (“Rulebook”), Ministry’s internal rulebooks, Budget plan 2015-2017, Call for Proposals for co-financing media projects of public interest for 2015 and all adhering documents – evaluation forms, application and reporting documents; c) consultation and coaching sessions with the Group for exercise and enhancement of rights to public information and media pluralism (“the Group”), within Sector for Information of the Ministry, assigned with tasks of managing the calls for media projects co-financing and implementation of the grants; d) review of a sample of 25 projects supported through the 2015 Call for Proposals on co-funding the projects for realization of the public interest in the field of public information to check the

compliance of produced media content with the contracted projects and Call's objectives; d) design of a new framework for the management of co-financing of media projects of public interest program.

3. RESEARCH FRAMEWORK

Pursuant to Law on Public Information and Media of the Republic of Serbia and in accordance with the Law on the Budget of the Republic of Serbia (passed each year) and the Law on State Aid Control², the authority responsible for the public information affairs of the Republic of Serbia, Autonomous Province or a local self-government unit allocates funds through public competitions for co-financing of projects of public interest in the area of public information. Under the program activity 0001 (as defined in the Budget plan 2015-1017) "Support to realization of public interest in the field of public information, "the Ministry awards funds to projects of public interest in the area of public information through open calls for proposals which represents *de minimis* state aid pursuant to articles 95-97 of Regulation on Rules for State Aid Granting³.

The overall level of state aid in Serbia from budgetary resources has increased over the last several years. In 2014 the total amount of granted state aid amounted to RSD 106,074 million, i.e. EUR 904.0 million, which is by 21% more in comparison to total state aid granted in 2012 (RSD 88,009 million or EUR 778.0 million), that is, by 30% more in comparison with the same parameter for 2013 (RSD 81,451 million, i.e. EUR 720.0 million).⁴ The Ministry awarded RSD 261,782⁵ millions in co-financing of media projects of public interest in 2015, 2.84 times more compared to 2014 when it was awarded RSD 92 million in 2014. For such large scale

programs, it is recommendable to comprehensively assess the effects of this government intervention and produce economic justification for the use of public funds and continuation of these measures, which is not the practice of the Ministry. Analysis of the implementation of this co-financing program in the previous period shows that apart from certain improvements in the administrative management of the program, prompted by the new Law and Rulebook, the legacy of earlier and previous governance practice is palpable, and thus improvements are needed. Public management is still generally regarded as a process through which policies are formulated, resources allocated, and programs implemented as a prevailing principle, as defined by Barzelay (2001), rather than the policy issue of its own.

Application of the concept of results-orientated management, which includes planning, implementing and monitoring the outcomes of the programs by performance measurement system based on a set of performance indicators reflecting the program, policy and government strategic needs, is still not in use.

The Budget System Law of the Republic of Serbia⁶ mandates the introduction of program budgeting across all levels of government as of 1 January 2015. This budgeting method provides a comprehensive and integrated framework for longer-term planning and prioritizing of public finances, implementing and monitoring the progress of public policies, while ensuring efficient, effective and transparent allocation and use of public resources in accordance with the selected public policies, because it presents government finances in a way that enables better measurement and assessment of the benefits and costs of how government funds are used.

Co-financing of projects of public interest in the area of public information program was reviewed in the framework of the introduction

²Official Gazette of the Republic of Serbia, No. 51/09

³Official Gazette of the Republic of Serbia, no. 13/2010, 100/2011, 91/2012, 37/2013, 97/2013 and 119/14

⁴ Source: Commission for State Aid Control of RS; [Report on State Aid Granted in the Republic of Serbia in 2014](#)

⁵ Source: Ministry of Culture and Information

⁶Official Gazette of the Republic of Serbia No. 54/2009, 73/2010, 101/2010, 101/2011, 93/2012, 62/2013, 63/2013 - corr 108/2013

of program budgeting and the novelties that the public administration reform brings, including the project management as a prevailing tool, methodology and concept of conducive government programs and projects.

The introduction of performance-oriented budgeting obligated the Ministry (as a budget beneficiary) to design their activities by structuring them in programs, program activities and projects, and developing performance indicators, which show the results achieved and measure the extent to which objectives have been met. However, based on the budget plan (2015-2017) set indicators reflect the administrative activities (number of grants) rather than measuring the achievement of longer term results of the program. Inputs and outputs have been formulated and some intermediary results, but not the final outcomes.

The program budgeting model focuses on measuring the performance, which the Ministry should use to assess the effectiveness and efficiency of public spending and determine the budgetary priorities for mid-term and long-term planning. With that in mind, the Ministry should revisit the budget plan and revise the performance indicators by:

- a) defining the problems that are being addressed by state aid;
- b) clearly formulating objectives, scope and nature of the grant program;
- c) specifying anticipated results and mechanisms through which the intervention is expected to help achieve them, including the quality of produced media content and the effects on and the level of satisfaction of the final beneficiaries (citizens) in light of their right to be objectively and timely informed.

The Ministry should also measure the citizens' trust in the state institutions, applying the principle of government accountability to citizens (political and social accountability).

The organizational culture of public sector organizations is still focussed on compliance with rules and procedures. The shift toward result-orientated program management is vital that will determine the success of on-going public sector reforms.

4. EMPIRICAL ANALYSIS AND FINDINGS

The empirical part of the analysis was to review a sample of 25 projects awarded a grant within the 2015 Call for Proposals on co-funding the projects of public interest in the field of public information and assess the degree of success of the implementation of projects, i.e. to determine whether the grant beneficiaries produced the contracted media outputs as per project proposals, and adhered to all provisions of the grant contracts. The review also examined the level of achievement of anticipated project objectives and accomplishment of results. The analysis entailed the review of 25 projects based on project applications, grant contracts, final reports and produced media content. The Ministry launched six calls in 2015, but a sample of 25 projects was a part of the Call for Proposals on co-funding the projects for the realization of the public interest in the field of public information (the "Call").

Within the Call, a total of 161 organizations were awarded a grant for production of a variety of media outputs as follows: 36 print media, 27 TV stations, 36 radio stations, 37 production houses, and 25 on-line media. Fifty-one organizations were Belgrade-based, while others were across Serbia, thus ensuring an even geographical distribution. Projects were contracted for the duration of 6-8 months in amounts ranging from 72,000 RSD to 4,278,000 RSD. The media production was very diverse regarding topics and genre: culture, education, children's program, informative, documentary, TV short programs, TV and news features, radio interviews and films. Up to 15 January 2016, which was the deadline for submission of final reports, a total of 92 organizations submitted their reports. The Ministry approved six addenda to contracts for the extension of the duration of projects; while two projects that were approved for financing could not receive the funds that were allotted to them because the implementers' bank accounts were frozen in the meantime, due to unrelated problems they were facing.

Based on the reviewed documentation (a sample of five organizations for each type of

media: print, TV, radio, production houses and on-line) an evident discrepancy between the quality of project proposals and reports on implemented project activities had been noted. Compared to the applications, which were correctly written, the reports were short, insufficient and lacking basic details on project implementation and achieved objectives and results, as well as dissemination of produced media deliverables. As the report could not verify that organizations produced the media content as contracted, the produced outputs had to be reviewed to confirm its coherence with the proposals and contract requirements.

Produced media content was diverse in form, genre and quality and sometimes disproportionate vis-à-vis awarded funds. The media outputs ranged from shorter TV forms and 2-3 minute radio shows to half-an-hour documentaries, from studio programs with only an anchorman with no statements or field clips to very complex, investigative journalism pieces with lots of interviews, statements, and archives material.

Topics and issues that the grantees were treating in the media production were relevant to the overall objectives of the Call and the Ministry's program of co-funding media projects of public interest. Topics that were most frequently treated were: environment protection, children's rights, gender issues, and protection of cultural heritage; however other topics were also investigated, such as political party employment in public administration, the status of asylum seekers in Serbia, and economic potentials of agriculture production. It has been noted that a number of organizations failed to understand and inadequately justify the relevance of their projects in terms of promoting public interest in the sphere of public information, and their descriptions were sometimes reduced to coping verbatim the provisions of Article 1 of the Law on Information and Media.

General remarks are that grantees implemented their projects in line with contracts and produced media outputs according to their project proposals, but the quality of their production, the extent of

accomplishment of objectives, impact on the target groups, as well as dissemination of media deliverables is uneven. In addition, the quality of reports, including the presentation of the media outputs, differed from grantee to grantee, and in some cases was incomplete.

Further, the short duration of the grant contracts and limited resources available affected the implementation of the projects in the contracted timeframe. The fact that only 59% of grantees submitted final reports on time indicates the insufficient capacities of awarded organizations to manage projects, which could have been addressed in the project assessment phase through selection criteria.

A huge number of awarded projects (over 400 in six Calls) implemented in a short period of time (up to 8 months), an unfocused approach toward thematic areas, and incoherent quality of media content, as well as non-understanding of the importance of media content serving a public interest in the public information sphere, were the main features of the media co-funded program. The Ministry should modify the approach used in planning and designing the calls, and focus more on supporting investigative journalism and innovative approaches, prioritize certain themes thus focusing the program objectives, and award contracts to highly-professional and financially-viable organizations.

Other findings of the analysis of the management of the calls shows the following: calls are designed and launched based on the relevant Law and Rulebook, without annual grant program plans that would entail formulation of objectives, thematic priorities, expected results, scope and complexity of the program, and lessons learnt from previous calls, as the Ministry does not conduct monitoring and evaluation of the effects of the grant program. Selection and award criteria are not specific and the decisions on the award were not detailed and well-substantiated, which affected impartiality and fairness of the decision. Decisions on the award of funding are not sufficiently elaborated, which cast a shadow on the application of uniformity and consistency of the evaluation process, and the

information on the awards (supported projects) was not fully transparent, as well as the information on the effects of the program. The Ministry has to demonstrate that award decisions are reached in an equitable and transparent way and that they are cost effective. It would imply that well-corroborated and rationale decisions for the support of projects ensure the application of evaluation criteria in an equitable manner.

Monitoring and evaluation of the contracted projects are not done, which results in there being no control over how project implementation is regulated, and no assessment of efficiency and effectiveness of the media co-funding program, as well as the quality of produced media content and its impact, is being done.

Transparency of the selection and award process and accountability for public funds spending is of crucial importance for the preservation of public trust in the integrity of decisions and implementation of government programs and policies. The best way to achieve this is to maintain full and accurate records of the whole grant management process. Unfortunately, there is no electronic database of earlier awarded contracts that would allow someone to retrieve the information and track the implementation of awarded contracts, and that can later be used for risk management, and as a source of information for analysis and evaluation, as well as reporting.

5. RECOMMENDATIONS

Grants and other types of state funding are designed to support governments in achieving strategic objectives congruent with government policies. When designing such programs, public sector organizations have an obligation to deliver program benefits in an efficient, effective and economical manner to beneficiaries. In order to comprehensively and more effectively and efficiently manage the project co-financing program, it is of utmost importance to systematize and standardize rules and procedures, that will ensure spending of the budgetary funds on support to the media projects of public interest instead of direct financing of the media, in a transparent and

non-discriminatory manner that does not lead to distortions of the competition on the market. As state aid and other government subsidies to commercial / profit making organizations can distort the free functioning of the market and give financial competitive advantage to other actors in the market (Murschetz, 2013), aid allocations should rely on three principles (according to Guillaumont, 2000): i) Effectiveness – aid should be allocated in such a way it can contribute effectively to the attainment of set goals; ii) Equity – aid should be allocated in an equitable manner; and iii) Transparency – with clearly defined allocation criteria and understandable rules and procedures on the award.

In order to archive the above principles, one of the preconditions is a formulation and public disclosure of clear, non-discriminatory, measurable and specific selection and award criteria. Unlike the selection process in profit-making companies, where the selection criteria are based on assessment for greater profit, in the public sector, the projects are selected based on positive effects they may have on citizens and the public at large. That is why the selection and award criteria (evaluation criteria) have to be specific, measurable, and relevant for the scope and complexity of the grant program, and their consistent application will allow applicants equitable access to budgetary funding.

Standardization and systematization of grant management rules and procedures and design of uniformed documents supports better efficiency of program management control of the resulting achievement. This paper proposes a new framework for government grant program management consisting of five phases (figure 1): i) formulation of government strategic objectives and development of sectorial strategies and mid-terms plans; ii) grant program design; iii) administration of grant program; iv) evaluation and analysis; and v) reporting. This structure will enable more efficient and effective management of the grant program and implementation of the awarded contracts, and ensure adherence to strategic plans and commitment to the Ministry and priorities set to achieve strategic goals.

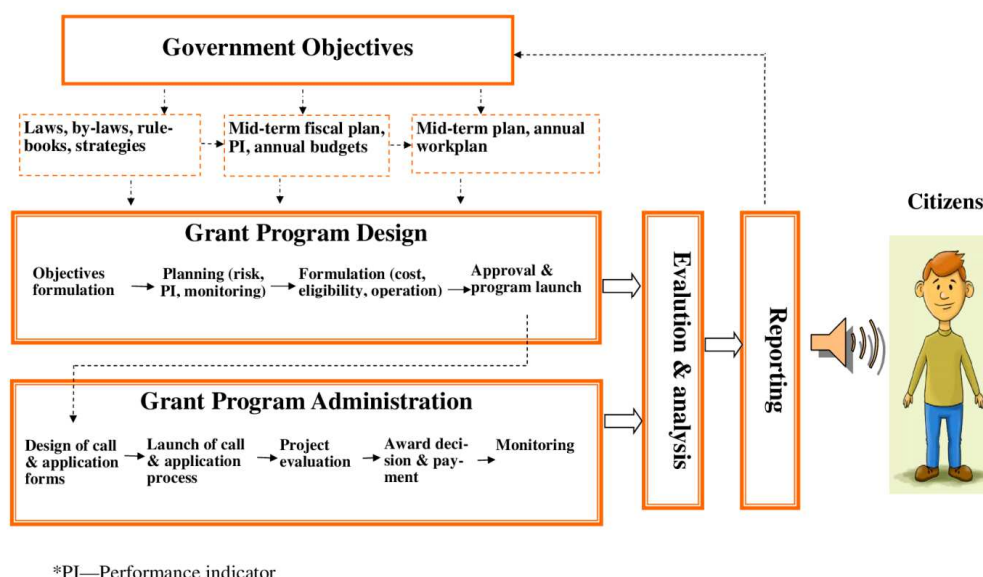


Figure 1: Government grant program management framework proposal

Based on the above analysis, the Ministry should redesign the performance measurement system, restructure planning and design of the calls, improve transparency of selection and award process, standardize procedures and upgrade the call's documents. Further, it should introduce monitoring of grants and evaluation of effects of the program, and based on analysis and lessons learned thereof suggest corrective measures inclusive in the future design of the program. Given that the human resources and time limitations are restrictive factors when it comes to management of such a high number of proposals, that would include monitoring and evaluation efforts, these services should be outsourced to independent media professionals in order to comply with the principles of objectivity, impartiality, integrity (from the standpoint of planning and implementation), credibility of findings, and usability of findings and recommendations for decision-making and future design of the program.

Public sector organizations are accountable to the public through Parliament for the use of public funds. That is why it is important that all processes and decisions regarding the awarding of budget funds should be well kept and documented. The Ministry should

provide evidence that decisions on the award of budget funds are equitable, transparent and cost effective. It would mean that decisions on providing support for projects must be well corroborated, which would demonstrate the equitable and consistent application of evaluation criteria. And finally, reporting on the program performances is significant for a demonstration of public sector accountability (political and social), transparency of their work, as a catalyst for improvement of the effectiveness of the government programs and strengthening citizens' trust in the quality of public services.

6. CONCLUSION

The organizational culture of public-sector organizations is still focused on compliance with rules and procedures. The shift toward result-orientated program management, promoted by the recent introduction of the program budgeting model, is vital to determining the success of on-going public sector reforms. The development performance measurement system based on a set of performance indicators reflecting the program, policy and government strategic needs, and its implementation still needs improvement.

When designing a grant program for the award of budget funds, public-sector organizations have an obligation to deliver program benefits in an efficient, effective and economical manner to beneficiaries. In order to comprehensively and more effectively and efficiently manage the co-financing project of public interest in the area of public information program, and ensure the funds are allocated in an effective, equitable and transparent manner, it is of utmost importance to systematize and standardize rules and procedures and base award decisions on the application of specific, measurable and transparent evaluation criteria, that will ensure spending of the budgetary funds on support to the media projects of public interest instead of direct financing of the media, in a transparent and non-discriminatory manner that does not lead to distortions of competition on the market.

