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**JOURNAL**  
OF SUSTAINABLE DEVELOPMENT





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The JSD Editorial Board will consider reviewing only the following types of papers according to the COBISS classification: Original Scientific Papers (publishing of novel and original research results, according to the IMRAD scheme); Reviews (summarizing, analyzing, evaluating and synthesizing already published information); Short Scientific Paper (publishing of novel and original research results in a more concise version); Professional Papers (placing the accent on the applicability of the already achieved results); Reviews. Conference papers are not included in any of these sections. All other types of papers, according to the COBISS classification will not be taken into account for reviewing.

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1. The papers submitted to the JSD Editorial Board mustn't be published before, nor republished after the JSD issue. The papers should consist up to 15 pages (approximately 38.000 characters with spaces), while reviews up to 3 pages (approximately 17.000 characters with spaces). Margins: Top - 2,54, Bottom - 2,54, Left -3, Right - 2,5, Gutter 0 cm, Header - 1,25, Footer - 1,25. The text should be typed with 1,5 spacing in Tahoma and the font size should be "12". The Title of the paper should be written as a header of the text on each page. The footnotes should be written with font size "10".

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- 5-7 key words that describe the topics of the paper below the abstract.
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## COMMUNICATION BEYOND THE LECTURE ROOM AS A CHALLENGE OF EDUCATION IN THE MODERN ERA

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### **ABSTRACT**

Modern higher education, in which the student takes more central role, means meeting the various challenges by teachers. The focus of this paper is communication challenges on the relation teacher - students. Strict distance between teachers on the one hand and the students on the other are replaced by more common and increased communication that meets the needs of today's time where the inflow and outflow of information highlights the need for dynamic interaction. In this context practical work with students is an exceptional opportunity to improve communication with teachers and motivating them for greater success and learning the subject matter.

The paper is based on analysis of the impact of practical work of students upon their motivation and improves the level of communication with the professor. The case study refers to students of journalism and public relations at the Law Faculty of the University "Goce Delchev" - Stip. The aim of the research was to realize the impact of practical work on improving communication between the teacher and students.

The results showed that the application of theory to practice strengthened the confidence of students, respect for the professor, bear active communication interaction with the professor, increase motivation of students and result in their greater involvement and commitment to studying.

***Keywords: communication, practical work, motivation.***

***JEL Classification: I20, I21, I23, I29***

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## **1. Introduction**

The manner of communication between teachers and students has a lot of influence in the process of teaching, during lectures, exercises, but primarily on the way students will master the material in terms of understanding and learning it, and will be able to independently apply the gained knowledge. A frequently asked question is how to know whether the student really understood and learned the material on a particular subject? Is it enough to pass the test, exam, to present a prepared paper assignment for the professor to obtain a complete picture of the student's understanding of the material? One of the ways to answer this question is to put students in the role of "workers" who have to demonstrate practically what they have learned, i.e. to apply what they have learned in practice. Namely, law students should write an application, appeal or complaint, the student in Business Management should prepare a business plan, a student of computer science and programming should make a computer program, a student of journalism should write and publish an article in a newspaper, etc.

This manner of mutual practical work between teacher and students, during which they will be working on the development of a product or service, creates an entirely different situation in which certain stereotypes about the way of communication in the teacher – student relationship are lost. In fact, coming out of a classroom on the field, where the challenge of applying theory to practice lies, creates a natural situation in which you find students really executing of tasks in the future profession they have chosen. Perhaps not every theoretically derived teaching unit and not every object that is based strictly on learning theory can clearly be applied in practice, but either way, most, if not really, at least virtually can be simulated to see the practical applicability of what was learned. What is thus particularly important and it is in response to the communication challenges of modern times is that the practical realization of theory, with the involvement of the teachers and students, opens new dimensions of

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communication that goes far beyond the lecturing and listening, and turns in conversation, negotiation, consultation, suggestions, giving and accepting new ideas and their realization.

The aim of this case study, which is a pilot research, is to realize the impact of practical work on improving communication between the teacher and students. The study involved 30 students of Journalism and Public Relations at the Law Faculty of the University “Goce Delchev”, Stip.

The basic hypothesis is that communication between teachers and students outside the usual framework of a classroom, specifically with practical work through which a product is developed by applying the theory in practice, result in increased levels of communication between teachers and students; an additional incentive and motivation for regular class attendance, as well as commitment and increased activity during the lectures. The rule that good communication is a prerequisite for any successful operation can be reflected in education and it can be noted that good communication between teacher and students is a prerequisite to love, understand and learn the subject.

One of the ways this paper researches, is raising the level of communication through practical work of the professor with students. Thus, what this paper considers as practical work is the activity that is carried out of the classic classroom and which consists of a series of tasks whose execution contributes to the forming and producing a particular product or service. In this particular case, which is to be discussed, it is a journalistic product – a newspaper. Through the manner of its creation, this paper discusses the new levels of communication that were opened between the professor and the students.

## **2. Practice as communication technique**

Communication techniques that teachers use during lectures play a significant role in the way students will become receptive to the subject they are learning. Aids such as presentations, posters, listening and watching videos as communication means through which certain matters are closer to the students, certainly have a great



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importance in learning the subject. Their choice depends on the opportunities available, the situation, but also on the subject that is being taught. The more appropriately the means to communicate the theory with students are chosen, the more successfully it will be comprehended by them. Accordingly, "communication is competent, which means of high quality, when it is both appropriate and effective for the particular situation", (Morreale, Spitzberg, & Barge, 2006, cited in Morreale, 2007:7). "Appropriate communication means that you act in ways suitable to the norms and expectations of the context and situation in which you find yourself. Effective communication means you are able to achieve the most desirable objectives or outcomes in the context", (Morreale, 2007:7). According to Morreale, in order to communicate competently, there are three basic requirements you must meet:

- First, you must be motivated to communicate competently.
- Second, you must be knowledgeable about the situation in which you are communicating and the kind of communication expected and needed in that situation.
- Third, you must be skilled at actually sending and receiving messages in that particular situation.

"These three requirements or dimensions of competence – motivation, knowledge, and skills – are the foundation of competent communication whether you are in an interpersonal situation, a group, public speaking, or even in a mass communication context such as on television or in a mediated context like using e-mail" (ibid.).