REFERENCES

- Barzelay, M. (2001). *The New Public Management, Improving Research and Policy Dialogue*. US: University of California Press & Russell, Safe Foundation.
- Bovens, M., & Schillemans, T., & Goodine E. R. (2011). *The Oxford Handbook of Public Accountability*. Oxford: Oxford University Press.
- Dubnick, M. J., & Frederickson, H. G. (2011). *Public Accountability: Performance Measurement, the Extended State, and the Search for Trust*. National Academy of Public Administration/Kettering Foundation.
- Lynn, No. (2005). *Public Sector Management*. Sage Publication.
- Guillaumont, P. (2008). *Adapting Aid Allocation Criteria to Development Goals*, an essay for the 2008 Development Cooperation Forum United Nations Economic and Social Council.
- Hood, C. (1991). *A Public Management for All Seasons*. Public Administration, Vol. 69, Issue 1, 3–19.
- Murschetz, C. P. (2013). *State Aid for Newspapers: Theories, Cases, Actions*. Berlin, Heidelberg: Springer Verlag.
- Monfardini, P. (2010). *Accountability in the "New Public Sector": A comparative case study*. International Journal of Public Sector Management, Vol. 23, Iss: 7, 632 – 646.
- Newcomer, E. K. (2001). *Measuring Government Performance*. Pp. 321-347 in Handbook of Public Management Practice and Reform. Marcel Dekker.
- Osborne, D., and Gaebler, T. (1992). *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. Addison-Wesley, Reading, Mass.
- Obradovic, V., & Petrovic, D., & Mitorić, Z., & Mihić, M. (2015): *Strategic Performance Management*, Belgrade (Authorised script)
- Pollitt, C. & Bouckaert, G. (2011): *Public Management Reform, A Comparative Analysis - New Public Management, Governance and Neo Weberian State*. Oxford University Press.
- Vujovic, D. (2012): *Designing performance Indicators for improved budget program performance in Serbia. Study on Effective Use of Performance Indicators in Public Sector Budgeting and Planning*. USAID Business Enabling Project.
- Financial Accountability Handbook*, Queensland Government, Australian <https://www.treasury.qld.gov.au>

CLOUD COMPUTING AS A SOURCE OF COMPETITIVE ADVANTAGE IN THE GLOBAL MARKET

Miloš Jovanović, Nina Đoković

Abstract: Adapting a large enterprise to exploit new business opportunities is not an easy job. Business world has been undergoing tremendous changes over the past few decades and the impact of information and communication technologies on modern business is absolutely undeniable. While it is a source of unlimited number of opportunities for progress, it also comes with some disadvantages. This paper consists of three working hypotheses, discussion, and review and it is focused on strategic transformation of international business models using cloud computing, big data, advanced analytics, and other sophisticated data-scientific technologies. First hypothesis in this paper is that cloud computing is a significant source of competitive advantage for companies operating in the international business markets. Second hypothesis is that implementation of cloud technology has certain challenges and requires strategic approach. Third hypothesis is that advantages of cloud technology and its implementation overcome its disadvantages. From a global industry standpoint, addressing challenges of transformation, competitive and innovative digital markets continue to be a delicate matter, which we analysed - and concluded that future progress on a global scale will be deeply influenced by new practical and sophisticated IT solutions, alongside with expressed desire to change approaches at all levels.

Key words: cloud computing, competitiveness, international business, strategic management, global market, information technology

1. INTRODUCTION

Business world has been undergoing tremendous changes over the past few decades and even business models have acknowledged them (Asnina, 2013). Companies are facing growing number of challenges operating in an environment which is no longer oriented towards profit exclusively, but there is a growing demand for a sustainable business (Boons, Montalvo, Quist and Wagner 2013). In addition to this, globalization and economic recession are exerting immense and profound influence over all industries (Kahler, 2013). The main consequence of all these factors is that business environment is now extremely dynamic and complex more than ever. Modern business environment is characterized by very fierce competition and almost constant fluctuations. Globalization brought numerous changes into the dynamics of the business environment. The same can be stated for the fast development of technology. Due

to these factors, it became harder and harder to stay competitive in the market and successfully serve target groups.

Organisations today find themselves in an environment which is highly competitive and characterized by complex relationships between business entities. It is a worldwide trend that employees are crossing national borders and that services and products are offered in international markets. On top of the challenges posed by constant fluctuations, companies also need to adjust their methods and corporate cultures, type of contracts and make legal adjustments according to the national market they operate in (Fischer et al., 2005).

More and more organisations are broadly utilizing outsourcing in order to stay concentrated on their core competences (Johnson, 2006). One essential after-effect of the globalization is more noticeable versatility

in worldwide capital and work markets. This makes an opener entryway overall for businesses due to more potential customers. Regardless, there is likewise more competition, as national associations need to battle with remote associations for customers as well.

Business environment is changing and evolving over the time. Since the end of 20th century, information technology has been discussed as one of the core resources in business (Powell and Dent-Micallef, 1997). Lately, cloud computing has been recognized as one of the products of technology with an enormous potential to influence industries, stakeholders and business processes. It is often stated that cloud technology represents a “fundamental change in the way information technology (IT) services are invented, developed, deployed, scaled, updated, maintained and paid for” (Marston, Li, Bandyopadhyay, Ghalsasi& Zhang, 2011).

Businesses prosper from developing this segment. Hierarchical structure adapts to these changes by reorganizing divisions, altering position prerequisites or including and evacuating job occupancies. Organisations have an option to diversify their structure by adding new divisions in order to enter new market segments.

Therefore, this paper is going to analyse the following three hypotheses:

1. Cloud computing is a significant source of competitive advantage for companies operating in the international business markets.
2. Implementation of cloud technology has certain challenges and requires strategic approach.
3. Advantages of cloud technology and its implementation overcome its disadvantages.

2. CLOUD TECHNOLOGY

2.1 Definition of cloud technology

Term “cloud” is today generally utilized as a part of request to stretch how effectively information can be accessed and controlled. It turned into some sort of an equivalent word for accessibility, pace and effortlessness of

dealing with information. With a specific end goal to proceed further dialog about cloud facilitating, it is important to characterize it first. National Institute of Standards and Technology offers the following definition of cloud computing (Csrc.nist.gov, 2015):

“Cloud computing is a model for enabling ubiquitous, 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. This cloud model is composed of five essential characteristics, three service models, and four deployment models.” According to NSIT there are five essential characteristics of cloud computing (Nist.gov, 2015):

1. On-demand self-service (the way that the required PC administrations can be utilized without the need to contact the provider);
2. Broad network access (capabilities that are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms);
3. Resource pooling (the provider’s computing resources are pooled together to serve multiple consumers using multiple-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand);
4. Rapid elasticity (cloud services that can be rapidly and elastically provisioned, in some cases automatically, to quickly scale out and rapidly released to quickly scale in. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be purchased in any quantity at any time);
5. Measured service (cloud computing resource usage can be measured, controlled, and reported providing transparency for both the provider and consumer of the utilized service. Cloud computing services use a metering capability which enables controlling and optimising resource use).

Over the course of time, the sixth fundamental characteristic has been formulated called “Cloud Security Alliance”. Its essence is often expressed as “the need for policy-driven enforcement, segmentation, isolation, governance, service levels, and chargeback/billing models for different consumer constituencies. Consumers might utilize a public cloud provider’s service offerings or actually be from the same organisation, such as different business units rather than distinct organisational entities, but would still share infrastructure” (Isaca.org, 2015).

2.2 Forms of cloud technology

Cloud computing appears in three different forms:

1. Private cloud is a “particular model of cloud computing that involves a distinct and secure cloud-based environment in which only the specified client can operate. Under the private cloud model, the cloud (the pool of resource) is only accessible by a single organisation providing that organisation with greater control and privacy”;
2. Public cloud is a “model, under which cloud services are provided in a virtualized environment, constructed using pooled shared physical resources, and accessible over a public network such as the Internet. Public clouds, however, provide services to multiple clients using the same shared infrastructure”;
3. Hybrid cloud is “an integrated cloud service utilizing both private and public clouds to perform distinct functions within the same organisation” (Interoute, 2015).

Normally, each of previously defined forms has both its pros and cons. There is no one solution which fits every business problem. The whole business situation needs to be assessed in order to determine which of the available options is the most efficient in reaching commercial goals.

Public cloud computing has been highly

appraised for the following characteristics:

1. Ultimate scalability (reflected in the constant synchronization between changes and app activity and this is considered to be a significant advantage of this kind of cloud);
2. Cost effectiveness (large data storage is available at a reasonable price);
3. Utility style costing, reliability (the payments are made by clients only when they exploit available options);
4. Flexibility (public clouds offer wide range of services and they are reliable as their infrastructure ensures that if one segment is not working properly, clients do not experience any problems); and
5. Location independence (refers to the fact that there are no restrictions in terms of location from which the cloud can be accessed) (Interoute, 2015).

On the other hand, private clouds are considered to have following advantages: stronger security characteristics, more efficient energy consumption, greater cost-saving, higher reliability, greater control and cloud bursting (Interoute, 2015).

2.3 Implementation of cloud technology strategy

Developing an appropriate strategy is considered to be the step number one in adopting cloud technology. Based on numerous examples from practice, often the simplest solutions give the best results. While creating the strategy, one must always be aware of the business’s unique characteristics and its target market needs (Orosco, 2013).

A successful cloud strategy can take different structures, however, the embodiment is that execution of the new innovation is useful to the organisation. These advantages can show up in various structures, yet they have something in common - they include benefit for the organisation. This implies that before usage of a cloud innovation, there ought to be an arrangement to do that in such a way that it empowers organisation to decrease its expenses, while it adds to the businesses

productivity. The adoption of cloud technology should bring organisation an expanded adaptability, which is nowadays one of the fundamental necessities in the business world.

The initial phase in procedure of picking the right cloud option is ensuring that organisation has profound learning of what the business necessities are and what the genuine extent of a business is; wrong choice at the starting point can later incur costs.

Information should be assessed carefully – it is essential to comprehend what sort of risk an organisation is attempting; for specific sorts of information, for example, those which are secret, cloud hosting is not the most fortunate arrangement. Likewise, if there are excesses of bits of information, this alternative needs to be reconsidered.

Considering every single conceivable cost such as downtime, upkeep, redesign and inward assets, empowers one to know the precise measure of cash which will be spent on adopting cloud; despite the fact that it is entirely reasonable, it is still a long way from immaterial assets.

Cautious assessment of both business and operational advantages of implementing cloud facility is another variable which needs consideration. Expanding point of view and considering future needs of a business, conceivable future associations, and all outer and inner elements which can impact the course of a business should all be undertaken at this point.

One of the principle standards of strategic planning is that before any arranging, organisation must know its present position in the industry. For this situation, it implies that before switching to cloud technology, a company have to inventory all the currently used applications. This understanding of IT part of the organisation may set a strong premise for its further development.

Once the applications are recorded, a more engaged way to deal with them ought to be applied. While knowing the rundown of uses is definitely important, it is much more vital

what each of these applications accomplishes for the organisation. The simplest route to that is to choose which of these applications are core and which are contextual. Core applications are characterized as applications which “create sustainable differentiation in the target market resulting in premium prices or increased volume; provide true innovation and differentiation; seek to dramatically outperform all competitors.” Contextual applications are applications which: “do not differentiate the company; seek to meet, but not exceed, accepted standards.” Once the applications are recorded and characterized, the following step is defining their lifecycle stage. This procedure can also apply to different resources. With regards to applications, they have a particular lifecycle which comprises of the accompanying stages: packaging, management, deployment, updates, support, and termination. (Blogs.technet.com, 2015)

This sort of evaluation results in a reasonable review of which applications should be upgraded and which will no longer be utilized. It is a general rule that those applications which are in a redesign stage need to be considered as a contender for the usage of the cloud processing.

Furthermore, more complex tools need to be applied in order to conduct technical analysis. This analysis helps the company to make a decision what can be transferred to the cloud. Orosco (2013) listed elements of technical analysis:

- level of customization,
- amount of intellectual property,
- number of integration points,
- network connectivity requirements,
- and security requirements.

Financial examination is the following step. Same as in every business field, benefit is one of the key components. Usage of cloud registering has to be more cost-productive than the case in which organisation runs the base without anyone else's input. All together for monetary examination to be fruitful, it is important to approach the issue from different angles. Scholastics argue that cloud registering surely expects to lessen expenses of IT while diminishing handling time and

expanding organisation's adaptability (Low, Chen and Wu, 2011).

With any uncertainty, cloud registering lessens the expenses of free IT administration inside the organisation (Low, Chen and Wu, 2011). In any case, cloud figuring may speak to a critical speculation and in the current writing the high cost is frequently expressed as a noteworthy explanation behind putting off usage of cloud framework. Because of previously mentioned globalization and innovation market development, numerous suppliers of administrations identified with cloud processing wound up in a position which resulted in bringing down the costs keeping in mind the end goal to stay focused (The Economist, 2015). Therefore, this circumstance with cloud figuring changed after the article by Low, Chen and Wu was distributed. Costs of cloud figuring are essentially lower and they are as yet falling.

Despite the current situation, a thorough financial analysis is still required. Orosco (2013) gave his contribution by listing types of cost which should be taken into account: staff, data-centre real estate, cooling, power, software costs, maintenance and support.

Once when the greater part of the past steps is finished, two most critical variables must be assessed - expense of cloud usage and estimation of cloud execution. Person(s) in control ought to remember that the utilization of cloud ought to add to the business' effectiveness, adaptability and benefit and not just supplant past type of innovation.

Orosco (2013) calls attention to the fact that is not an uncommon case that chiefs disregard the courses in which cloud figuring can change business. Cloud processing offers another method for doing the business and it leaves space for a relevant application to wind up a centralized one. The significance of this probability is tremendous - it is a chance for a business to apply separation methodology.

Based on the previously outlined findings from the existing literature, one may conclude that the hypothesis two has been accepted:

Implementation of cloud technology has certain challenges and requires strategic approach.

2.4 Benefits of cloud technology

Today, it is no more an inquiry whether cloud spares time and cash, but how it can change business forms. Right now, 37% of small-scale organisations on the American soil utilize cloud innovation and the expectations are that this number will ascend to 80% over the span of the following six years.

Transformational force of cloud innovation still has not been misused. It appears that, until further notice, cost decrease and change of proficiency are in the concentrate, yet numerous specialists call attention to the fact that cloud is gradually changing business associations and its effect will just raise as the time passes.

Cloud innovation has a diverse span of applications with regards to business change. An examination attempted by KPMG demonstrated that organisations began to use cloud keeping in mind the end goal to drive business transformation by:

- Driving cost efficiencies (49%),
- Better enabling mobile workforce (42%),
- Improving alignment with customers/partners (37%),
- Better leveraging data to provide insight (35%),
- New product development/innovation (32%),
- Developing new business models (30%),
- Shifting to a global shared services model (28%), and
- Faster time to market (28%). (Kpmg.com, 2015):

In the same exploration directed by KPMG it is revealed that cloud innovation expands workforce versatility, which is observed to be very valued to both businesses and employees. The experience from individual life has been exchanged to a hierarchical setting. Cloud innovation really empowers organisations to give their representatives rich

visual experience from various destinations and in various focuses in time. The as of now specified results are higher efficiency (54%) and larger amounts of fulfilment and adaptability (48%) (Kpmg.com, 2015).

Versatility of workers is a source of numerous points of interest. In the adaptable and quick changing environment, adaptability empowers organisations to react faster the business sector requests. Scholastic research demonstrated that adaptability of HR is associated with a money-related execution of the organisation, yet it is the aptitude adaptability which contributes the most to the cost-productive behaviour of work (Bhattacharya, 2005). Research conducted on corporations and business enterprises shows that following benefits can be highlighted as advantages of workforce mobility (KPMG, 2014):

- Increased employee productivity,
- Higher employee satisfaction,
- Improved field service operations,
- Competitive advantage,
- Increased sales/revenue,
- Improve/maintain existing competitive advantage, and
- Decreased IT costs.

Livelihood of cloud innovation improves workforce versatility in one other sense - remote working courses of action (Media Business, 2015). One of the patterns in the work business sector is that there is a developing number of non-customary contracts. These incorporate adaptable working time, probability to telecommute, unique plans for folks or overseers, etc. (Gov.uk, 2015). This sort of adaptability permits not just lasting labourers to get to the vital information at whatever point and wherever it is fundamental, but it also opens a door for organisation to utilize individuals who were not ready to fit into the standard working plans and subsequently, cloud empowers organisations to look over a much more noteworthy pool of potential representatives.

Before cloud innovation, business procedures were divided and there was deficient reconciliation between business procedures and information administration. Once the

cloud innovation got to be an imperative piece of business environment, it permitted organisations to change their procedures and make more incorporated and adaptable associations. Procedures are better and they are overseen at the hierarchical level. They are likewise more open to changes, which empowers organisations to react faster to the adjustments (Cognizant, 2014).

Business forms now have a tendency to be versatile in their temperament and they are similarly versatile to local and global environment. Moreover, there is an adjustment in the centre of associations - state of mind towards the fundamental guideline of working. Cloud innovation empowered association to put change as a centre esteem and to always chip away at it (Cognizant, 2014).

While advancement has dependably been exceptionally assessed, cloud innovation empowered its complete extension and transformed it into a need and not upper hand. Another part of cloud innovation which takes into account a more prominent level of development is more effective utilization of uses and base (Cognizant, 2014).

Following contributions of cloud computing have been recognized:

1. Decrease in costs and amount of time in terms of addressing scalability requirements.
2. Shorter period of application of changes.
3. Shorter period of time necessary to penetrate the market.
4. Decrease in IT infrastructure investment.
5. Decrease in IT management and maintenance costs.
6. Smaller risk exposure. (Cognizant, 2014)

Plug-in-players is a term which was coined in order to define enterprises which plug into cloud-based service providers. The purpose of the existence of such companies is to ensure that small businesses can focus on their core activities, while the daunting ones can leave to somebody else to complete (Inc.com, 2015).

Task-oriented groups are having their offer of prominence in the course of the most recent couple of years. These groups are shaped when it is important to finish a specific errand or to seek after a venture. Once the regular objective is accomplished, the group no longer exists. This sort of work became much simpler when the cloud innovation got to be accessible. Presently, colleagues don't need to be in the same city, nation, or on the same landmass. They can utilize cloud innovation to help them accomplish their objective effectively (Inc.com, 2015).

Errand-arranged groups existed before cloud innovation, yet they are really satisfying their motivation just at this point. Due to cloud innovation, organisations can pick the absolute best individuals for the venture, without stressing over confinements, for example, area and time zone distinction (Inc.com, 2015).

Experts call attention to the fact that cloud innovation opened numerous new doors and a standout amongst the most essential ones in the way that small organisations can contend with large companies (Inc.com, 2015). This pattern is generally present in the administrations business, yet the possibilities for further development exist.

At long last, consultants which have different surges of pay can make utilization of cloud innovation so as to oversee them. Individuals maintain a few sources of income in the meantime, particularly in situations when they do not have a custom occupation with 9 to 5 working hours. Cloud innovation offers them a genuinely simple approach to sort out their work and to ceaselessly track the advancement (Inc.com, 2015).

2.5 Challenges of implementing cloud technology strategy

For the largest portion of this paper, cloud innovation was discussed from the viewpoint of its preferences. Be that as it may, cloud innovation cannot be actualized with no exertion. It has been as of now specified that cloud innovation can cost a great deal, contingent upon the extent of business which

is being moved to the cloud. In spite of the fact that costs have fallen and this pattern continues, measure of cash essential for executing a cloud is a long way from being little. Hence, and with a specific end goal to guarantee that cloud genuinely adds to the business' productivity, there are numerous elements to which consideration ought to be paid.

Organisations which have effectively moved to cloud are most likely the best wellspring of data about the issues from the beginning period of cloud usage. Research led by KPMG revealed that business pioneers observed these three difficulties to be the hardest one:

- data loss and privacy risks were highlighted by 53% of the respondents;
- intellectual property theft is seen as a great source of trouble by 50% of the respondents; and
- impact on IT organisation has been identified as a problem by 49% of the respondents. (KPMG, 2014)

These challenges are followed by:

- Measuring on ROI (return on investment) (48%);
- High cost of implementation (48%);
- Legal and regulatory compliance (46%);
- Integration with existing architecture (46%); and
- Lack of clear picture about the total cost incurred by ownership (46%). (KPMG, 2014)

Absence of backing has additionally been recognized as one of the huge difficulties. At the point when the technique is not created to its each and every subtle element, issues of support may stay uncertain. This may prompt badly arranged circumstances once the organisation has officially chosen to change to cloud innovation (Cloud Tech News, 2015). Keeping in mind the end goal to stay away from this issue, it is important to settle on a choice whether an organisation will run cloud all alone, or it will outsource this action.

Already portrayed test can be associated with nature of administration which organisations get from cloud suppliers. Frequently, there are open deliberations that the issues with elements of cloud framework can cost beyond all doubt and that in spite of the fact that there is an arrangement that suppliers make up for the time lost because of server's wastefulness, officials express that it is not only the matter of cash. A percentage of the overviews led highlight this as the primary reason (together with the issue of information security) for organisations not changing to cloud innovation (IBM, 2015).

At last, cloud innovation can fail to meet expectations in situations when organisation does not pick the suitable answer for its needs (Cloud Tech News, 2015). This particularly applies to running the database server. Once more, the issue lies during the time spent arranging and surveying organisation's present and future position in the business sector. So, to pick the right arrangement, organisation must be in a position to foresee the interest and potential subjective and quantitative change in its needs. Cloud innovation must increase the value of the organisation's execution and productivity and it cannot be accomplished if there is no similarity between organisation's needs and attributes offered by the picked cloud. Half and half cloud framework is one of the proposed arrangements which lessens the dangers for the organisation (Cloud Tech News, 2015). Be that as it may, this ought not be a reason for lacking key arranging.

The conclusion is that hypothesis three has been also accepted:

Advantages of cloud technology and its implementation overcome its disadvantages.

2.6 Business entities and their relation to IT as a source of competitive advantage

In order to test the hypothesis one, an analysis of the existing practical examples has been conducted. At the absolute starting point, IT was seen as an imperative wellspring of upper hand for organisations. In any case, over the time it has demonstrated that data innovation itself is not favourable position itself, particularly in light of the fact that it does not

require a considerable measure of investment to copy it or actualize the same framework. Some believe that IT is no more leverage, yet a straightforward need. The individuals who assert that IT is a need, additionally guarantee that "IT creates advantage by leveraging or exploiting pre-existing, complementary human and business resources" (Powell and Dent-Micallef, 1997). The estimation of innovation as we probably are aware of it today was perceived amid the most recent decade of twentieth century and there is a shockingly number of articles from that period covering the part of innovation in making and maintaining upper hand.

Organisations are immeasurably utilizing IT as a wellspring of upper hand and Forbes distributed a rundown of 21 organisations which are thought to be exceptionally fruitful in using IT for this reason. These organisations are: Accenture, Amazon, Apple, Cleveland Clinic, General Electric, Goldman Sachs, Google, Hospital Corporation of America, IBM, Intermountain Healthcare, JP Morgan Chase, Kaiser Permanente, Mayo Clinic, Microsoft, Settle, Procter and Gamble, Progressive Insurance, Schlumberger, Target, Toyota, and Wells Fargo (Columbus, 2015). The most esteemed properties of these organisations are:

- customer-driven IT;
- managing complex e-commerce systems and platforms;
- supporting multichannel management; and
- fast innovation. (Columbus, 2015)

As one may easily conclude, all of the previously mentioned points are relevant for creating the competitive advantage. Most noteworthy officials who were incorporated into the Forbes' review additionally highlighted the greatest points of the already mentioned 21 organisations:

- customer-facing IT (15%);
- integrated/standardized/unified IT organisation and process framework (13%);
- exceptional use of CRM (11%);
- customer-centred innovation (9%); and
- product design & offerings (9%). (Columbus, 2015)

Q: What particular, IT-related capability makes that company stand out?

N = 200 CEOs and senior business executives worldwide



Figure 1: What Impressed Business Leaders about Respected Companies (Columbus, 2015)

2.7 Practical recommendations for implementing IT strategies

There are some broad recommendations for utilizing IT:

1. The Opinion of CEO about IT use: The CEO's vision can affect the way chiefs consider loads of things within their association, including IT. If the CEO understands that IT can be a skilled forceful weapon, a message is sent to the entire affiliation that surfacing with creative IT considerations can provoke association improvement. Association's power is crucial in settling on the choice regarding IT as a wellspring of upper hand.
2. Use data innovation to fabricate solid connections between specialists and IT individuals: With a specific end goal to

make utilization of IT and its advantages, one must comprehend it. The most ideal approach to do that is to collaborate with IT division and to coordinate its individuals into the association. This is vital for another reason - IT division cannot give organisation fruitful and helpful arrangements on the off chance if they do not have the comprehension of the business issue. It is additionally profoundly prescribed that administrators and business officials have foundation in administration data frameworks.

3. Use information innovation to put business challenges into an alternate point of view: This basically implies that a business issue ought to be seen from a client viewpoint. IT frameworks

have been utilized for quite a while to make predominant client experience. CRM (client relations management) is one of the samples.

4. Use Information Technology in Creative Designing: This implies that an organisation needs to make frameworks which permit it tackles issues in an alternate way and not to rehash the same technique again and again. Making a framework which is unique in relation to the ones contenders have is the thing that makes upper hand (Ramey, 2012).

organisations (IBM, 2013):

- a) Pacesetters build their competitive advantage because of the fact that they are among the first ones to accept technological novelties, including cloud technology.
- b) Challengers follow pacesetters, but they are not so quick in making changes in their product offerings and responding to changing market needs.
- c) Chasers do not accept cloud technology to the fullest, but they are in the early stages of implementing it and they still do not manage to build any competitive advantage from it.

2.8. Cloud Technology and Competitive Advantage in the Market

IBM Centre for Applied Insights together with Oxford Economics led an exploration keeping in mind the end goal to decide how organisations use cloud innovation as a source of upper hand. As indicated by their information, 1 out of 5 organisations perceives cloud processing as a capable weapon for battling for the position in the business sector (IBM, 2013).

The sample in this examination comprised of more than 800 organisations which utilized cloud. IBM made a taking after order of these

IBM found that pacesetters are to a great degree more effective than two other groups in the area of business sector responsiveness. It has been revealed that cloud innovation gives these organisations a superior knowledge of the business sector changes and that it additionally places them in a position from which they can react faster to the business sector requests. This group of organisations, which grasped cloud innovation, construct and keep up their upper hand through vital re-evaluation, settling on better choices, and more profound coordinated effort (IBM, 2013).

Table 1: Building Competitive Advantage by Using Cloud Technology

Strategic reinvention	<ul style="list-style-type: none"> • Reinvent customer relationships • Innovate products/services rapidly • Build new/improved business models
Better decisions	<ul style="list-style-type: none"> • Use analytics to make sense of big data • Share data using various applications • Make decisions based on data available
Deeper collaboration	<ul style="list-style-type: none"> • Make it easier to exploit knowledge of experts regardless of their location • Create stronger relationship between development and operations • Higher levels of collaboration throughout the organisation

Group of organisations named as pacesetters even distinguished qualities of cloud innovation which would be of a huge worth later on. These qualities are:

- Product/service building blocks: “Easy-to-assemble industry or business service components they can use to construct new products or services”.
- (Even bigger) big data: “Access to – and management of – vast data stores

they cannot get to at the moment (this was actually identified by other groups of companies as the most important)”.

- Industry-specific platforms: “Cloud platforms with applications and computing environments designed specifically for their industry”. (IBM, 2013)

An examination attempted by Harvard

Business Review Analytic Services revealed that 29% of organisations use cloud figuring for not exactly a year, 33% for one to two years, 20% for a few years, 8% three to four years, 4% four to five years, while just 7% use it for over 5 years. The early adopters of cloud innovation assert that it brought them more noteworthy upper hand and livens which have been as of now portrayed

(Harvard Business Review Analytics, 2014).

Question 1: Please indicate the extent to which your company uses any form of cloud computing.

Question 2: Please indicate the extent to which your company will be using cloud in 18 months and 3 years.

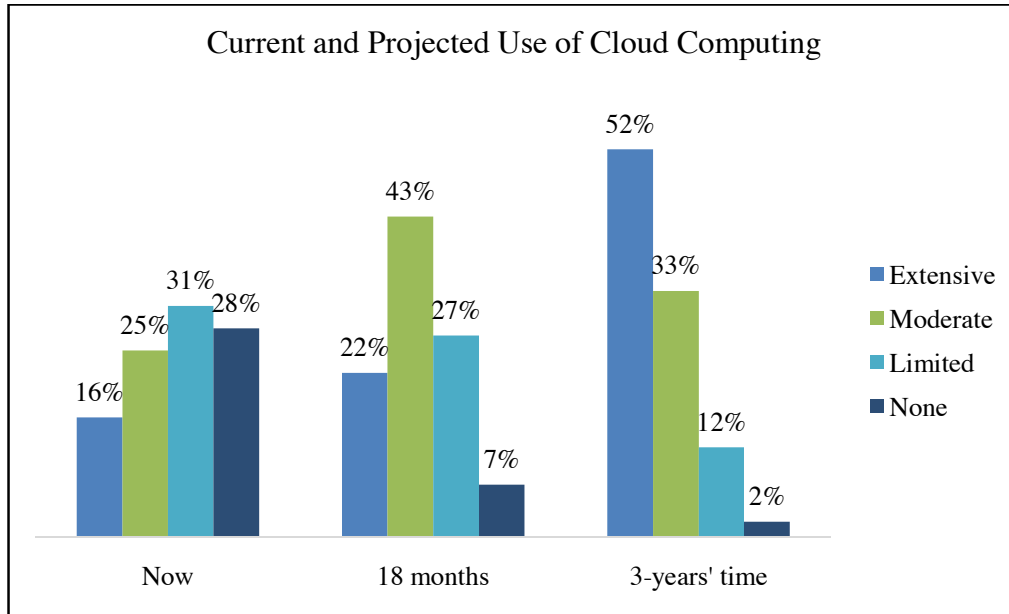


Figure 2: Current and Projected Use of Cloud Computing

The most esteemed focal points of utilizing cloud registering are (all together from the most astounding to the least positioned): expanded business spryness, adaptable limit, quicker appropriation of new innovation, lower settled costs, lower in advance expenses to create/send IT frameworks, and dependably on freshest renditions of programming without IT overhauls (Harvard Business Review Analytics, 2014).

Cloud innovation furnishes organisations with the adaptability required in this present day business environment. They are in a position to be more responsive and even proactive. It additionally permits organisations to test their thoughts, to perceive how they work, and to either acknowledge them or decrease them without losing incredible measures of cash (Harvard Business Review Analytics, 2014)

Table 2: Advantage of the Cloud Technology

Advantage of the Cloud	percentage agreeing
Lets us experiment more easily and at low cost	64%
Enables deeper collaboration with business partners	61%
Frees up IT resources to work on more strategic things	60%
Is a source of competitive advantage for early adopters	57%
Lowers the cost of doing business	55%
Lowers overall IT costs	55%

It was additionally researched what kind of cloud innovation has been utilized in organisations which are utilizing it and, as of now, private cloud is the most well-known (37%), trailed by half breed cloud (34%), while the lowest rate of organisations (29%) utilizes open cloud (Harvard Business Review Analytics, 2014).

It is additionally vital to comprehend what is seen as a hindrance or issue with cloud

registering, keeping in mind the end goal to recognize what they see as potential dangers to their upper hand produced by it (Harvard Business Review Analytics, 2014). Discoveries of the examination are abridged in the accompanying diagram.

Question: Please rate the level of concern in your organisation over these perceived barriers or risks of cloud computing.