But what is it that enables practical work with students from a communicational point of view? First, daily communication among the professor and students about what they are working on. The once a week two-hour communication during lectures becomes ordinary. E-mail and Facebook communication, in a group or individually, are imposed as necessary if we want to successfully and timely complete the practical task. Thus the barriers that create uncertainty in students are increasingly removed because they are in a situation where they need to decide what to work on and how to work on

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it. Moreover, they shouldn't restrict themselves at any time to ask and consult the professor for certain dilemmas or problems.

A confirmation for this is the example involving the student newspaper "Students ECHO", which the students majoring in Journalism and public relations at the Law Faculty of the University "Goce Delchev" - Stip started preparing during the winter semester in the academic year 2011/2012. The whole idea and its realization proved to be an excellent technique for communicating with students about the subject matter in the field of journalism. Moreover, from a communicational standpoint three components were significant:

- One - to increase communication with the professor;
- Second – to vividly communicate the theory and apply it through practical execution;
- The third - to create a new situation in which you will encourage students' will and preparedness to communicate (willingness to communicate).

The latter, in the context of the views of McCroskey and Richmond, who emphasize: "Whether a person is willing to communicate with another person in a given interpersonal encounter is certainly affected by situational constraints. Many situational variables can have an impact... Willingness to communicate is probably to a major degree situationally dependent. Nevertheless, individual exhibit regular willingness-to-communicate tendencies across situations", (McCroskey, Richmond, 1987:129).

### **2.1 Practical work in terms of increasing communication**

The paper was created as a result of becoming aware of the need for larger participation on behalf of the students and their encouragement of a more liberated and enhanced communication - among each other as fellow students as well as with the professor. A very important moment was their liberation in communication with third parties, because the journalist profession itself or a person for public relations has communication in its essence. As it is noted in theory, "the journalist is a carrier of the

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mischievous researching spirit, mind and heart, with the trait to speak, to talk, to write and to read, to listen and to be heard, to see and be seen!" (Andrevski, 1994:29).

An incentive for the newspaper was the perceived inertia among students during lectures. They were quiet, peaceful, with no apparent self-initiative and creativity. All these attributes are uncommon for the journalistic profession which requires openness, communication and, above all, great creativity. There was the impression that students come to lectures and go, during which one could not feel the feedback from them regarding the comprehension of the material. More specifically, despite the peace and order during the lectures, the feeling after their ending was that the taught theory rang someplace across the walls of the classroom. What was lacking was a true two-way communication and feedback information that what they understood in theory, they could also really apply in practice. Moreover, it was also taken in consideration that these are subjects that need to enable them to enter into the journalistic profession, they are key subjects of journalism that explore the journalistic genres, the fundamentals of journalism and the way of functioning and operation of the print and electronic media, editorial policy in media etc.

Practical tasks during classes and exercises - writing news, report, coverage - showed serious divergence among the learned theory and its practical application. A sign that pointed out that it is necessary to undertake urgent action to wake the "sleeping beauties full of knowledge" syndrome. This knowledge should have been learned and one should know how to apply it! There was a need to establish a different kind of communication, communication outside the classroom, which can be done only through the practical work on a specific journalistic product. If we continued with work assignments during class, during the exercises, it would have been a simultaneous situation that is being assessed by the teacher. It was necessary to truly act - to form a real newsroom, write, edit and publish journalistic texts which will be assessed not only by professors, but also from the public. To be a real reporter during the studies! To learn from experience! To experience dealing with searching for a popular topic, searching for interlocutors, writing texts that will be released to the public, with

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returning of texts, the struggle to release / publish a text, the struggle for rows in the text, equipping the text, making headlines, subheadings, searching for photos, and finally, the greatest feeling- signing one's name under the completed text. All of these activities inevitably encouraged students to regular active communication - with each other and with the professor. Communication in which will not be just passive recipients, but active communicators as well.

### **3. Student newspaper**

Even with the mentioning of the idea of preparing a student newspaper there was movement among the students, they started asking questions, giving ideas for the name of the paper, ideas for columns in the paper, the choice of chief editor, deputy editor, and editors for sections. A complete turnaround in the behavior of the students! From passive recipients of information they became active providers of information. They interpreted, talked, and exchanged ideas, discussed. It was as if they have suddenly awoken and wished to show and share all the hidden creativity, with each other and with the professor.

A newsroom for the newspaper was formed, whose seat was at the premises of the University UGD FM radio. The chosen name was "Students ECHO". In the first issue of the newspaper, the students wrote: "The newspaper's name was inspired by the sound that does not stop and spreads across the distance – the echo – which reaches everywhere without obstacles and barriers."

In the newsroom of the newspaper, the students had their own separate roles: chief editor, deputy chief editor, editors, and journalists. Departments were formed in the newsroom, sections in the newspaper: education, culture, sports, entertainment, ... Each, according to their interest, chose a particular section. The work was professional, guided by the principles of objectivity and impartiality. Student journalists also followed the technical and graphic preparation of the paper, taking it to print, until his departure.

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In the process of drafting / writing / shaping of one text, students passed all stages: selecting the form of a text - whether it will be news, reports, interviews, reportage. Contacting the interviewee; interviewing or taking statements; making a survey among citizens; recording with a tape recorder; downloading the recorded and selecting the important from the irrelevant... Equipping the text with a title composition, headline, title, subheading, captions, snippet, searching additional photos, writing legends of photos ... Each text passed its road – from the reporter, to the editor, to the editor in chief. If something was missing, it was returned for its completion. There was no room for improvisation. "We are being released in public, we have responsibility for every written word in the texts in the newspaper," one of the students told everyone - the newspaper editor – to his colleagues. Responsibility, commitment and enthusiasm that a professor can only wish for! In circumstances where the final deadline for receiving texts was known, when they knew in advance the agreed date for delivery of the newspaper in print. In the work actively took part students from first, second and third year. The third year students had a leading role. All doubts about what the texts would be like, if the work is done on time, whether the paper will be good enough to give it a "green light" for its printing and publishing - disappeared. What we could see was constructivism, teamwork, sharing ideas, negotiating, having the help from the "more experienced" (those in third year) colleagues to the first and second year.

The first issue of the newspaper came out in December 2011. In the Editorial of the first issue they explained that "the paper is a product of the knowledge obtained during their studies and it represents a blend of creativity, ideas, beliefs and perceptions of the students majoring in Journalism and public relations."

#### **4. Communication without barriers**

The practical work on the newspaper also set new ways to communicate with the professor. It was not enough to communicate during lectures. Preparing and publishing a newspaper requires additional communication, additional efforts outside of classes and exercises. At first the students were embarrassed to call on the phone,

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send an email, send a message through Facebook and did that with a lot of apologies for "disturbing" me. After a while they realized that all these new forms of communication that they were not used to are not disturbances, but necessary forms if the we want to get the newspaper out in time, for it to be precise, with accurate information, objective and professional.

"Get rid of the prejudices, stereotypes, there should be constant communication between us and communication with the teacher to resolve any dilemma and professionally perform journalistic tasks. We cannot make a good newspaper if we don't have good communication between us," one of the students told his colleagues urging them to remove all the communication barriers that restrict their initiative and their creativity.

What followed was a period of contacting everyday by phone, email, Facebook. The professor was no longer just a professor, but was part of the editorial board, and editor in chief, and a journalist, who was always available to editors and reporters from the student newspaper. The questions and consultations became everyday dynamics that was dictated by the students themselves, interested and invested into the practical engagement.

On Facebook, the students formed a group through which each student gave ideas for texts, they gave comments and suggestions. Naturally, the professor was in the group, where communication was informal, relaxed, without strict distance, free from any pressure of the classroom as a template. It was shown that getting out of the classroom and the application of this method of communication, also increased the initiative and creativity of students. One of the elements of the structure of "I" is the different roles we play in social relations or in communication (Trček, 1994:70).

With the newspaper it was as if students got out of a specific framework of the role they had in the classroom and began a completely different role and communication which was much closer to the role that as journalists they will have while working in their future profession. They showed their creative spirit, the one that

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was taught in the theory: they were persistent, curious, open to change, new experiences, knowledge, internally motivated, with a good sense of humor.

The overall work and commitment on the paper "Students ECHO" - from its preparation to its publishing - had excellent results. First and foremost, students were placed in the real role of professional journalists. An additional incentive was the feedback they received for every written text - requests for additions, clarifications, taking additional statements, cutting the text, pointing to the incompleteness of certain information, its precision, pointing out possibly biased opinions or inconsistency, the structure of the journalistic text, the language, the need of snippets, documenting the text with photos etc.

What followed was the release of the second issue of the newspaper (March 2012). Then, with just 2 numbers of the "Students ECHO", the students commented with delight: "Professor, we became recognizable!" This further affected their motivation and commitment that increased not only when it came to the newspaper, but it was evident during the classes with increased interaction, participation, asking questions, topics for discussion, debating and expressing their own views.

We continued with the third issue of the newspaper (June 2012), the fourth and so on, according to the planned dynamics, continuously every three months during the school year - December, March, June. The latest issue came out in June 2013. The texts were evaluated, every following issue was compared to the preceding one, and the students themselves have witnessed their progress in writing and agreed that every issue is better than the previous one, although they admitted the first will remain their favorite!

#### **4.1 Impressions and comments**

After the completion of the first issue of the newspaper, the students were able to write their experiences and impressions. Some of them are the following:

- "I received a lot of knowledge from the lectures during classes, however I was able to comprehend the material much easier through the work on the

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newspaper. Somehow, it came to me as a "putting in function" what I have learned. And while working on the newspaper, I had a strange feeling: it was as if I was suddenly studying and taking the exam before myself. "

- "I perceived the professor as being much closer. It was very different than in the classroom. Somehow closer, more immediate, it was somehow like the professor was more of 'a human, from flesh and blood', with whom I can converse more freely. "

- "I feel that my initiative got more expressed. I didn't even know that I have that kind of creativity in myself. "

- "Out of the classroom, in the newsroom I function better. The space limitation that the classroom makes is lost. Not only physical limitations, but more in terms of the distance between a teacher and student. The space in the newsroom of the newspaper was also limited, one can even say that the newsroom was smaller than the classroom, but the distance 'depreciated, melted' and I was able to communicate easier. "

- "It was very important to me that I could call the professor at any time. I knew I wasn't going to be misunderstood, and it is all in function of the work. "

- "In the beginning I was under pressure thinking that I will be evaluated by the professor and the public, but then I realized that the professor only helps me to be evaluated positively by the public."

- "Some of the students from other majors could not understand how I could communicate with the professor via Facebook. They were puzzled when I told them that during the weekend we were constantly online so that the newspaper gets released on time. I think that when I brought them our published newspaper they realized that it was about professional commitment and communication which I have to say they even envied. "

- "We became journalists-beginners even while still studying. I communicated with a lot of people before I wrote the text and now I realize how many new contacts our profession provides. "



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- "The greatest benefit of preparing and publishing a newspaper was that I became a real journalist before I even finished university!"

- "There is no better feeling for a journalist than the feeling when you see your own signature and your own first published text! I immediately received calls and congratulations for the newspaper from a few friends. "

The comments of the students were real confirmation of the success of the entire project in which, on one hand, theory was applied successfully in practice, and on the other hand communication between students and teachers, and vice versa, rose at a much higher level, initiating new ways of successful and positive two-way communicational action.

## **5. Conclusion**

Communication with students is a challenge for any professor who has a set goal before himself/herself for students to comprehend and master the material, his/her subject to not become the "fear and trembling" to students, but to be understood, learned and accordingly for the professor to receive the epithet of being the favorite. In fact, there is no subject which in itself is fear and terror. From the attitude of the professor himself/herself, the manner of his/her teaching and communicating with the students, it depends on whether the students will have an aversion towards a particular subject or if it will be favored by them.