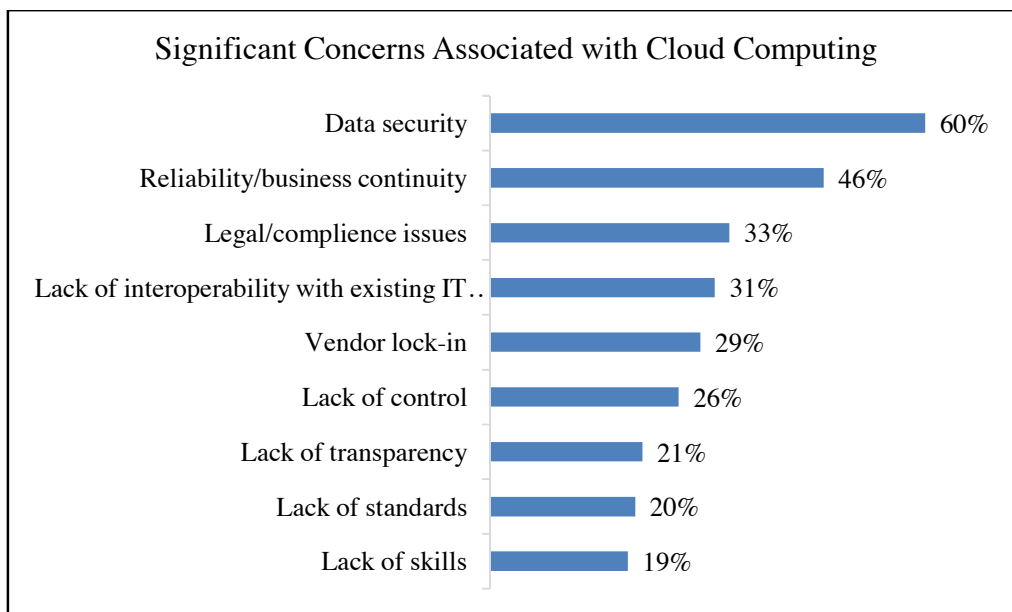


Figure 3: Significant Concerns Associated with Cloud Computing

At long last, the upper hand created by the cloud innovation is still saved for those organisations which trust that advantages are more prominent than dangers connected with it (Harvard Business Review Analytics, 2014). A portion of the reasons why others are not utilizing cloud processing are outlined as a part of the accompanying bar diagram.

The conclusion is that hypothesis three has been also accepted:

Cloud computing is a significant source of competitive advantage for companies operating in the international business markets.

3.CONCLUSIONS AND RECOMMENDATIONS

Past sections of this paper demonstrate that debate about cloud is complex. There are numerous components which impact an organisation's capacity to grasp innovations in the field of technology. Examination of the genuine illustrations demonstrated that those organisations which chose to acknowledge and exploit these innovations, for the most part, profit by it, despite the fact that a huge effort must be invested. As this paper was analysing this problem from a managerial point of view, it is important to stress again that cloud computing and its implementation should be seen as a strategic decision.

Before making a final call, managers and those in charge of the company's development should carefully consider whether cloud computing contributes to the company's position in the market or not. Cases presented in previous sections show that multinational companies which implemented this IT solution largely benefited from it. Some authors point out that complexity of a certain business may represent an obstacle in regards to cloud computing, but these companies prove that it does not have to be the case.

The specific thing about cloud computing is that it changes associations into better fitting elements with market nowadays. Changes which are continually occurring call for more adaptable solutions and adaptability is precisely what cloud registering offers. Be that as it may, this adaptability is not granted just based on the fact that company implemented cloud computing. With a specific end goal to begin the procedure of change, supervisors and officials need to evaluate organisation's present position and future interest keeping in mind the end goal to pick the best arrangement. Cloud processing comes in various structures and with various details and no worth can be made for the organisation if the picked arrangement cannot be legitimately incorporated. Cloud processing is not only a specialized advancement, despite the fact that there is undoubtedly a huge impact on the IT bureau of every organisation which utilizes it. It permits organisations to take the best of their HR, to oversee it in a way which expands efficiency, while the more agreeable environment is being made. Besides, cloud registering makes an open door for organisations to alter or change their core values and to put advancement and change in the core interest. This sort of progress has impact over the entire association, from its least to its most abnormal amounts.

When it comes to the formal research component of this paper, it has been shown that all three following hypotheses were confirmed:

1. Cloud computing is a significant source of competitive advantage for companies operating in the

international business markets.

2. Implementation of cloud technology has certain challenges and requires strategic approach.
3. Advantages of cloud technology and its implementation overcome its disadvantages.

The case studies and researches of the companies applying cloud computing lead one to developing the most important recommendation: each company has to adjust cloud technology strategy to meet its own needs and industry requirements. While potentially all companies share same challenges, there are numerous ways to overcome each of them. Strategic approach to the problem should result in developing a strong source of competitive advantage. Although the tailored approach to the problem is more than welcome, it should be taken into account that the number of companies implementing cloud technology is constantly growing so that may not be the most convenient solution at the moment, but in the long run certainly has to be implemented. At some point, which may be very soon, cloud computing will no longer be a source of competitive advantage, but it will be an industry requirement. It takes careful planning and orientation towards long-term goals to maximize benefits of cloud computing and minimize the obstacles. There is a whole new area of management called cloud management developing as a response to this very real business need. Additionally, cloud management systems are being developed as a new form of support for cloud computing systems. As it seems, cloud computing is getting significant attention and it is becoming inevitable to think about it in the context of particular organisations.

Probably the best and most reliable confirmation of the statement that this technology provides companies with a basis for competitive advantage is the fact that companies believe in it and see their competitors as greater threats once they employ cloud computing. As it was pointed out several times, none of these two is a competitive advantage itself, but once they are implemented correctly and handled and used

in the right manner, they provide companies with opportunity to exploit external and internal resources and to turn the results of this process into competitive advantage.

REFERENCES

- Asnina, E. (2013). Essentiality of Changes in Business Models. *BSC* 2013, 1(1). <http://dx.doi.org/10.7250/bsc.2013.6>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal Of Management*, 17(1), 99-120. <http://dx.doi.org/10.1177/014920639101700108>
- Berisha-Shaqiri, A. (2015). Management Information System and Competitive Advantage. *MJSS*. <http://dx.doi.org/10.5901/mjss.2015.v6n1p204>
- Bhattacharya, M. (2005). The Effects of Flexibility in Employee Skills, Employee Behaviors, and Human Resource Practices on Firm Performance. *Journal of Management*, 31(4), pp.622-640.
- Blogs.technet.com, (2015). Theories of Cloud Computing: The 5-3-2 Principle - Yung Chou on Hybrid Cloud - Site Home - TechNet Blogs. [online] Available at: <http://blogs.technet.com/b/yungchou/archive/2011/03/03/chou-s-theories-of-cloud-computing-the-5-3-2-principle.aspx>
- Bohling, T., Bowman, D., LaValle, S., Mittal, V., Narayandas, D., Ramani, G. and Varadarajan, R. (2006). CRM Implementation Effectiveness Issues and Insights. *Journal of Service Research*, 9(2), pp.184--194.
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: an overview. *Journal Of Cleaner Production*, 45, 1-8. <http://dx.doi.org/10.1016/j.jclepro.2012.08.013>
- Borden, L. M. and Perkins, D. F. (1999). Assessing Your Collaboration: A Self-evaluation Tool. *Journal Of Extension*, 37 (2), pp. 67-72
- Cloud Tech News, (2015). What are the Five Most Common Challenges New Cloud Customers Have?. [online] Available at: <http://www.cloudcomputing-news.net/news/2014/sep/24/what-are-five-most-common-challenges-new-cloud-customers-have/>
- Cognizant, (2014). Cloud-Enabled Enterprise Transformation: Driving Agility, Innovation and Growth. [online] Available at: <http://static1.squarespace.com/> [Accessed 12 Aug. 2015].
- Columbus, L. (2015). 21 Most Admired Companies Making IT a Competitive Advantage. [online] *Forbes*. Available at: <http://www.forbes.com/sites/louiscolombus/2013/04/01/21-most-admired-companies-making-it-a-competitive-advantage/> [Accessed 22 Aug. 2015].
- Csrc.nist.gov, (2015). NIST Computer Security Division - Computer Security Resource Center. [online] Available at: <http://csrc.nist.gov/>
- Dubey, A., Goel, G., & Sahu, G. (2013). Effective implementation of competitive advantage and sustainable competitive advantage: a conceptual model. *IJBIR*, 7(5), 519. <http://dx.doi.org/10.1504/ijbir.2013.056176>
- Fischer, R., Ferreira, M., Assmar, E., Redford, P. and Harb, C. (2005). Organizational Behaviour across Cultures Theoretical and Methodological Issues for Developing Multi-level Frameworks Involving Culture. *International Journal of Cross Cultural Management*, 5(1), pp.27--48.
- Gov.uk, (2015). Flexible Working - GOV.UK. [online] Available at: <https://www.gov.uk/flexible-working/overview> [Accessed 10 Aug. 2015].
- Harvard Business Review Analytics, (2014). How the Cloud Looks from the Top: Achieving Competitive Advantage In the Age of Cloud Computing. [online] *Harvard Business Review*, pp.1-16. Available at: https://hbr.org/resources/pdfs/tools/16700_HBR_Microsoft%20Report_LONG_webview.pdf [Accessed 20 Aug. 2015].
- IBM, (2015). Top 5 Challenges to Cloud Computing - Cloud Computing Central

- mmunity/blogs/c2028fdc-41fe-4493-8257-33a59069fa04/entry/top_5_challenges_to_cloud_computing4?lang=en [Accessed 9 Aug. 2015].
- Inc.com, (2015). How the Cloud Will Transform Business by 2020. [online] Available at:<http://www.inc.com/graham-winfrey/why-the-cloud-will-transform-small-business-by-2020.html>
- Interoute, (2015). What is a Private Cloud?. [online] Available at: <http://www.interoute.com/cloud-article/what-private-cloud>
- Isaca.org, (2015). Information Technology - Information Security Information Assurance | ISACA. [online] Available at: <http://www.isaca.org/> [Accessed 3 Aug. 2015]
- Jhbarnes.net, (2015). Technology Infrastructure Management Services - Cloud Computing. [online] Available at: <http://www.jhbarnes.net/CloudComputing.aspx> [Accessed 1 Aug. 2015].
- Johnson, M. (2006). Supply Chain Management: Technology, Globalization, and Policy at a Crossroads. *Interfaces*, 36(3), 191-193. <http://dx.doi.org/10.1287/inte.1060.0214>
- Kahler, M. (2013). Economic Crisis and Global Governance: The Stability of a Globalized World. *Procedia - Social And Behavioral Sciences*, 77, 55-64. <http://dx.doi.org/10.1016/j.sbspro.2013.03.062>
- KPMG, (2014). Elevating Business in the Cloud. Cloud Survey Report. [online] KPMG, pp.1-15. Available at: <http://www.kpmginfo.com/EnablingBusinessInTheCloud/downloads/7397-CloudSurvey-Rev1-5-15.pdf#page=8>
- KPMG, (2015). Cloud Enabled Business Transformation | KPMG | US. [online] Available at: <http://www.kpmg.com/us/en/topics/pages/cloud-takes-shape.aspx>
- Low, C., Chen, Y. and Wu, M. (2011). Understanding the Determinants of Cloud Computing Adoption. *IndustrMngmnt& Data Systems*, 111(7), pp.1006-1023.
- Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud computing — the business perspective. *Decision Support Systems*, Vol. 51. Issue 1. Pp. 176; 176-189; 189.
- Media Business, (2015). How Cloud Computing Can Transform Your Business Landscape. [online] Available at: <http://media.business.shaw.ca/>
- Nist.gov, (2015). National Institute of Standards and Technology. [online] Available at: <http://www.nist.gov/>
- Orosco, C. (2013). NetAppVoice: Something Remarkable is Happening: How to Transform Your Business with the Cloud. [online] Forbes. Available at: <http://www.forbes.com/sites/netapp/2013/04/08/transform-business-cloud/> [Accessed 3 Aug. 2015].
- Powell, T. and Dent-Micallef, A. (1997). Information Technology as Competitive Advantage: The Role of Human, Business, and Technology Resources. *Strat. Mgmt. J.*, 18(5), pp.375-405
- Ramey, K. (2012). Use of Information Technology in Competitive Advantage. [online] Use of Technology. Available at: <http://www.useoftechnology.com/information-technology-competitive-advantage/>
- The Economist, (2015). The Cheap, Convenient Cloud. [online] Available at: <http://www.economist.com/news/business/21648685-cloud-computing-prices-keep-falling-whole-it-business-will-change-cheap-convenient> [Accessed 9 Aug. 2015].

URBAN RENEWAL ANALYSIS: ASSESSMENT AND EFFECTS

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Abstract: Urban renewals are one of the main tools used in an achievement of economic, social and ecological urban development. The subject of urban renewals is buildings that are part of the architectural heritage of cities, historic-cultural monuments (under state protection or not) and brownfield locations. The research is based on the analysis of urban renewal characteristics, the influence on wider economic, social and ecological picture of the city, and on the identification of indicators used for assessment of these type of investments. The emphasis of the research is on brownfield locations since, from the perspective of investments, brownfields are interesting due to their nature – they carry a higher amount of risk, they are more complex, they cover big areas and investments in these renewals, in most cases, are high. With presenting practical examples, the case studies of urban renewals in Toronto and New York, it is explained how the public sector can be engaged in the attraction of investments and the significant effects that urban renewals can have on a social, economic and ecological aspect of the city development.

Key words: effects, incentives, indicators, investment, urban renewal

1. INTRODUCTION

In the second half of the 20th-century, cities were changing their appearance because the industries were shutting down and other social and economic changes were happening. As a consequence of the traditional industrial production shutdown, industrial buildings and warehouses were abandoned. Development of modern means of transportation led to a reduction of railway and waterway transport, which resulted in the gradual abandonment of harbors and railway tracks. With the trend of demilitarization, great number of military objects remained out of use. These and other social, economic, demographic and ecological changes led to urban sprawl and expansion of the urban areas, while abandoned, often neglected, objects like these remained in the downtowns and cores of the city as a disgrace and, and quite often, as a source of contagion (Nikolić, 2014).

In developed countries, the trend of the renovation of these locations started to expand at the end of the 20th century, and in the undeveloped countries, it started to spread in the last few years. Urban renewal is used as a

tool for appropriate protection and preservation of architectural heritage, its inclusion in modern trends of city development. Effects that urban renewal has on city development are various, from financial effects that can have investors, the attraction of tourists and new investments, to creating a more pleasant living environment and wellbeing, etc.

The effects that urban renewal has on the community are usually more significant and more frequent than the financial effects, so the public sector makes various compromises in order to attract private investors to invest in urban renewal projects. With regards to diversity of these effects, the assessment of investments in urban renewal is expressed through numerous various indicators.

2. DEFINITION AND ANALYSIS OF URBAN RENEWAL

Urban renewal is used for projects that have large proportions, and it applies to clearance of (construction) waste and to physical renewal that is related to preservation of architectural heritage. It refers to the

improvement of general state of affairs of the whole city or part of the city (i.e. on renewal and modernization), with partial replacements and contributions to construction fund, and to accomplishment of favorable conditions, especially cultural, for the life of the city community (Roter-Blagojević & Nikolić, 2008). According to the same authors, activities within urban renewal of historical areas of the city can be divided into three types:

- a) conservation – series of actions that have as a goal protection from harmful effects and maintenance of the satisfactory state of preservation of complexes or buildings
- b) restoration – renovation or restoration of buildings that in the meantime changed their original purpose or became deteriorated but preserved their basic assembly
- c) reconstruction – freeing up of space, change of zoning law and new construction in the neglected parts of the city where maintenance and renewal of deteriorated building weren't predicted.

According to the Law on Planning and Construction of the Republic of Serbia, urban renewal is set of planned, architectural and other measures taken within the scope of renovation, planning or reconstruction of built-up part of the city or the urban center (Law on Planning and Construction, 72/2009).

Buildings and city locations or units that are subjected to urban renewal projects can be divided into two groups:

- Historic-cultural monuments with lower level of state protection and objects that don't represent important architectural and artistic achievements, and as such they don't undergo any form of protection, but they represent important component of the city's identity and have historical importance (great number of villas in Belgrade, in the style of neoclassicism, secession...)
- Brownfield locations (abandoned industrial, military, depot, railway complexes)

Some brownfield locations also can be under state protection.

2.1. Influences of the urban renewal on the city development: effects and conflicts

The effects of every investment represent the result of certain investing, which is given through the exploitation of the investment. With the investments in urban renewal, the actual investing is made in the present, and series of effects are being collected through a long period in the future (Jovanović, 2013).