The modern era of developed communication technology requires new ways of communicating with students. The stereotype of a professor behind a desk in the classroom and students who obediently sit and listen is slowly being exceeded. Practical work with students gives the opportunity for a different kind of communication, more intense, more immediate. Certainly this requires a lot of dedication and time, but the feedback we receive from students only confirms the theory of Schramm that communication can be complete only if the fields of experience of the sender and the recipient overlap, i.e. only when the recipient receives and understands the message in the meaning desired by the sender, which depends on the level of similarity / difference of his/her field of experience with that of the sender. The larger the overlap

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of the fields of experience of the communicators is the more common experience they have and can understand each other better (Dzamtovska-Zdravkovska, 2012). In the specific case explained in this paper, the common experience of the professor and students results in the following:

- Increasing the level of communication between professor and students;
- Greater willingness to communicate;
- Increasing the self-esteem and the confidence (the quiet and peaceful students are transformed into energetic, initiative-taking and creative people who boldly stated their thoughts on the situations in various areas of social life; asked for everything that might have been unclear in the lectures; entered debates, discussions on various current issues; analyzed and made comparisons between theory in journalistic subjects and practical work of the media);
- Maximum engagement in learning the theory (as students themselves wrote in the editorial in the first issue of the newspaper "theory without its application is often known to float in the air ...");
- Additional incentive and motivation for regular class attendance, as well as commitment and increased activity during the lectures.

It can be concluded that the practical work on creating a product associated with the subject teaching can give birth to different and new ways of communication with the professor and among students, and presents an exceptional opportunity to establish an active relationship in the communication process, in which the roles of the sender and the recipient of information will simultaneously change as one of the important prerequisites for successful communication.

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OPEN SOURCE CLOUD COMPUTING FOR SUSTAINABLE IT  
DEVELOPMENT

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**ABSTRACT**

Cloud computing changes the way IT services are delivered, introducing technology which supports efficient usage of computing resources. This paper examines the effect that cloud computing is having on several environmental aspects, which represent real challenge for the sustained growth of ICT infrastructures. Cloud computing delivers means for minimizing energy consumption for manufacturing and operations of computer equipment, while open source software enables efficient use and reuse of resources, through building on top of existing technology. This hybrid IT system is found at the core of big service providers worldwide, because of its many benefits, elaborated throughout this paper. One of the most important feature of open source cloud systems is the great perspective it has on reducing energy, electronic waste and pollution. However, the environmental aspect isn't the only measure for sustainable development. Cloud computing brings many exciting benefits and that is why this paper elaborates the parameters needed for calculating a total cost of ownership, for evaluating the complete design and implementation of open source cloud systems.

**Keywords:** Cloud computing, open source, emerging technologies, sustainable IT solutions, energy efficiency.

**JEL classification:** L86, C88, O33,

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## **1. Introduction**

### **1.1. Goals and methodology**

Today, emerging technologies are creating not only the trends and directions in the IT industry, but are also shaping the economic and financial market structure, on a global scale. Computing operations are needed in every field of a modern society. Apart from using the computers as tools for day-to-day ordinary activities, computers are heavily present behind the scenes, from gathering large amount of data, structuring and storing it, analysing relevant information and producing knowledge-based expert systems. This global trend has a heavy impact on the worldwide energy consumption. The substantial amount of information systems and data which is being fetched and consumed by individuals, companies and institutions, creates challenges for developing sustainable IT systems, from multiple points of view:

- integration of different applications,
- efficient reuse of hardware resources – having applications run at different time spans on the same hardware,
- maintaining security and compliance,
- ensuring safe and achievable migrations to other systems and upgrades.

Hardware manufacturing is bringing more efficient processors and faster memory, which uses less energy. However, regardless of the speed and efficiency of a computer, minimizing hardware utilization must be the priority of any IT project, since it achieves less electronic waste and less energy consumption. Using virtualization, cloud computing achieves this goals, by maintaining the computing speed and performances of dedicated physical systems.

Software development, on the other hand, is one of the fastest-growing industries in the Republic of Macedonia. Software is everywhere, and with the massive adoption of mobile devices and smart phones, development of new packages, protocols and applications is constantly on the rise. With open source software products (referred to as OSS throughout this paper), local developers can use semi-finished products, in

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order to build on top of them and create additional values and professional software which can be implemented anywhere.

This paper relates to sustainability through several aspects:

- Impact of ICT on the environment;
- Energy efficiency in high-end systems;
- New and creative approaches to sustainability.

In order to measure and determine the impact that open source cloud systems, and cloud technology in general, have on the above-mentioned elements, this paper determines to analyse such systems and propose best practices for IT systems deployment in an all-round systematic approach.

Taking into consideration the challenges in front of future ICT solutions, these aspects of interest add even more dimensions in choosing the right technology for the right purpose. Therefore, the following steps are comprising the research methodology used throughout this paper:

- Decomposition of the feasibility of open-source cloud technology for mission-critical applications, through a total cost of ownership analysis;
- Elaborating the benefits that cloud systems have from an environmental and efficient energy point of view;
- Stressing out the importance of open source software systems for designing and building sustainable solutions;
- Determining the possibility for boosting the local ICT development and creating services and products applicable locally, regionally and globally, in both the private and the public sector.

The approach for achieving those goals starts with the analysis of recent research in this field, in the next chapter. After that, a total cost of ownership business model is created, since when discussing about open source cloud systems and their impact on the environment, one must consider how feasible it is to implement such systems in complex and mission-critical projects. After dismantling the open source cloud systems, focus is given to their environmental aspects, proceeded by research on how

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sustainable development can be achieved and maintained. Eventually this paper represents an all-round perspective on the application, usability and efficiency of open source systems deployed for creating cloud computing environments.

## **1.2. Problem description**

As more and more technology is becoming a necessity, companies and institutions should focus on optimal usage of these IT solutions for their own purposes, instead of implementing and integrating them into a complex and unsustainable environments. Particularly nowadays, when one institution often has multiple applications distributed across different hardware – it is becoming very difficult to resist the public cloud opportunities and put the data, which is their most valuable resource, somewhere on the Internet. This trend creates regulatory and compliance risks, since putting data abroad, makes it dependent on local laws and regulations.

The globalization as well has taken its toll, since these services are often made available for a lower price from big vendors. Spending money to big vendors for licenses and support, instead of using local resources for customizing, furthermore burdens the local economy, particularly since there are sufficient resources in the Republic of Macedonia for designing and implementing sustainable IT solutions.

In the Republic of Macedonia there is no hardware manufacturing industry for standard desktop and rack mountable computer systems or servers. Inefficient usage of hardware resources burdens the economy from that perspective as well, since more hardware is imported. The average lifetime of computers has been constantly dropping, because of three important IT equipment manufacturing trends:

- Bringing the products to the market is extremely important, influencing big companies to create easy-to-manufacture hardware parts;
- New technologies are increasing performances of computer systems constantly, reducing the time for which a computer system becomes obsolete;
- Internet applications are expanding worldwide, which usually require more computing resources in terms of processing power, memory usage and bus speed.



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Bearing this in mind, efficient use or reuse of the same hardware for multiple applications must be introduced in Macedonia, exchanging local knowledge and expertise for hardware equipment, which is being imported and is generating large quantities of electronic waste. That is why it is very important for the companies and public bodies to understand the importance of virtualizing computer resources and deploying cloud solutions.

When referring to cloud computing, it is considered as both private and public cloud infrastructures. The differences and impacts on energy consumption by the private/public clouds are not in the scope of this paper.

## **2. Related research**

The field of cloud computing has been receiving a lot of research in the last few years, both on a theoretical and application level. Not only research institutes, but also commercial organizations are stressing more and more the economical and environmental impact of green technologies, such as "the cloud". Cloud computing itself, has been defined from different aspects, with one of the most comprehensive and profound definition being from Baliga et al. [2] as a "model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction". Within this paper, the main focus on cloud technology is on its virtualization capabilities for reducing manufacturing, operation, communication and maintenance resources, deliberately neglecting the service and business perspective. Many researches [2], [4], [5] are trying to emphasize the potential cloud systems have for contributing to the sustained development of the IT industry. Moreno and Xu [5] are discussing the performance degradation issue, which must not be ignored, since cloud technology and virtualization are only feasible if they meet the functionality demands of the applications being serviced and delivered. Heavy research has been made on the many aspects for the impact of the modern IT industry on world's pollution and waste accumulation. Even new terms such as e-waste [5], e-pollution and Green-

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IT [7] have been introduced, even though the IT industry is still rather young for exact calculations to be made for the long-term impact on the environment. Jeffery and Neidecker-Lutz [7] in their Expert report for the European Commission underline the dedication of EU for extending the development and usage of cloud IT systems, as one of their long-term goals for boosting IT innovation, technological development and controlling the impact that the IT industry has on the environment. In their research study, they recommend that The EC should promote the European leadership position in software through open source approaches in cloud computing, as it simplifies the adoption to different environments.

Open source software, has been constantly present in the researches and in the educational environment in general, even though not drawing the enormous attention cloud computing is accumulating in the last five years. The great importance of open source software for cloud computing is brought forward in many researches, some of which naming open source “the great enabler for cloud computing” [6].

### **3. Total cost of ownership advantages of open source cloud systems**

Calculating the expenditures and the ratio of investment in new ICT solutions can be a challenge, particularly for dynamic and distributed systems, with a large base of users and stakeholders. When a decision should be made between various options, the comparison must include all important parameters, in order to avoid hidden and unpredicted costs. In this paper, the total cost of ownership (referred to as TCO throughout this paper) business model is proposed for evaluating technical solutions from different perspectives from their life cycle, starting from acquiring, through deploying, testing, operating and maintaining, and to upgrading and managing end-of-life support issues. This approach, originally proposed by Gartner Group Inc. <sup>2</sup>, encapsulates most aspects needed for supporting decisions for implementation of robust and scalable ICT solutions. Even though the mentioned cost-decomposition model is used as a reference, the proposed criteria in this chapter defer from it, since

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2. <http://www.gartner.com/technology/research.jsp>

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recommendations are given for issues that should be taken into consideration for total cost of ownership of open-source cloud projects in particular, having in mind the sustainable development and usability of such systems.

We assume that we need to design and implement a flexible and scalable virtualized system, for various applications, not dependent on a particular vendor and being able to support different customers connected over the Internet. The following aspects are recommended in this paper to be considered for system evaluation and for each of them a complete prospect on open source cloud system is given.

Total cost of ownership elements, for creating a cloud environment:

- **Hardware purchase and maintenance:** Cloud computing systems are software entities, which should be run on an appropriate hardware. Even though this parameter is considered independent from the technology, one important issue, which must be stressed, is that using open source technology, cloud infrastructures can be created out of commodity hardware with no special requirements. This can impact the cost of the cloud project and the scalability as well, because if the servers start to take heavy load – additional servers can be added with ease. Also, reuse of the hardware can be made and old hardware which is deprecated within the organization can be adapted to fit in the cloud deployment.
- **Infrastructure: electricity, cooling, fire-protection:** This element can add significant expenditures for building the cloud infrastructure, but deploying a cloud environment will have great impact on the requirements for these systems. Using cloud technology, if ten different applications are required, running in ten different environments – there is no need for ten separate physical servers. Instead, those applications can maybe run only on two or three servers, depending of the load imposed on the applications. The bigger the number of physical servers, the more electrical and cooling energy is wasted, because servers are consisted of passive elements which add to the energy consumption and heat – and having few servers to do the job, will increase the

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density of active computer parts (CPU, RAM memory, etc.) compared to the passive parts. Having fewer servers will also decrease the risk of a fire in the data-centre. Another benefit from utilizing cloud principles is that once an application is not used, it can be suspended, without using any energy whatsoever. When it resumes, the virtual server running the application will not have to boot all over again, performing useless operations and consuming energy – but it will run from the point when it was suspended.

- **Software acquisition, installation and maintenance:** Never the less, one must consider that greater expertise is required for deploying an open source software package. Existing of-the-shelf software products have big companies behind them offering integration and maintenance support. This is not an issue with open source, but using this type of software can surely boost the local economy, since license money are substituted with money for local companies and experts. With open source cloud system, the time-to-deployment can be reduced since there is no vendor lock-down. Choosing partners or support companies and being locked-down by one particular company are two very different things, which should be considered in the TCO evaluations.
- **Licenses:** Open source software has a distinctive advantage when it comes down to this expenditure. It will never expire or become license burden for the organization, since in terms of usage it is completely owned by the organization. When using an open source cloud solution, the organization is completely free to choose the company or team of experts, which will support the solution. There will be no limit on behalf of users or resources used on the cloud infrastructure, nor in terms of duration of the usage of the system.
- **Integration with other systems:** Since it is open source, the cloud environment can easily be integrated with existing or new software systems such as ERP, CRM, Trouble Ticketing, Billing, again without being dependent on a particular vendor or company.
- **Scalability and Software upgrades:** Scalability is the main advantage of

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cloud environments, since they can easily be extended to a larger number of servers, even on a different geographical location. Software upgrades however, are big asset for proprietary systems; however, there are companies, which offer commercial support, patches and upgrades for open source systems as well.