The most frequent classification of effects of investment is on economic and non-economic. The economic effects are the easiest for measuring and displaying, and they represent the most common results of the investment (through production or services). Non-economic effects are social, ecological, physical, defensive, etc. and as such much more complicated to measure (Mihic et al., 2012).

Due to the specificity of the investments in urban renewal, the non-economic effects are equally, or maybe even more significant, than the economic effects (Jovanović, 2013). For the assessment of justifiability of the investment project in urban renewal, it is necessary to overview all the effects that the investing brings. The assessment of the investment project will be thoroughly explained in the separate chapter, and here the effects will only be classified. Regarding the importance of the non-economic effects for every urban renewal, they will be overviewed through three separate categories: social, physical and ecological effects. Summary of mentioned investment effects is given in Table 1.

According to the second classification, investment effects can be direct and indirect (mediate). Direct effects are those that give the immediate and perceptible result of the investment and have an impact on the investor's business operations, and indirect are those that the investment provides to the society in general (Jovanović, 2013). With the investments in urban renewal, indirect effects are very notable and important, because every urban renewal is oriented towards the development of the city and the society.

Table 1: Impacts of urban renewal at different aspects of city development

URBAN RENEWAL IMPACTS	
PHYSICAL	ECONOMIC
Physical renewal Developing city identity Architectural heritage preservation	Investment attracting Increase in tax revenue Attracting tourist New jobs Consumption encouraging Increasing of land and residencies value Better utilization of soil and infrastructure
SOCIAL	ECOLOGICAL
Demografic changes Social housing Public spaces Cultural facilities	Soil decontamination Reduced pollution Forming new green spaces in urban centres

With the analysis of mentioned effects, it can be concluded that some of these effects are in collision. How is it possible to achieve economic progress of a location and to promote its changes and at the same time to preserve and promote its cultural and historic values? These and similar opposed desirable effects are reflection of interests that different stakeholders have within one project, although it frequently happens that one stakeholder has need of different effects. Mostly, private investors are interested in economic effects, and public sector in social and cultural.

With suitable compromises of all stakeholders, it is possible to achieve both kinds of effects. Urban politics is considered to be the art of compromises (Gligorijević, Kurtović-Folić, Fulgosi, Kulenović, & Vasiljević, 2008). In order to accomplish urban renewal through the compromises, it is necessary to determine legal and lawful regulations that would define this kind of agreements, most of all between public and private sector. Incentives and compromises that public sector is making in order to stimulate private investors to invest in urban renewal will be thoroughly presented in following chapters.

2.2. Sustainable development and urban renewal

Sustainable development is term that was introduced in the 80's of the twentieth century in the Report of World Commission on Environment and Development, WCED, and

it is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987).

In a very short period sustainable development has grown to become an academic discipline that is constantly being researched, upgraded, changed, and that is the fact that only confirms its significance. Many classical sciences and approaches included in their theories the term of sustainable development and in that manner, they contribute to its dynamic growth and expansion and also contribute to great multidisciplinary and complexity that define this term. A lot of social, legal, ecological, sociological, economic, politic and other sciences included this term in their areas of research and interpreted it and defined it in their own way, so that is how sustainable development was also included in urban theories.

Three basic principles on which sustainable development is based on are ecological, sociocultural and economic sustainability. When taking into consideration that some of the specific goals of urban renewal are: promotion of the land value, improvement of environmental quality, living conditions, health and life, more optimal use of construction land and green surfaces, inclusion of marginal social groups in the community and similar, the connection between urban renewal and sustainable development is quite clear (Couch &

Dennemann, 2000). It is concluded that urban renewal can contribute to the concept of sustainability, especially in ecological and sociocultural aspect. However, praxis shows that many goals of urban renewal are primarily oriented on economic sustainability, rather than ecological or social.

3. INCENTIVE MEASURES OF PUBLIC INSTITUTIONS ON URBAN RENEWAL

Incentives of public institutions have financial or non-financial character. They are necessary in order to attract the investors to invest in projects with a higher amount of risk and that don't ensure profit, which is practically the only motivation to private investors when they involve in this kind of investments.

Ways used by the public sector to stimulate the private sector is the matter of praxis, laws or arrangements, and it differs from country to country. Potential ways of the incenting private sector to invest in urban renewal can be (Ionescu-Heroiu, Kessides, Pohl, & Vetme, 2010):

- Reduction of financial costs to investors: establishment of financial institutions by public sector that would give more favorable credits for investments in urban renewal, giving credit warranties, investments of public sector in expenses for recovery of land and its infrastructure, financing based on anticipated growth of tax income (planned future tax incomes are used for investments in urban renewal, especially in brownfield locations).
- Money flow improvement: subventions and donations, revolving credits, tax reduction, tax exemption or other tax reliefs.
- Improvement of investment climate: alterations of urban plans or other planning documents that regulate the purpose of land, its rise (number of floors), height, the scale of building coverage, the scale of land occupation, etc. This praxis is used to provide higher incomes to investors from their investments and to convert the cost-prohibitive project to profitable. With these incentives, the balance should be established between the needs of

public, strategy of city development and private investors. To investors interested in urban development, local government can provide support in management and advisory help. Investments in infrastructure and public transportation can have different forms and meaningful influence. Locations around traffic nodes of public transportation are becoming more and more attractive to investors while they are choosing their future investment.

4. INDICATORS FOR THE ASSESSMENT OF INVESTMENTS IN URBAN RENEWAL

With the help of determination and assessment of the justifiability of realization of the investment projects, the previous or final decision is made (depending on whether it is previous justifiability study or justifiability study) for the realization of investment projects. In order to make the investment assessment, all the effects that come as a product of realization and exploitation of the investment must be determined and overviewed.

As it was previously explained, effects caused by urban renewal can be classified in economic, social, physical and ecological. Effects represent the level of accomplishment of investment goals that were set. Therefore they are used in the assessment of the investment project validity. They are measured and quantitatively expressed by certain indicators, that is, criteria, which allow assessment if the anticipated effects will exceed necessary investments – that is basically efficiency assessment i.e. realization justifiability of the concerned investment project (Jovanović, 2013).

Efficiency assessment, i.e. profitability assessment of the investment project can be financial and social. Financial, that is, commercial, assessment includes measurement of the effects that the investment projects bring to the investor. Social or national assessment measures the effects that the investment project brings to the country in general. When it comes to urban renewal, use of both assessment is important.

For the assessment of projects of national significance, the cost-benefit analysis (CBA) method is suggested. According to Sartori et al. (2014), CBA is “an analytical tool for judging the economic advantages or disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributable to it. “ Main principle of this method is that all expenses and benefits that project might bring to the community are identified and calculated. When it comes to decision which project is better to implement, CBA helps to choose projects with lowest expenses and greatest benefits. (Mihić, Petrović, Vučković,

Obradović, & Đurović, Application, and importance of cost-benefit analysis to energy efficiency projects in public buildings: the case of Serbia, 2012).

In the Table 2. are given criteria (indicators or indexes) that are used for the assessment of the investment in urban renewal. Due to a great number of indicators, for easier understanding, they are classified based on different perspectives from which effects of the urban renewal can be observed. They are also classified according to the different phases of the investment process and the exploitation of the project.

Table 2: Criteria (indicators or indexes) that are used for the assessment of the investment in urban renewal. (changed (Park, Kim, Han, & Park, 2008)

		PERSPECTIVE				
		FINANCIAL	COMMUNITY PERSPECTIVE	PROJECT PROCESSES	INNOVATIONS	SUSTAINABILITY
PHASE	PROJECT CONCEPTION	NPV, B/C ratio, ROI	Convergence with national vision & strategy, harmonious communication among stakeholders	Cost and Schedule (for conception)	Creativity, Innovation of concept	Environmental feasibility
	PLANNING & FEASIBILITY STUDY	Financial Management, NPV, B/C ratio, ROI	Meet public demand, Improvement of public welfare & service, Local economy revitalization, Traffic jams easement	Cost and Schedule (for planning and feasibility)	Design and spatial innovation	Evaluation of environmental effects
	PREPARATION	Financial Management, NPV, B/C ratio, ROI	Reflection of public opinion, Cultural institutions supply	Delay of approval & permission, Cost, Schedule (for preparation)	Innovative technologies	Environmentally friendly design
	PROJECT EXECUTION	Financial Management, NPV, B/C ratio, ROI	Public discontent, Employment promotion, Relationship of Stakeholder's, Requirement satisfaction, Conflict between labor & capital, Quality of work performed	Cost, Schedule, Productivity, Rework, Procurement, Accidents	First-of-a-kind technology, New materials and methods, Project management with high technology	Environmentally friendly materials and methods
	MAINTENANCE	DSCR, ROI, B/C ratio	Public Discontent	Cost and Schedule (for maintenance)	Maintenance technology	Maintenance cost

4.1 Financial aspect

Financial indicators are calculated for the needs of financial analysis, which is important to an investor. They help in making the financial assessment that shows to investors what kind of effects they will have on the investment.

NPV – Net Present Value – dynamic criteria for assessment of investment that shows the sum of discounted net effects that are realized in the period of exploitation of the investment (Jovanović, 2013).

C/B RATIO – shows how many units brings each unit of spent assets

DSCR (Debt-Service Coverage Ratio) – measure of the financial sustainability of the project, i.e. possibility of repayment of the financing (interest and principal) that was decided for the project. It shows the money income that is available for paying off the debt obligations towards the bank, funds and all the parties that approved the loan. (Gatti, 2008)

ROI (Return on Investment) – presents the relation between the net outcome of project – benefit (savings in expenses or growth of income reduced by total project expenses) and the total project expenses (Gatti, 2008).

4.2 Aspect of community and public sector

Effects that are observed and evaluated from this aspect are classified in indirect economic and non-economic. Since urban renewal has important influences on social and economic circumstances, on local and as well as on a national level, for the influence of project on these segments especially is interested public sector and local population and community, as users of renewed areas. Local community is interested in the influence of urban renewal on life quality (public transportation, the building of schools, kindergartens, health centers, green surfaces, safety, etc.). Above all, it is of interest to the public sector that every urban renewal is in compliance with laws and valid rules and plans. Subsequently, it is of its interest to stimulate the opening of new workplaces, building apartments that the

population can afford, attraction of new investments and tourists, etc. (Utz, 2014)

In order to make the assessment of the urban renewal it is necessary to identify the existence of these effects, and quantitatively show their influence by indicators. If the assessment is made for a project that is completely financed by the public sector, and from which is not expected to have a direct economic effect, but only effects on the community are important, these indicators can be sufficient for the assessment of the investment justifiability. However, if the private sector is also participating in investment, then the assessment of the financial effects also must be taken into consideration (these effects are crucial for private investors while making decisions about investments).

4.3 Project aspect

For measuring the realization success of each project the expenses are crucial, compliance with agreed dynamics of project activities, that is, compliance with agreed deadlines, quality of works, so these parameters are measured in every evaluation of the urban renewal project (Park, Kim, Han, & Park, 2008). The time, in the whole project process, is very important, because every delay causes further delays of following activities, and that increases the expenses. The quality of work during the construction should be in compliance with prescribed quality, and every mistake and repetition of work require additional unplanned expenses. Indicators for assessment of the investment success, from the project aspect, quantitatively show a measure of accomplishment of these effects.

4.4 Innovation aspect

In order to have better performances of buildings, energy savings, recognizability of the design or contemporary methods in project management, innovations are often introduced in urban renewals, as well as in all other projects. Also, urban renewal keeps generating a broader conception of urban planning that includes social, cultural and ecological (in order to meet growing public requirements on the environment and

sustainable development) dimension (Jessen, 2016).

Use of new technologies and construction methods, project management, use of innovative materials, design or renewable energy sources are some of the project characteristics that are evaluated and have an influence on success assessment of the project. As innovative materials and technologies are very expensive, it can happen that the project is justified from this aspect, but from a financial aspect, it can be completely cost-prohibitive. These criteria are not sufficient for making the assessment of investment justifiability, and they have to be used in combination with other criteria.

4.5 Sustainable development and environment protection aspect

In the past few decades, sustainability issues were main concerns in achieving social and economic development and environment protection. Recycling of materials, processing of waste, use of alternative energy sources, decreasing emission of harmful gasses and particles, etc. are just some of many ways that are used to achieve sustainability. Since the world is facing energy and environmental issues on a daily basis, the importance of energy sustainability is continuously growing. Improvement in energy efficiency and increased consumption from renewable energy sources could improve aspects of energy sustainability (Mihić, Petrović, & Vučković, Comparative analysis of global trends in energy sustainability, 2014).

Assessment of mentioned ecological effects, in the context of sustainable development, is very important for the assessment of the entire investment in urban renewal (Park, Kim, Han, & Park, 2008).

5. COMPARATIVE ANALYSIS OF PRACTICAL EXAMPLES

5.1 Distillery District, Toronto

The first case study is the analysis of urban renewal of distillery in the center of Toronto, Gooderham and Worts distillery that after the reconstruction in 2003 was named "The Distillery District". On the area of more than

5 hectares, there are over 30 industrial objects that in the 19th and at the beginning of the 20th-century were distillery, spaces for the bottling of alcohol, packaging production, and warehouses. In the middle of the 19th century, this distillery was the largest one in the world, with over 2 million produced liters of whiskey per year. However, when the prohibition started and other distilleries developed, the production started decreasing slowly, and in 1990 distillery officially stopped working. (Mathews, 2010)

The zone where the distillery is situated is in the city core which was the center of the industrial production during the industrial period. As the post-industrial period led to moving the production to new suburbia, this part of the city was becoming more and more abandoned and squalid. Because the Distillery district is under state protection (National Historic Site), public institutions weren't allowed to let this complex decay although the production in it was officially shut down. During the last decade of the 20th-century city of Toronto tried to attract different investors that would finance the renewal of the protected zone. The change of zoning law and the purpose of land from industrial to miscellaneous was done, what allowed the use of the land for a living, light industry, entertainment, commercial and business spaces, etc. Even though, many suggested project came across the severe resistance of community and public, which were against the commercialization of the historical heritage. (Nikolić, 2014)

5.1.1 Public institutions incentives and Artscape Studio urban renewal effects

In 2001, the company Cityscape Development bought the distillery complex and had a clear vision of how they wanted it to be renewed, suited for the needs of public and the city. They saw this abandoned industrial zone as a stage for the development of art and culture, future center of cultural activities and festivals in the city. (Artscape, 2002)

Through cooperation between private investors, the city of Toronto, future users of the space, the first urban renewal in the distillery complex was carried out, about 4500 m² of Artscape Studio. Summary of the

sources of financing, according to Business Artscape INC. (Artscape, 2002) is given in plan for Distillery District by Toronto Table 3.

Table 3: Mix of funding and financing Artscape's Distillery District project

Subventions	CAD
Department of Canadian Heritage	900 000
Ontario Trillium Foundation	75 000
Cityscape	690 000
In-kind services and fund raising	110 000
Tenant contribution	45 500
Credits	
Loan by 401 Richmond Limited	600 000
Bank loan (guaranteed by City of Toronto)	400 000
Total cost:	2 820 500

The Artscape Studio renewal was the trigger for further activities in the revival of the Distillery District: the attractiveness of the location became higher, and the reconstruction of other buildings was started. City authorities, cheered up by this successful renewal, approved higher rise (number of floors), higher scale of building coverage (urban parameter that shows the relation between gross developed building surface of all the levels of the object and the surface of the lot) and the scale of land occupation (urban parameter that shows the relation between horizontal projection of the built object and the surface of the lot) that were necessary to investor in order to make profit and pay off the investment. These privileges were given to investor as a favor in return for benefits that the community gained with the investment. This "exchange" is regulated by the law in the document "Section 37". (Artscape, 2002) Based on this document the city of Toronto is entitled to make agreements with investors and to conduct accommodations (that are controlled) like permits for higher rise than the prescribed, higher level or scale of building coverage, and in return expects from investors to participate in social or cultural improvement of the certain location (by building kindergartens, schools, green surfaces, cultural institutions etc.).

Through this program, the city is supporting urban renewal without jeopardizing the living needs with the preservation of contents that are making a living in the city more pleasant.

And that it was how the permit for building residential towers and additional office space was provided to the nearby lots that were spatially and functionally merged to the Distillery District. With this acquisition of the nearby land and with the building of new squares that were sold very soon, the additional value was given to the land and the immovable assets in the Distillery District.