- **Security:** This is a major issue for cloud based systems and it has been the greatest drawback for higher penetration of cloud computing in the business and government sector. As cloud technology is expanding with exponential rate, the security features of these systems are yet to find solid ground. This is a field to which scientific researches have been focused recently and it is expected that more applicable security measures will become an inseparable part of cloud deployments.
- **Backup and disaster recovery:** Using virtualized computer resources facilitate and speed-up the process of backing up and restoring data. With cloud systems, the Mean-time-to-recovery (MTTR) of systems and applications is expected to be much lower, since hardware failure issues are usually efficiently dealt with.

The global IT spending has risen 3% in 2012 compared to 2011, with public cloud services seeing substantial growth [12]. Computer hardware for business users is getting a negative growth, which implies to greater usage of server virtualization and cloud computing.

This chapter proposes means for calculating direct and indirect costs for an open source cloud system and cloud systems in general. These principles are mostly adaptable to designing and implementing both private and public cloud solutions, taking into consideration all relevant criteria.

#### **4. Benefits of open source cloud computing**

Throughout this paper, Cloud computing is considered as a location-independent, online applications which are available on demand.<sup>3</sup> But how does cloud computing

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<sup>3</sup> Definition by Joe Weinman from ATT, <http://www.greentelecomlive.com/2009/03/16/full-interview-att's-joe-weinman/> [16]

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achieve these advantages over commodity and legacy dedicated IT infrastructures? Cloud computing relies on three very important technological principles, which are having big impact on energy consumption and hardware utilization:

- 1. Virtualization:** The ability to run different and independent operating systems on the same hardware. The importance of this principle is that applications can share resources and consume them only when they are active.
- 2. System and application provisioning:** The ability to quickly and adequately add new instances on demand, making computer at disposal, at the same time maintaining security and scalability of traditional non-virtualized systems.
- 3. Elasticity:** The cloud system gives impression that it is having an infinite set of resources<sup>4</sup>. This leads to the necessity to be able to expand, whether in terms of processing power, RAM memory or disk storage, over different types of systems and give impression that it is one coherent platform. Open source is particularly important for this principle, since open standards and interfaces are easily scalable and can be integrated to work with each other.

To explain these three concepts, a simple example is given: One website resides on cloud implementation of multiple web servers. It has small amount of users in night hours, only few virtual instances will run to accommodate their needs and to save energy as much as possible. Once the demand for the website and its contents increases, new virtual appliances will be automatically added to distribute the load and serve new clients. As storage on the website increases, the disk space can easily scale over different systems, which can be on different geographical locations, communicating and creating unified disk storage over network protocols.

There are three main models for cloud systems, on behalf of the service level being delivered to the end customer:

- **Infrastructure-as-a-service** (IaaS): Hardware infrastructure, delivered as a service;
- **Platform-as-a-service** (PaaS): Hardware infrastructure, together with

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4 Cloud computing and its interest in saving energy [15], page 4.

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installed operating system delivered as a service. Customer is installing his own applications.

- **Software-as-a-service (SaaS):** Everything, which is needed for an application to be used by the end customer – delivered as a service. This incorporates the infrastructure and the platform, for which the customer doesn't have to be aware of.

Cloud computing has achieved massive popularity worldwide, mainly because the fact that the whole ICT industry is transforming into a service-oriented manner. As technology reaches enormous development, with new scientific fields being opened on a daily basis, corporate IT administrators, both in the public or private sector, are finding it more difficult to track and deploy best practices into their environments. On the other hand, environmental aspects have burdened heavily the development of the IT industry worldwide in terms of pollution and large energy consumptions, putting efficient resources consumption (both in terms of hardware and in terms of energy) top of the priority list. If the technological development requires energy consumption for manufacturing and operations, which compromise our environment for the years to come, than this is an illegitimate method for increasing GDP, since it is in total violation of the sustainable development principles [1].

Open source software incorporates open standards, which is very important for interfacing different applications. Open standards are the foundation of sustainable technological development, since they create space for application and system developers to build over and upgrade existing systems, also ensuring that produced documents, databases or archives will be accessible and usable in the future, regardless of the vendor who designed the means for their creation.

Through this paper, a determination has been put forward that cloud computing is very important for energy efficiency and other environmental aspects. Constructed out of open source software it can represent a real sustainable system, not only from an environmental point of view, but technological and economical.

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## 5. Environmental impact

Large-scale computing environments and data centers are high energy consumers, due to the need for their continuous operations and the big span of performance demands they should be capable of withstanding. This is why significant efforts have been made in recent years for introducing technologies, which will enforce higher energy efficiency and reduce electronic waste, electrical power and carbon emissions. Challenges for creating a “greener” computing environments are growing, since today there are more than ever users of computer devices and network services, new applications and websites are constantly added on-line and large amounts of data, needed to be processed and stored, are being accumulated over time.

The approach in this paper is to address the benefits of cloud computing and how this new way of delivering services can actually minimize energy costs not only for end users, but for the infrastructures providing the on-demand services. The environmental impact of cloud computing is measured and dismantled from three different aspects, having in mind this important technological fundamentals:

- **Minimization of electronic waste.** Cloud technology, among the rest, delivers hardware as a service. This means that end users should not invest in buying their own hardware, as they are using applications from their cloud provider. But even if companies or institutions build their own private cloud infrastructure, using this technology they will reduce the needed hardware, since multiple computational environments can run on one computer hardware. With open source cloud computing technology of course, hardware can be effectively reused, since virtualization technologies are independent of hardware manufacturer or particular system types.
- **Energy efficiency: heat savings, electricity savings.** As explained in previous chapters, cloud computing represents a new way not only of service delivery, but also of using system resources. With this concept, **computing on demand** is introduced, enabling usage of system resources only when there is necessity for the applications from the end users. Cloud systems reside on



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complex hardware, which is using large portions of electricity, generating thermal energy, which needs to be cooled-off. The systems included, were explained in the Total cost of ownership analysis and in this chapter, a comparison would be made between cloud-based and traditional IT environments. For creating the power consumption model, computing resources are divided into four main groups [15]:

- Processing, the use of CPU power;
- Storage, the power consumed by accessing/writing data on magnetic hard disk;
- Communication;
- Passive energy consumption.