Once abandoned industrial complex today is modern pedestrian zone, with art galleries, exhibition rooms, theatre scenes, art shops, cafes and restaurants (to food chains and cafeterias it is not allowed to open their objects here), organized public areas, with residential and business space that enables this zone to live 24/7 during the whole year. It is one of the main tourist attraction of the city; it attracts eminent artists to create or to live in it, visitors, new tenants. The picture of abandoned industrial part of the town was improved, and great number of new public areas, cultural and social contents were offered to citizens.

5.2 Urban Park High Line, New York

New York Park “High Line” is the example of how local community and engagement of the public can initiate urban renewal and development of the city, with respecting the history and architectural heritage values. Actually, at the end of the last century, local citizen association was against the initiative of the city leaders to tear down the old railway tracks that weren't in function and in its place to develop commercial contents in Chelsie – part of the city that the artist started to populate and to revive. Authorities back then saw on brownfield location a surface that they wanted to build without any respect of previous development and life in this quarter that was becoming more and more popular. Citizen Association of enthusiast "Friends of a High Line", owners of immovable assets near the abandoned railway tracks opposed these plans, and with the support of public figures and latter, of the new city authorities, they gathered funds and realized their idea to include the abandoned railway tracks in the modern city development (Ascher & Uffer, 2015). Their idea was, in imitation of Paris Promenade Plantee, to form unconventional line park that would enable to New Yorkers and tourists to travel around the city and to experience it “from above”, leaving the public transportation below the level of the park, and

creating like that the new city attraction that would attract further investments.

5.2.1 Public institutions incentives and High Line urban renewal effects

The cooperation between the “Friends of a High Line” and the City management was of great importance for the realization of this project. The decision was made regarding the changing the purpose of land, from industrial to the miscellaneous purpose, and that made the possible building of various contents. The city is as well the biggest financier of the project, with 123.2 million dollars that it had invested in the High Line renewal. With the help of the New York State, Government of the USA and private donations (credits for the donation gathering belong to the "Friends of a High Line"), the total length of 2.5 km of the park was realized through three phases during the period from 2006 until 2014.

Maintenance was entrusted to the association “Friends of a High Line” which from the beginning of the project realization until 2015, gathered 300 million dollars in total from donations of the private sector for the scope of building and maintenance (Ascher & Uffer, 2015). Summary of the sources of financing was given in the Table 4., according to data from NYCEDC web-site (The High Line, 2016).

Table 4: Mix of funding and financing High Line

Subventions	Millions USD
City of New York	123.2
USA Government	20.3
State of New York	0.4
Private donations, collected by "Friends of a High Line"	43.4
Total cost	187.3 (Phase 1&2: 152.3 mil USD, Phase 3: 35 mil USD)

The success of this project and caused effects exceeded everyone's expectations. The association "Friends of a High Line" made the estimation that the High Line will attract 400 000 tourists per year and that it will bring to the city budget 250 million \$, through taxes, during the exploitation period of 20 years. Based on this estimation they succeeded in convincing the city to support the project.

However, both estimations failed: this park is visited by 4 million tourists per year and planned income from taxes is around 900 million dollars (as the consequence of the High Line effect on the development of nearby land). The most significant effect that was achieved with the creation of this park is, by all means, financial, in the context of raising the value of the existing immovable

assets and construction of the new ones near the park. After the opening of the second phase of the reconstruction in 2011, New York City Department of City Planning came out with the data that since 2006, 29 new objects were realized (or their realization started) from which 2 558 were residential units, 1000 hotel rooms and 40 000 m² of office and gallery space. (Ascher & Uffer, 2015) A new object built near the High Line are signed by influential architects of today, and this is how this zone became the greatest “exhibition” of laureate of the prestigious Pritzker Prize. Jean Nouvel, Zaha Hadid, Renzo Piano, Frank Gehry, Norman Foster are the greatest architectural names whose project are connected by the High Line. The famous New York Whitney Museum (The Whitney Museum of American Art) found its new home in the High Line.

Exactly this development leads us to the conclusion that the establishing of the unique city park was only the catalyst of changes on the abandoned industrial west coast of Manhattan. Investment in the urban renewal of old railway tracks caused halo effect and attracted many new investments that together with the reconstruction contributed to the vertiginous economic growth of this part of New York. Figure 1. compares average price of the real estate in the blocks alongside the park (divided according to the construction phases in phase one and phase two) and in the neighboring block, according to Quintana (Quintana, 2016). Also, it shows the relation between prices of residential units in existing and in newly built buildings (that were built as a part of the development that was caused by the park establishment).

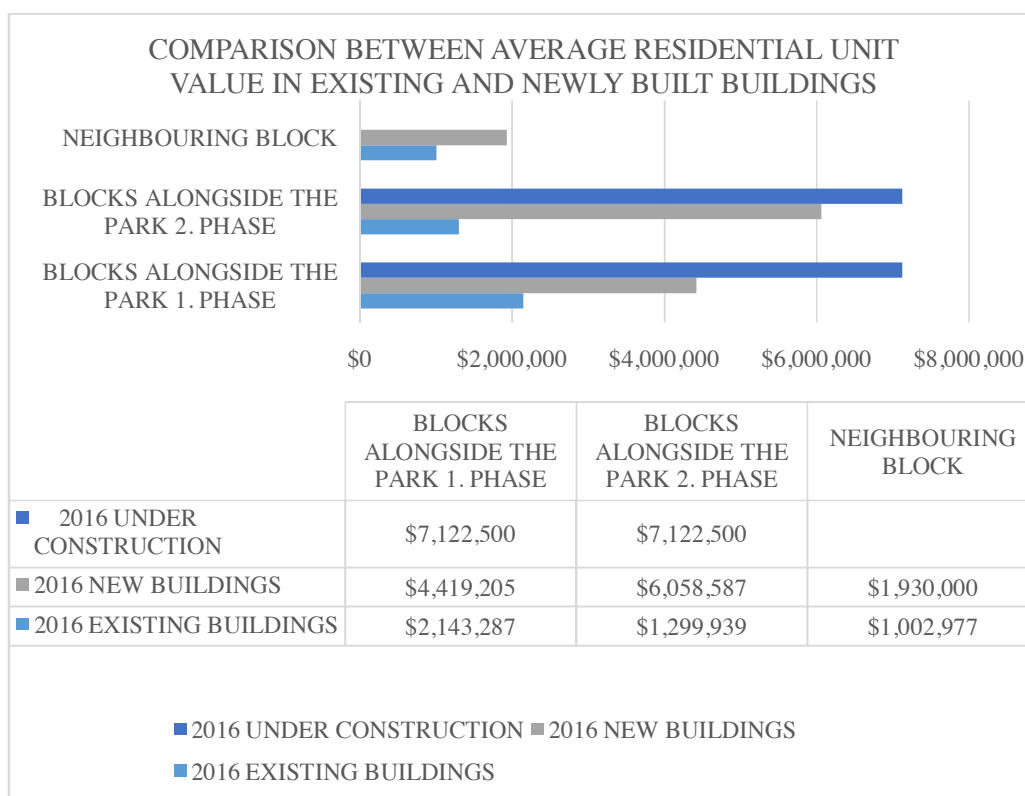


Figure 1: Link between the average residential unit value in existing and newbuilt buildings in 2016.

Social effects caused by the New York’s new park are also important. It became the place where New Yorkers meet, place with open galleries for permanent and temporary exhibitions, a place to rest and to hide from

the hectic city life. In imitation of this project, many similar projects of green oasis were started throughout the United States of America and Canada, which is also one of the important effects caused by this project.

5.3 Comparative analysis of case studies

Table 5. shows a comparative analysis of case studies, a summary of actors of public-private partnerships that were made because of the urban renewal, goals, and effects of the explained investment projects. With analysis of the effects, it is concluded that the set goals were achieved in both examples.

Table 5: Comparative analysis of case studies

	PROJECT DESCRIPTION	OBJECTIVES	ACTORS OF PUBLIC-PRIVATE PARTNERSHIP	EFFECTS
TORONTO, DISTILLERY DISTRICT-ARTSCAPE (industrial brownfield)	Repurposing and renewal of vacant industrial site (4650m2) into creative hub with artistic ateliers, galleries, offices, performance studios and similar cultural and artistic facilities	1. Create affordable studio spaces for non-profit arts organizations and professional individual artists 2. Re-use of one of the most significant Canada's historic sites, 3. Facilitate and enhance the accessibility of artists to the public and the marketplace 4. Develop a dynamic ecology of artists and art organizations who interact with each other, share resources 5. Demonstrate the revitalizing impact the capital projects in the arts have on communities and neighborhoods	1. <i>Artscape</i> - Non-profit organization that rents Artscape studios from the owner performs urban renewal and maintenance of renewed buildings 2. <i>Cityscape</i> - owner 3. City of Toronto	ECONOMIC
				-the increase in property value -attracting investors to invest in further Distillery District urban renewal -new jobs -tourist attraction -new residential units -revitalisation of polluted and abandoned area
				SOCIAL
				-promotion of art -cultural facilities -creation of public space
				ECOLOGICAL
				-renewal of abandoned brownfields as potential pollutants
NEW YORK, HIGH LINE (relic railway)	Repurposing and renewal of 2.5 km of elevated abandoned railway into park and open art space	1. Revival of abandoned railway and its inclusion into modern city development 2. The preservation of architectural heritage, as space benchmark during generations 3. Increased property value 4. Creation of public green space 5. New tourist attraction 6. Creation of public art-space	1. Association <i>Friends of a High Line</i> – urban renewal initiator, performs urban renewal and maintenance of the park 2. City of New York-owner	ECONOMIC
				-increased property value- bringing investors to contribute to further projects -new jobs -tourist attraction -new residential and commercial units
				SOCIAL
				-creation of public space - promotion of art
				ECOLOGICAL
				-new green spaces -revitalisation of polluted and abandoned area

Effects from these investments are important, especially indirect economic effects that were accomplished. This shows proportions of the immense influence that urban renewal project realization can have a great number of development aspects of the urban tissue. Both

projects are realized through a public-private partnership of the city management and non-profit organizations, and, in the Toronto case, the private owner of the brownfield location. Influences that citizens' initiative and non-governmental organizations had in the

realization of these projects were also analyzed. Influence of public sector, by all means, shouldn't be neglected because it gave subventions, credits and other incentives for project realization. Without the public-private partnership realization of these project most probably would be impossible. Also, it can be noted that none of the newly formed areas has mostly commercial purpose.

6. CONCLUSION

The modern development of cities and urban planning can have a negative impact on historic areas of cities and degrade them. In developed countries modern approach towards the sustainable development of cities intercedes that the activities in the field of urban planning and construction should be based on deeper knowledge, understanding, and respect of history and the meaning of built space, therefor only this way historic meaning and value can be preserved, potentially used and the message how significant these sites are can be transmitted. In our country, this approach is only in the beginning. The awareness of the importance of architectural heritage is rising, but urban renewal and urban planning, and not so seldom projecting of the object, still aren't integrated processes.

Effects that adequate urban renewal of architectural heritage has on the modern development of the city nucleuses are important and represent the core of economic, social and ecological development. The accomplishment of these effects requires the engagement of government, citizens and private investors. Enactment of laws, urban and planning documents (and compliance with those) that support investing in urban renewal and rising of the awareness of citizens regarding the significance of historic, cultural and architectural heritage are the main prerequisites for creating an appropriate business climate that would attract domestic and foreign investors to invest in urban renewal.

REFERENCES

Artscape, T. (2002). *Artscape Studio in the Distillery District-Business Plan*.

- Retrieved from Toronto Artscape: www.artscapediy.org
- Ascher, K., & Uffer, S. (2015). The High Line Effect. *Global Interchanges: Resurgence of the Skyscraper City* (pp. 243-228). Council on Tall Buildings and Urban Habitat.
- Couch, C., & Dennemann, A. (2000). Urban regeneration and sustainable development in Britain - the example of the Liverpool Ropewalks Partnership. *Cities* 17(2), 137-147.
- Gatti, S. (2008). *Project Finance in Theory and Practice*. Elsevier Inc.
- Gligorijević, Ž., Kurtović-Folić, N., Fulgosi, A., Kulenović, R., & Vasiljević, N. (2008). *Report of the implementation of the framework of sustainable development on monument funds in Belgrade*. Belgrade: The Cultural Heritage Protection Institute of the city of Belgrade.
- Ionescu-Heroiu, M., Kessides, C., Pohl, W., & Vetme, N. (2010). *The Management of Brownfields Redevelopment*. World Bank, Europe and Central Asia Region, Sustainable Development Department.
- Jessen, J. (2016, 12 25). *Urban Renewal - A Look Back to the Future. The Importance of Models in Renewing Urban Planning*. Retrieved from Deutsches Insitute fur Urbanistik: <https://difu.de/node/5993>
- Jovanović, P. (2013). *Investment Management*. Belgrade: VŠPM.
- Law on Planning and Construction. (72/2009). *Official Gazette of the Republic of Serbia*, Chapter 1, Article 2.
- Mathews, V. (2010). *Place differentiation: Redeveloping the Distillery District in Toronto*. Toronto: University of Toronto.
- Mihić, M., Petrović, D., & Vučković, A. (2014). Comparative analysis of global trends in energy sustainability. *Environmental Engineering and Management Journal*, 13(4), 947-960.
- Mihić, M., Petrović, D., Vučković, A., Obradović, V., & Đurović, D. (2012). Application and importance of cost-benefit analysis to energy efficiency projects in public buildings: the case of Serbia. *Thermal Science*, 16(3), 915-929.

- Nikolić, I. (2014). *Urban Recycling of derelict industrial sites. Analysis of socio-economic redevelopment of post-industrial cities*. Barcelona: Universidad Politecnica de Cataluna.
- Park, H., Kim, D. Y., Han, S. H., & Park, S. H. (2008). Approaches for performance measurement of urban renewal megaprojects. *The 25th International Symposium on Automation and Robotics in Construction. ISARC-2008* (pp. 804-809). Vilnius: Vilnius Gediminas Technical University Publishing House "Technika".
- Quintana, M. (2016, Avg 08). *Changing Grid: Exploring the Impact of the High Line*. Retrieved from Street Easy: <http://streeteasy.com>
- Roter-Blagojević, M., & Nikolić, M. (2008). Importance of the identity and authenticity preservation in the process of urban renewal – the role of residential architecture in Belgrade at the end of the 19th century and the beginning of the 20th century in the establishment of the character of hi. *Heritage*, 117-128.
- Sartori, D., Catalano, G., Genco, M., Pancotti, C., Sirtori, E., Vignetti, S., & Del Bo, C. (2014). *Guide to Cost-Benefit Analysis of Investment Projects*. European Commission.
- The High Line*. (2016, Sep 12). Retrieved from NYCEDC: www.nycedc.com
- Utz, K. (2014). *Urban Renewal Guidebook*. KPMG.
- WCED. (1987). *Our Common Future*. London: Oxford Paperbacks.

BUSINESS TREND ANALYSIS OF SERBIAN TELECOMMUNICATION OPERATORS

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Abstract: This paper is presenting the state of Serbian telecommunication market. Steps needed for the market to be liberalized are firstly analyzed. The global market picture, revenues by service, investments and structure of investments are shown. Furthermore, we have analyzed legal framework and market governance and highlighted recent changes. Privatization of Telekom Srbija, the always important question for Serbia, is particularly scrutinized. The fixed and mobile network market analyses are conducted and some trends are observed.

Key words: Fixed telephone market, internet services, market analysis, mobile market, telecommunications

1. INTRODUCTION

Serbian telecommunication market has been liberalized and legislation which is in line with the principles of the EU regulatory framework for communications has been introduced (Tintor, Milićević, Janković, & Radunović, 2009). This framework promotes competition as the most efficient way to provide telecommunications products and services while ensuring universal access. Market liberalization went one step further in April 2014 with the introduction of fixed number portability (RATEL, 2014b).

Progress in regulating the market has been made when the Serbian state-owned operator was partially privatized in 1997, losing its monopoly status in mid-2005. In addition to the development of legal and regulatory measures, the sector is driven by *Information Society Development Strategy in the Republic of Serbia until the year 2020*.

Significant investments are made in network infrastructure by state-owned and other operators (Benković et al., 2011), for providing internet services available via ADSL, cable, optical fiber and wireless. Internet usage in Serbia is growing (The World Bank, 2016), where the Wide Area Network represents the majority of Internet subscriptions.

Serbia has a broad market of broadcasters, with programs available for the distribution of radio and TV programs via cable, Multichannel Multipoint Distribution Service (MMDS), terrestrial free-to-air (FTA), and a full range of Internet Protocol Television (IPTV). Pay TV market is healthy, with strong growth despite the difficult economic conditions. Digital TV program is available. A plan for termination of analog signal has been available and is put into practice.

The aim of this paper is to present current trends in Serbian telecommunication market. In part two is shown an overview of the market, including revenue and investments by service. Part three is featuring legal framework and governance of telecommunication market. In the following, part four, attention is placed on privatizations. Part five is about fixed network operators and part six is shedding light on mobile network operators, their revenue, market share and signal coverage.

2. SERBIAN TELECOMMUNICATION MARKET

On the Serbian mobile market, services are provided by three mobile network operators (MNOs) and two mobile virtual network operators (MVNO) (Večernje Novosti, 2016). The high level of mobile technologies penetration suggests a possible saturation of

the mobile conversations. This picture may be false as many people own more than one SIM card. MNOs are focused on increasing Average Revenue per User (ARPU) by encouraging prepaid users to shift to postpaid plans together with the promotion of increased spending on mobile network/content.

Mobile data services have become an important source of new revenue growth, while opportunities for revenue from new subscribers slowly disappear from the mature mobile market. Making 3G and 4G services available had a positive impact on the use of mobile data because it enhances the user experience with present applications and

provides engaging content through higher download speed. However, the acceptance and use depend on the presence of technologically capable devices on the market, availability of desirable content, and the price of mobile data plans.

The total revenue generated in the electronic communication market of the Republic of Serbia in 2015 totalled to around €1.55 billion – 8.3% increase in compare to 2014. Revenues from electronic communication had a share of 4.72% in gross domestic product (GDP) of Serbia. Revenues from services are displayed in Table 1.

Table 1: Telecommunication market revenue in €million (based on RATEL, 2015, 2016)

Year	Fixed	Internet	Cable	Mobile
2008	279.96	72.58	69.17	913.43
2009	280.79	92.00	76.85	826.74
2010	292.38	112.04	86.38	769.20
2011	362.78	123.50	101.52	846.70
2012	334.62	149.34	109.35	850.00
2013	312.26	161.10	116.67	877.70
2014	311.43	165.82	125.40	846.90
2015	309.77	179.40	145.69	902.00

The structure of revenues by services for the period 2008-2015 is presented in Table 2. We can see that mobile has the largest share in revenues, which is growing since 2010

(from 52.8% to 58.3% in 2015). Internet and media content distribution share in revenues is, also, increasing.

Table 2: Structure of revenues by services (based on RATEL, 2015, 2016)

Year	Mobile	Fixed	Internet	Media content distribution	VoIP	Broadcasting
2008	61.00%	25.00%	7.00%	4.00%	-	3.00%
2009	54.82%	28.95%	7.79%	5.09%	0.04%	3.32%
2010	52.80%	28.90%	8.90%	5.90%	0.20%	3.50%
2011	52.99%	27.93%	9.13%	6.03%	0.43%	3.44%
2012	55.16%	24.25%	9.60%	7.09%	0.21%	3.57%
2013	56.63%	20.97%	11.89%	7.53%	0.12%	3.55%
2014	57.00%	22.00%	11.00%	8.00%	0.10%	-
2015	58.30%	19.70%	11.60%	9.40%	0.30%	-

Total investments in electronic communication sector in 2015 were around €276 million – 48% increase in compare to 2014 (RATEL, 2016). This increase in investments is highly promising for the future

period. The highest amount of investments goes to mobile services and fixed is following most of the times, but in 2015 investments in internet service are higher than in fixed.

Table 3: Structure of investments by services (based on RATEL, 2010, 2011, 2012, 2013, 2014a, 2015, 2016)

Year	Total investments	Mobile	Fixed	Internet	Media content distribution	VoIP
	million €	million € and (% of investments in a given year)				
2009	288	148.64 (51.61%)	98.61 (34.24%)	9.65 (3.35%)	28.14 (9.77%)	2.94 (1.02%)
2010	274	132.11 (48.22%)	75.09 (27.4%)	31.70 (11.57%)	34.77 (12.69%)	0.33 (0.12%)
2011	243	138.58 (57.03%)	56.67 (23.32%)	10.86 (4.47%)	35.89 (14.77%)	1.00 (0.41%)
2012	232	112.40 (48.45%)	51.60 (22.24%)	23.34 (10.06%)	44.40 (19.14%)	0.21 (0.09%)
2013	262	111.61 (42.6%)	62.71 (23.94%)	28.20 (10.76%)	59.44 (22.69%)	0.03 (0.01%)
2014	186	65.58 (35.26%)	48.40 (26.02%)	19.33 (10.39%)	52.68 (28.32%)	0.02 (0.01%)
2015	276	105.87 (38.36%)	68.12 (24.68%)	77.14 (27.95%)	24.87 (9.01%)	0.03 (0.01%)

3. LEGAL FRAMEWORK AND GOVERNANCE

The Republic Regulatory Agency for Telecommunications (RATEL) was established at the end of 2005. Rights and responsibilities of RATEL are regulated by Telecommunications Law (Telecommunications Law, 2003) and include:

- Regulate activities in the telecommunications sector, and in particular where there are one or more public telecommunications operators which, under the criteria established herein, have a significant market power;
- Manage and monitor activities in the telecommunications sector;
- Promote interconnection among telecommunication networks or operators on an unbiased basis;
- Settle disputes between telecommunications operators in certain situations;
- Regulate the use of radio frequency spectrum and assign radio frequencies in accordance with Telecommunications Law;
- Grant licenses to telecommunications operators for specific telecommunications activities;
- Prepare and conduct public tenders for individual licenses in accordance with Telecommunications Law;

- And other responsibilities in accordance with Law.

The special responsibility of RATEL is a prevention of monopolies and monopolistic behaviour by (Telecommunications Law, 2003): determining whether a public telecommunications operator has significant market power (SMP) – market share higher than 20%; explicitly prohibiting or restricting any anti-competitive or monopolistic activity; by controlling any acquisition, merger, takeover or any other change regarding the type of organization of telecommunications companies which may outcome in the establishment of a monopoly or a company with a significant market power.

The managing board is formed of chairperson and four members proposed by the Government; the National Assembly is appointing the chairperson and members of the managing board for the period of 5 years.

In May 2012 RATEL was granted observer status in the Body of European Regulators for Electronic Communications (BEREC), and since September 2012 it has been a member of the Independent Regulators Group (IRG). RATEL is also actively involved as a regulator in the work of the International Telecommunication Union (ITU), European Conference of Postal and Telecommunications Administrations (CEPT) and European Telecommunications Standards

Institute (ETSI) (RATEL, 2014a). RATEL was merged with Republic Agency for Postal Services (RAPUS) in 2014, and since then it also regulates postal services market.

An important feature of Telecommunications law is enabling interconnection among telecommunication companies. Based on article 46, companies are obligated to accept all demands for interconnection. If companies cannot make the agreement within three months, RATEL has the authority to make a decision which is obligatory for both sides. The operators with SMP have to offer interconnection services which need to be transparent, non-discriminatory and costs-based. Terms of providing interconnection are announced in a Reference Interconnect Offer (RIO), which is previously approved by RATEL. Unique termination charge is set for all fixed networks in Serbia. In 2009, the government approved the action plan for implementing the National Strategy for Development of Telecommunications, which involved fixed number portability (NP) and mobile number portability (MNP). After some problems in the beginning, those changes were implemented in 2010.

3.1 Universal services

Telecommunications law from 2013 (*Telecommunications Law*, 2013) prescribes a minimal set of universal services. It includes

enabling access to communication networks and publicly available telephone services at a fixed location, information services and public phonebooks, usage of public phones and free emergency calls. RATEL decided that the following operators are obligated to provide universal services:

- Telekom Srbija,
- Telenor,
- VIP mobile,
- Orion Telekom.

Acts relating to the fields of telecommunications, and electronic communications in general (*Telecommunications Law*, 2003), as essential elements of universal services include certain measures that are intended to provide people with disabilities and low-income users with viable access to telecommunications services (Bogojevic, Gospic, & Petrovic, 2010).

3.2 Number portability

Mobile numbers portability was introduced in 2010. RATEL forecasted that 10% mobile phone users would change operator in the first year. By the end of the year around 37,000 numbers have been ported, and by the end of 2015 total of around 418,000 numbers have been ported.

Table 4: Annual and cumulative mobile number porting (RATEL, 2016)

Year	Mobile number porting	Cumulative
2011	37,037	37,037
2012	77,785	114,822
2013	85,673	200,495
2014	99,142	299,637
2015	118,490	418,127

Fixed number portability was planned to be introduced in 2012, but the service became available in April 2014. By the end of 2015

152,851 in total have been ported, mostly from Telekom Srbija's network to other operators.

Table 5: Annual and cumulative fixed number porting (based on RATEL, 2015, 2016)

Year	Fixed number portings	Cumulative
2014 (Apr-Dec)	41,513	41,513
2015	111,338	152,851

4. PRIVATISATIONS

The laws which are allowing privatization were voted for in 1989, 1990 and 1994, and those strongly favored domestic investors and employees through a system of preferential discounts on shares. Not until 1997 did a law come into force that opened the path for foreign investors to purchase enterprises (Upchurch & Marinković, 2011).

4.1 Telekom Srbija

Privatization of Telekom Srbija started in 1997 when 49% of PTT Holdings (holding company for Telekom Srbija) were sold to STET International Netherlands NV (branch office of Telecom Italia in Netherlands) and Hellenic Telecommunications Organization S.A. (OTE) from Greece for €12 million. Telecom Italia got a portion of 29% and OTE 20%. Each of the two new owners had the right to name two members of the nine-member executive board. Thus the government kept a golden share and the veto right for any strategic decision.

Telekom Srbija was approved a 20-year license for fixed telecommunication services (first eight years as a monopoly) and mobile telecommunication services. After this Telekom Srbija became the second mobile operator in Serbia.

At the beginning of 2002, both Telecom Italia and OTE declined suggested changes for their contracts. Changes were proposed regarding annual commission. In February 2003, Telecom Italia sold its stake of 29% for €195 million. After this transaction, Telekom Srbija owned 80% of its shares and OTE 20%.

In 2008, the Serbian Ministry of Economy planned to sell its 80% stake in Telekom Srbija. The plan was postponed because of global financial crisis. The government activated the privatization plan in 2010 again, by offering 51% of shares via international tender, pricing the company at €2.43 billion. The privatization failed again, after setting a minimum price of €1.4 billion.

In January 2012, the government paid out OTE's 20% stake in the company for €380 million. In May, the same year, the

government decided to give 20% of Telekom Srbija's shares to Serbian citizens and 14.95% to employees and former employees free of charge.

From March to December 2015 the government tried to privatize Telekom again. After receiving the highest bid of €1.2 billion from Apollo, the government withdrew the sale as their minimal price was €1.4 billion and political opposition was strongly against the sale.

Telekom Srbija has a stake in multiple other companies (Telekom Srbija, 2016):

- Telekomunikacije Republike Srpske d.o.o. and Mtel d.o.o. (65%), Banja Luka, Republika Srpska;
- mtel DOO (51%), Podgorica, Montenegro;
- Telus (100%), Belgrade, Serbia;
- TS:NET B.V. (100%), Amsterdam, Netherlands;
- mtsd.o.o. (100%), Kosovska Mitrovica, Serbia;
- HD-WIND o.o. (51%), Belgrade, Serbia;
- mtsbanka d.o.o. (76.05%), Belgrade, Serbia;
- Dimedia Group SA (50%), Geneva, Switzerland;
- GO4YU d.o.o. (50%), Belgrade, Serbia.

4.2 Telenor (ex Mobtel)

Privatization of Mobtel started in 2006, with legislation changes. Namely, after adopting the changes of Telecommunications law and settling a dispute with minor shareholders from Austria a tender for an advisory role in privatization was launched. Among many applications, a consortium composed of Rothschild & Cie got the advisory role with the cheapest offer.

Conditions set by the government were: starting price of €800 million; potential buyer had to be the mobile operator with at least three million users and profit of €500 million in 2005. In order to make the offer more attractive, the government stated that the mobile market would not be opened for other operators until 2009.

Ten potential buyers made their offers (Telenor, TeliaSonera, Israel's Investment Discount Corp (IDC), Orascom Telecom, Tele2, Deutsche Telekom, Etisalat, Mobilkom, Moscow Cellular Communications, MTS and France Telecom) and after few bidding rounds only Mobilkom, Telenor and Orascom remained. At the end of the process Telenor successfully bought Mobtel after eight bidding rounds for €1.513 billion.

5. FIXED NETWORK OPERATORS

There are only three license holders for public fixed telecommunications network and services: Telekom Srbija, Orion telekom, and Telenor. In accordance with Law on Electronic Communications (Article 149), since January 2012 the provision of public fixed telecommunications network and services has been under the general

authorization regime. This means that in addition to three license holders, voice service via fixed network was also provided by Serbia Broadband (SBB), I.Kom, Radijus vektor, KOPERNIKUS TECHNOLOGY, BeotelNet-ISP, Telemark systems, Masko, Invest-Inženjering, ABA TEL, Softnet, Sat Trakt, ASG NET (began with service provision in late 2015), BPP Ing (began with service delivery in late 2015), JP Pošta Srbije (started with the provision of services in late 2015).

In 2012, the biggest cable TV, SBB started offering fixed telephony service and currently is the biggest fixed telephony operator after Telekom Srbija with 8% market share.

Besides a declining trend in fixed telephony usage, this service remains big revenue generator, which can be seen in Figure 1.

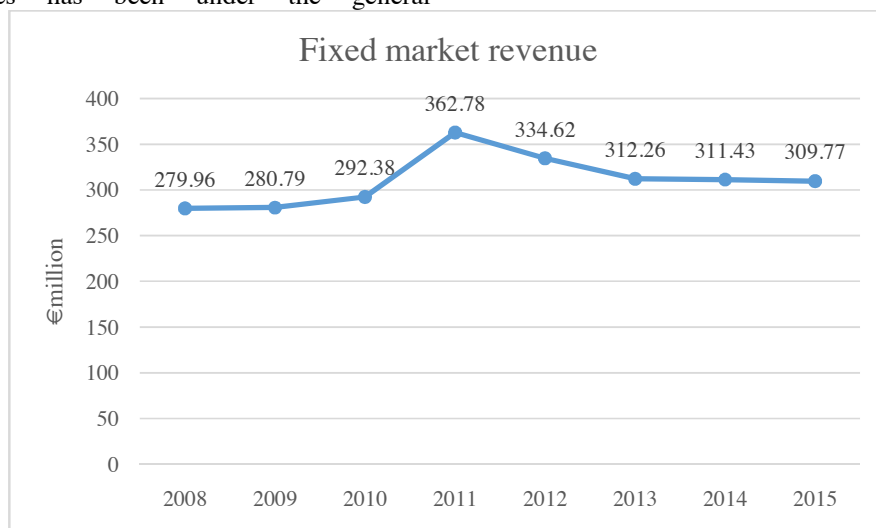


Figure 1: Fixed market revenue

5.1 Telekom Srbija

Telekom Srbija is state-owned telecommunication operator. It is offering voice, data, internet and broadband access as well as mobile services through MTS, started in 2007. Ownership of the company is shared between: Republic of Serbia (58.11%); Telekom Srbija (20%); the citizens of the Republic of Serbia (14.95%); current and former employees of Telekom Srbija (6.94%).

Telekom Srbija is part of Telekom Srbija Group. Taking into account decrease of revenues from fixed telephone services after liberalization, Telekom Srbija expanded to neighboring markets and owns multiple subsidiaries, as mentioned before. Since 2006 Telekom Srbija is considered SMP operator and has obligations specific for SMP, like controlling sales prices, prohibition of cross-subsidization, enabling network access and interconnection and non-discrimination, as well as cost-based operation and transparency.