Multiple techniques exist for minimizing the power consumption in both idle and dynamic state, but analysing their impact is beyond the scope of this paper, as it focuses on the impact of virtualization and usage-on-demand principles of IT resources.

- **Carbon emissions.** As it has been stressed out in the Carbon Disclosure Project Study [11], the carbon emissions reducing potential of cloud computing opens huge possibilities, representing a “thrilling breakthrough” [11]. This allows companies to lower their costs, reduce energy usage and increase efficiency by lowering carbon emissions at the same time. The use case in the aforementioned research project indicates that one ordinary company, by porting only one HR application to the cloud, can reduce CO<sub>2</sub> emissions by 30,000 metric tons over five years [11].

## **6. Open source cloud contribution to sustainable development**

Cloud computing and open source forge a mighty coalition, prepared to deliver on several different fronts from reducing costs, increasing efficient, minimizing risks for vendor lock-downs and increasing computing capacities, while using less overall hardware resources. However, one perspective is very important and that is the long-term environmental impact and sustainable development of this technology. Today, a

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sound system design must rely on scalable and flexible solutions, since the IT industry introduces more and more technology every day. New systems need to be replaced or to be integrated with existing ones, extra data is added and more users must be managed.

As was mentioned above in this paper, open source software is beneficial for flexibility, modifications and customizations, avoiding vendor lock-ins. Having a sustainable technological development means being able to be more adaptive to change and new technologies. When using open source at the core of the system infrastructure, whether it is a corporate or governmental environment, owning the software code and the possibilities for independent modifications and customizations, add significant advantages on the long term. This business model ensures that if the applications are having high usability level at the moment, they can be adapted, without great difficulty, to the needs of tomorrow. This is the very essence of sustainable development and the principle for keeping pace with technological development without big capital expenditures, in general.

In terms of sustainability and energy efficiency, another great benefit of cloud computing is that it tends to move computer resources and energy usage from ordinary homes, to remote data centers where renewable energy resources are more available and carbon emissions are reduced in the urban living environment.

But who uses open source technology for building “clouds”? OSS has been used extensively for designing cloud infrastructures, with many big service providers including Google, Yahoo!, Amazon and eBay<sup>5</sup> building their production environments on top of open systems. Even though that this implies that open source cloud computing can deliver on the highest possible level, proprietary vendors of virtualization infrastructures and private cloud solutions are having great success in persuading mid-range and even large-scale service operators to use their technology. Arguments are most often in direction of non-existent professional support or unsustainable complexity of the overall system. However, the TCO considerations and

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5. Study by SUN Microsystems [6], page 5 – Open Source in the Cloud.

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other arguments raised in this paper – result in pointing out the ability and benefits of open source software. It is clear that major IT companies and service-oriented companies are delivering huge support for open source cloud computing, making it a core system at the heart of the IT industry.

Now that technology is a key instigator for economic growth, meeting today's ICT needs and creating an environment in which future needs can easily be managed is one of the key challenges for sustainable development. Particularly as it is proven in the short history of the ICT industry, that predictions and assumptions on the long-term development of computer systems are very hard to make.

Another very important aspect of open source is the opportunity for development of the IT industry on a national level. The development of open source applications can have a very positive effect on the local IT industry. This is because the business model for selling applications as SaaS incorporates fee for customization and maintenance, and not so much for licenses for the product. With open source, there is the possibility for creating a complete end product, using tools and pieces developed and supported by users and communities worldwide.

## **7. Conclusion**

Technological development is one of the most critical factors for increasing the GDP worldwide. While striving to achieve a more rapid growth, it must not overstep the boundaries of sustainable development. Cloud computing delivers means for minimizing energy consumption for manufacturing and operations of computer equipment, while open source software development enables efficient use and reuse of future human and machine resources for building on top of existing technology. It is therefore highly recommended that the government of the Republic of Macedonia takes into consideration support actions for these modern and rapidly developing global trends.

Cloud computing is dedicated to enable users to pay IT resources per-usage and extend as they grow, making it a vastly popular trend in the IT industry. Most cloud

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infrastructures are built on top of open source systems, which empower them to extend with greater dynamics, constantly generating features and additional values from and for the user community. When designing and implementing an open source cloud computing project, it is very important to create a Total Cost of Ownership model, for effectively considering all aspects of the system's implementation and operation life cycle.

As the 21<sup>st</sup> century is aiming to be dedicated to information processing and communications, green technology approaches are necessary to support sustainable development and to enable technological growth, which will not endanger the future environment.

After all, the ultimate goal of this paper is to inspire further research, both in the theoretical and in the application domain, for higher inclusion of open source software for implementing sustainable and flexible solutions, which can be of great interest for the ecosystem and economic development of the Republic of Macedonia.

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## EVALUATION OF THE ADEQUACY OF THE MACEDONIAN DEPOSIT INSURANCE FUND TARGET RESERVE RATIO

Vesna Micajkova, PhD<sup>1</sup>

### **ABSTRACT**

The sufficiency of the deposit insurance fund (DIF) is a very important issue for countries that use ex-ante method of funding. The deposit insurance fund should have enough means for prompt reimbursement of the deponents in case of a collapse of the financial institution-member of the deposit insurance system. On the other side, maintaining too large deposit insurance fund will mean unjustified burdening of the financial institutions, since they are major financier of the fund through premium payment. Some countries determine the amount of resources that the deposit insurance fund should have, by setting a target reserve ratio.

The target reserve ratio of the Deposit Insurance Fund of the Republic of Macedonia is 4% of the insurable deposits. Achieving and maintaining this target level requires high assessment from the financial institutions – members, which is provided through high deposit insurance premium rate of 0.7%. Members of the banking industry of Republic of Macedonia express their dissatisfaction with the premium rate height, but the extreme target level supplemented with high rate of insurable deposits growth doesn't allow deposit insurance premium reduction.