Table 6: Telekom Srbija Group financial data (Telekom Srbija, 2016)

Year	Revenue	EBITDA	Net profit
	RSD million		
2014	122,413	46,539	17,804
2015	127,788	43,483	14,673

Revenues from internet services are increased as a result of greater number of ADSL subscribers, revenues from multimedia services increased together with a number of

IPTV and WEB-TV users, while revenues from mobile telephony decreased as a result of decreased number of prepaid users and lower (regulated) roaming tariff.

Table 7: Telekom Srbija Group revenues by service (Telekom Srbija, 2016)

Year	Fixed telephony	Mobile telephony	Internet	Multimedia	Other
	RSD million				
2014	44,204	56,936	10,094	5,729	5,450
2015	41,458	59,364	10,705	7,854	8,407

5.2 SBB

Cable broadband is available through more than 20 internet providers, while Serbia Broadband (SBB) is the largest cable company in Serbia. SBB is also distributing Total TV via Direct to Home (DTH) platform on domestic, but also other parts of ex-Yugoslavia market. Majority owners until recently were Mid Europa Partners (MEP) and European Bank for Reconstruction and Development (EBRD), and in March 2014 investment firm Kohlberg Kravis Roberts (KKR) closed taking over United Group. United Group is managing broadband networks as SBB in Serbia and Telemach in Slovenia and Bosnia and Herzegovina. It is also controlling Total TV satellite platform. United Group has 1.9 million users of subscription-based TV in six ex-Yugoslavia countries: Serbia, Slovenia, Bosnia and Herzegovina, Montenegro, Croatia and Macedonia.

Prices of cable broadband services decreased as a result of strong competition, i.e. other platforms like ADSL, while access speed has increased, mostly because of competition. SBB is providing access via optical fiber cable, offering speed up to 1Gb/s for the business sector. Recently Fiber to the home (FTTH) service is available for residential users in some locations.

6. MOBILE NETWORK OPERATORS

Serbian mobile market is served by three operators: MTS Telekom Srbija, Telenor and VIP Mobile. Licenses are renewed recently on the period for 10 years for providing services according to GSM/GSM1800 and UMTS/IMT-2000 standards.

Call penetration is high even for European standards, mostly thanks to people who own more than one SIM card. After growing year after year, the market narrowed in 2009, as a response to the severe economic situation, which became even harsher when the government introduced 10% mobile tax mid-2009. The tax was applied to all calls, SMS, MMS, data and additional services inside the country and outside its borders and it was revoked in 2011.

Data transfer is a significant source of income while the opportunity for expanding to new users is lost on the mature mobile market. Introducing 3G services had a positive impact on data usage as it improved the user experience. From the Figure 2, we can see that revenue on mobile market was declining until 2011 when it started growing again. This growth is achieved thanks to increasing usage of mobile data, as other mobile services like SMS and MMS usage is decreasing (RATEL, 2016).

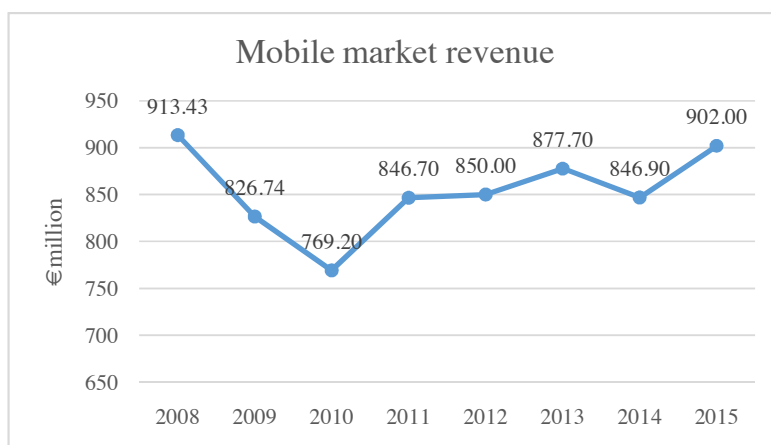


Figure 2: Mobile market revenue (RATEL, 2016)

6.1 Mobilna Telefonija Srbije (MTS)

Telekom Srbija got GSM900 license for the period of 20 years when the government sold 49% stake to Telecom Italia and OTE in 1997, and it started offering mobile services in 1998.

In 2006 MTS started offering 3G technology and in 2015 4G. The company is managing around 2300 base stations (RATEL, 2016). MTS's territory and population signal coverage are presented in Table 8.

Table 8: MTS signal coverage (RATEL, 2016)

	Percentage of coverage
Territory covered by GSM network signal	89.75%
Population covered by GSM network signal	99.75%
Territory covered by UMTS network signal	85.57%
Population covered by UMTS network signal	97.29%
Territory covered by LTE network signal	9.28%
Population covered by LTE network signal	56.74%

6.2 Telenor

Mobtelis founded in 1994 as partnership project between PTT Holdings (49% stake) and BK Trade (51% stake). Analog Nordic Mobile Telephone (NMT) mobile started by the end of 1995 and the digital Global System for Mobile Communications (GSM) by the end of 1996. Telenor bought Mobtel in 2006 and received a license for ten years for

offering GSM/GSM1800 and UMTS/IMT-2000 services.

Telenor is controlling 1936 base stations and in 2015 invested around €10 million into their modernization in order to cover a higher percentage of the population with 3G signal. Telenor's territory and population signal coverage are presented in Table 9.

Table 9: Telenor signal coverage (RATEL, 2016)

	Percentage of coverage
Territory covered by GSM network signal	91.90%
Population covered by GSM network signal	99.42%
Territory covered by UMTS network signal	90.95%
Population covered by UMTS network signal	94.72%
Territory covered by LTE network signal	0.37%
Population covered by LTE network signal	6.47%

6.3 VIP Mobile

VIP Mobile started offering their services in 2007. They concluded a partnership agreement with Vodafone, which allowed Vodafone to offer a whole range of international products and services on the Serbian market.

VIP Mobile controls 1629 base stations and only in 2014 they invested €23 million for improving network infrastructure in Belgrade. VIP Mobile's territory and population signal coverage are presented in Table 10.

Table 10: VIP Mobile signal coverage (RATEL, 2016)

	Percentage of coverage
Territory covered by GSM network signal	87.20%
Population covered by GSM network signal	99.00%
Territory covered by UMTS network signal	55.20%
Population covered by UMTS network signal	88.70%
Territory covered by LTE network signal	4.10%
Population covered by LTE network signal	26.30%

6.4 Mobile virtual network operators

MVNOs are present, but not yet fully active in Serbia. SBB got a license for providing MVNO services, but that service still is not offered. In 2015 retail chain Delhaize launched MVNO service using VIP Mobile's network branded as Maxi Mobile. In June 2016, RATEL gave MVNO permit to the British company Mundio Mobile (part of the Mundio Group, founded 2002). This company already has MVNO services in Great Britain, Austria, Belgium, Denmark, France, Netherlands, Portugal, Czech Republic and Sweden named Vecton Mobile. In Serbia, it will use VIP Mobile's infrastructure. Another MVNO permit has been issued to the

Globaltel company. They will also use VIP Mobile's infrastructure.

6.5 Mobile market share

After VIP Mobile had entered the market, the number of MTS and Telenor users declined. For eight years of presence in Serbian mobile market, VIP took more than 20% of market share – approximately 10% from each of the other two operators. Market share is presented in Table 11, and it is expected that share of all three mobile operators in Serbia will be equalized in the future. It is also expected that MVNOs will take 6-7% in the first five years of operation.

Table 11: Mobile market share regarding number of users (based on RATEL, 2010, 2011, 2012, 2013, 2014a, 2015, 2016)

Year	MTS	Telenor	VIP Mobile
2003	55.10%	44.90%	-
2004	53.50%	46.50%	-
2005	54.30%	45.70%	-
2006	62.90%	37.10%	-
2007	59.40%	34.60%	6.00%
2008	58.93%	31.94%	9.13%
2009	59.70%	28.70%	11.60%
2010	56.00%	30.30%	13.70%
2011	53.06%	30.81%	16.13%
2012	45.80%	33.90%	20.30%
2013	44.80%	33.30%	21.90%
2014	44.56%	33.27%	22.17%
2015	46.10%	32.30%	21.60%

7. CONCLUSION

Serbian telecommunication market is liberalized and legislation is in line with EU legislation. In the past significant investments have been made in network infrastructure, which is still developing to support new technologies. We may say that Serbian telecommunication market is saturated, so MNOs are focused on increasing ARPU by offering new technologies.

Total revenue is growing from year to year and mobile services are its biggest piece, followed by fixed telephony and internet service. RATEL regulates the market and provides annual market reports. Universal services are available in Serbia since 2013 and SMP operators are obligated to provide them. Also, number portability is present and many users are changing their operators.

The fixed market revenue is decreasing, but is still an important part of the total revenue, while mobile market revenue is increasing each year (mainly because of mobile data). Mobile operators are expanding their network and improving the existing one by introducing new technologies and signal types. The entrance of the third mobile operator, VIP Mobile, in 2007 caused a decrease in market share for MTS and Telenor and it is expected that in the future all three operators' market share will be equalized.

REFERENCES

- Benković, S., Jednak, S., Milosavljević, M., Joksimović, N. Ž., & Kragulj, D. (2011). Risks of project financing of infrastructure projects in Serbia. *African Journal of Business Management*, 5(7), 2828–2836. <https://doi.org/10.5897/AJBM10.1196>
- Bogojevic, D., Gospic, N., & Petrovic, M. (2010). Impact of universal service on telecommunications and economic development in emerging economies. *African Journal of Business Management*, 4(13), 3070–3079.
- RATEL. (2010). *Overview of Telecom Market in the Republic of Serbia in 2009*. Belgrade.
- RATEL. (2011). *An Overview of Telecom Market in the Republic of Serbia in 2010*. Belgrade.
- RATEL. (2012). *An Overview of Telecom Market in the Republic of Serbia in 2011*. Belgrade.
- RATEL. (2013). *An Overview of Telecom Market in the Republic of Serbia in 2012*. Belgrade.
- RATEL. (2014a). *An Overview of Telecom Market in the Republic of Serbia in 2013*. Belgrade.
- RATEL. (2014b). RATEL | Novosti. Retrieved December 17, 2016, from http://www.ratel.rs/informacije/novosti.234.html?article_id=1479
- RATEL. (2015). *An Overview of the Telecom and Postal Services Market in the Republic of Serbia in 2014*. Belgrade.
- RATEL. (2016). *An Overview of the Telecom and Postal Services Market in the Republic of Serbia in 2015*. Belgrade.
- Telecommunications Law (2003). Official Gazette of the Republic of Serbia 44/03.
- Telecommunications Law (2013). Official Gazette of the Republic of Serbia 44/2010, 60/2013.
- Telekom Srbija. (2016). *Konsolidovani godišnji izveštaj o poslovanju "Telekom Srbija" a.d. Beograd za 2015. godinu*. Belgrade.
- The World Bank. (2016). Internet users (per 100 people) | Data. Retrieved December 15, 2016, from <http://data.worldbank.org/indicator/IT.NET.USER.P2?locations=RS>
- Tintor, V., Miličević, V., Janković, M., & Radunović, J. (2009). Liberalization of the mobile telephony market in the Republic of Serbia. *Technology in Society*, 31(4), 384–398. <https://doi.org/10.1016/j.techsoc.2009.10.010>
- Upchurch, M., & Marinković, D. (2011). Wild capitalism, privatisation and employment relations in Serbia. *Employee Relations*, 33(4), 316–333. <https://doi.org/10.1108/01425451111140613>
- Večernje Novosti. (2016). Srbija dobija još dve mobilne mreže | Ekonomija | Novosti.rs. Retrieved December 16, 2016, from <http://www.novosti.rs/vesti/naslovna/ekonomija/aktuelno.239.html%3A639034-Srbija-dobija-jos-dve-mobilne-mreze>

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Serbian Project Management Association (YUPMA) was formed as YUDRUP in 1986. In 1997 it has become a full member of the International Project Management Association (IPMA). YUPMA and its members have so far taken part in a large number of national and international research and other projects in the field of management.

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- Project management in IT
- Managing the EU projects
- Business Plan Preparation
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- Project Management Software Packages (MS Project, Primavera)

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One of YUPMA's major tasks is the organization of symposia bringing together the experts engaged in project management and related disciplines. One of the major objectives of these scientific meetings is to describe the position and the development of project management in Serbia and in the region. So far, sixteen symposia on project management have been organized and they are traditionally held every spring on the Mount of Zlatibor

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I Semestar

- Menadžment
- Osnove ekonomije
- Informatika I
- Engleski jezik I

II Semestar

- Teorija upravljanja projektom
- Matematika
- Informatika II
- Engleski jezik II

II GODINA

III Semestar

- Strategijski menadžment
- Alati za upravljanje projektima
- Teorija organizacije
- Osnove finansija

IV Semestar

- Osnove marketinga
- Softverski paketi za upravljanje projektima
- Upravljanje ljudskim resursima - Izborni
- Upravljanje promenama u projektu - Izborni
- Upravljanje rizikom projekta - Izborni
(Studenti biraju dva izborna predmeta)

III GODINA

V Semestar

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- Projektni menadžer i timski rad
- Program menadžment – Izborni
- Upravljanje projektima u javnom sektoru - Izborni
- Preduzetništvo – Izborni
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- Projektni portfolio menadžment
- Upravljanje informatičkim projektima
- Projektna organizacija - Izborni
- Izrada biznis plana - Izborni
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Praksa i završni rad

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- Savremeni menadžment
- Metodologije projektnog menadžmenta
- Pravci razvoja projektnog menadžmenta

II Semestar

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- Projektno liderstvo
- Upravljanje kvalitetom projekta

II GODINA

III Semestar

- Upravljanje kapitalnim projektima – Izborni
- Upravljanje biznis i društvenim projektima – Izborni
- Upravljanje ugovaranjem u projektu - Izborni
- Informacioni sistemi u organizaciji - Izborni
- Krizni menadžment - Izborni
- Projektno finansiranje - Izborni
(Studenti biraju tri izborna predmeta)

IV Semestar

- Praksa
- Završni rad

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I Semestar

- Menadžment
- Osnove ekonomije
- Informatika I
- Engleski jezik I

II Semestar

- Teorija upravljanja projektom
- Matematika
- Informatika II
- Engleski jezik II

II GODINA

III Semestar

- Strategijski menadžment
- Proizvodni menadžment
- Teorija organizacije
- Poslovne finansije

IV Semestar

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- Menadžment tehnologije
- Upravljanje ljudskim resursima - Izborni
- Marketing menadžment - Izborni
- Upravljanje promenama - Izborni
(Studenti biraju dva izborna predmeta)

III GODINA

V Semestar

- Ekološki menadžment
- Investiciono odlučivanje
- Biznis inovacije - Izborni
- Preduzetništvo – Izborni
- Upravljanje komunikacijama - Izborni
(Studenti biraju dva izborna predmeta)

VI Semestar

- Upravljanje inovacionim projektima
 - Savremeni menadžer
 - TQM - Izborni
 - Izrada biznis plana - Izborni
 - Menadžment MSP - Izborni
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- Praksa i završni rad

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I Semestar

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- Liderstvo
- Inovacije i preduzetništvo

II Semestar

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- Upravljanje znanjem
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III Semestar

- Upravljanje finansijskim rizikom - Izborni
- Finansijski menadžment - Izborni
- Menadžment u javnom sektoru- Izborni
- Krizni menadžment - Izborni
- Upravljanje rizikom -Izborni
- Upravljanje tehnološkim inovacijama - Izborni
(Studenti biraju tri izborna predmeta)

IV Semestar

- Praksa
- Završni rad

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Metodologija naučnoistraživačkog rada
Savremeni projektni menadžment

Izborni predmet 1:
Teorija menadžmenta
Upravljanje ljudskim resursima na projektu

Izborni predmet 2:
Strategijski projektni menadžment
Savremene metode upravljanja projektima

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Izborni predmet 3:
Upravljanje poslovnim rizikom
Projektni menadžer i vođenje tima

Izborni predmet 4:
Upravljanje znanjem i organizaciono učenje
Informaciona podrška upravljanju projektima
Doktorska disertacija 1 - Teorijske osnove
Doktorska disertacija 2 – Izrada projekta istraživanja, definisanje teme i prijava teze

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Doktorska disertacija 3 – Preliminarno istraživanje
Doktorska disertacija 4 – Sprovođenje istraživanja
Doktorska disertacija 5 – Izrada i odbrana