The purpose of this paper is to evaluate the adequacy of the target reserve ratio of the Macedonian deposit insurance fund. The current target ratio of the Deposit Insurance Fund of Republic of Macedonia is evaluated using Historical Intervention Analysis, Coverage Ratio Analysis and Robustness Indicator Analysis. The results of all methods applied indicate that the target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia is set too high and that there is an economic justification for its reduction.

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**Keywords:** deposit insurance system, deposit insurance fund, target reserve ratio, fund sufficiency, intensity ratio, coverage ratio, robustness indicator

**JEL classification:** *G20*

## **Introduction**

The sufficiency of the deposit insurance fund (DIF) is a very important issue for countries that use ex-ante method of funding. The deposit insurance fund should have enough means for prompt reimbursement of the deponents in case of a collapse of the financial institution-member of the deposit insurance system. The lack of resources for reimbursement can produce panic among the deponents, which can induce a bank run and destabilization of the financial system. On the other side, maintaining too large deposit insurance fund will mean unjustified burdening of the financial institution, since they are major financier of the fund through premium payment. The financial institutions are calculating the deposit insurance costs in the passive interest rates through their reduction, and the passive interest rates reduction has its effect on the active interest rates. Therefore, the determination of adequate size of the deposit insurance fund is a very important task, but also a very difficult one as well.

The International Association of Deposit Insurers (IADI) distinguishes two basic methods of evaluation of the deposit insurance fund sufficiency: on the basis of expert opinion and on the basis of risk analysis. The second method is the preferable one and it includes three main approaches: Credit Rating Approach, Econometrical Model Approach and Market Data Model Approach. The expert opinion target reserve ratio is considered as none accurate one because it is set without taking into consideration the probability of default of member banks and the level of insurance liability of the deposit insurance system. This ratio is usually set with a regulation act as a percentage of the total or insurable deposits and often has extreme values of round 5% or even 10%, which are considered as unreachable (IADI, 2011).

The target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia is 4% of the insurable deposits. Achieving and maintaining this extreme target level requires high assessment from the financial institutions – members, which is provided through

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high deposit insurance premium rate of 0.7%. Members of the banking industry of Republic of Macedonia openly express their dissatisfaction with the premium rate height, but the extreme target level supplemented with high rate of insurable deposits growth doesn't allow deposit insurance premium reduction. Opportunity for premium reduction will be open through decrease of the target reserve ratio. Therefore this ratio, which is set on the basis of expert opinion, needs to be reevaluated.

Reevaluating the deposit insurance fund sufficiency on the basis of risk analysis, as proposed by IADI, is not applicable in the case of Republic of Macedonia. The Macedonian financial institutions are not subject to external agency rating, so Credit Rating Approach can't be used. The secondary financial market of Republic of Macedonia is still in the process of development, so Market Data Model Approach isn't suitable to be used. The Econometrical Model Approach is based on usage of data on the financial indicators of the financial institutions and data on the previous interventions of the deposit insurance institution. It is considered unjustified to develop econometrical model in an economy with relatively small number of financial institutions and small number of interventions by the deposit insurance institution, such as Republic of Macedonia.

The purpose of this paper is to reevaluate the target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia. Since the methods proposed in the literature are not suitable for Republic of Macedonia, alternative methods will be applied. The current target ratio of the Deposit Insurance Fund of Republic of Macedonia will be reevaluated using Historical Intervention Analysis, Coverage Ratio Analysis and Robustness Indicator Analysis.

### **Historical Intervention Analysis**

This section will analyze the expenses of the previous interventions of the Deposit Insurance Fund Skopje. The amount of the financial means that are spent for the previous interventions will be criteria for the amount of financial means that should be held in the Fund. In order to use the information on past interventions for determination



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of the Deposit Insurance Fund sufficiency, costs have been compared to the size of the insurable deposits. Specifically, the following ratio, which will be referred as the “*intensity ratio*”, has been defined to classify interventions:

$$\text{Intensity Ratio} = \frac{\text{Total costs of intervention}}{\text{Total amount of insurable deposits}} \times 100$$

Using the intensity ratio, the impact of actual payout have been considered as high (intensity ratio greater or equal than 0.5), medium (intensity ratio between 0.05 and 0.5), and small (intensity ratio smaller or equal than 0.05).<sup>2</sup>

From the establishment of the Deposit Insurance Fund until 31th of May 2012, during the 15 years of the Fund’s existing, 10 risk events have occurred among the Fund's members i.e. 4 banks and 6 savings houses. To the Fund, this meant a potential liability for savers' reimbursement in a total amount of ca. 1.5 billion Denars. Most of which (86.68%) or 1.3 billion Denars of the total liability amount is the calculated reimbursement for the savers of Makedonskabanka AD Skopje under liquidation. The Deposit Insurance Fund with its' own sources of funds managed to reimburse (up to the total deposits by bearers, within the legal framework) all the savers that showed up at the premises of the paying-banks and that have chosen the way they want to dispose with their own resources from the reimbursement.

The intervention costs and the intensity ratio of every single intervention of Deposit Insurance Fund Skopje are presented in Table 1. To compare the impact of these interventions, the total encountered costs are reported at 2010 prices<sup>3</sup>.

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<sup>2</sup>The intensity ratio and the classification of interventions on the basis of this ratio are used by the European Commission for investigation of DGS efficiency.

<sup>3</sup>To estimate the cost at 2010 prices the Consumer Prices Index has been applied. The data base used to discount the prices is available on-line at the following web address:

<http://www.tradingeconomics.com/macedonia/consumer-prices-index>

**Table 1: Intensity Ratio of Interventions of Deposit Insurance Fund-Skopje**

<b>Year</b>	<b>Intervention costs in 000 MKD<sup>4</sup></b>	<b>Intervention costs in 000 MKD (2010)</b>	<b>Intensity ratio</b>
1999	381.20	511.41	0.0004%
2003	91,338.60	105,536.21	0.0722%
2005	72,255.50	83,430.27	0.0571%
2007	1,220,344.20	1,334,933.44	0.9138%
1998	4,919.50	6,577.19	0.0045%
2003	6,767.60	7,819.55	0.0054%
2006	3,239.50	3,624.41	0.0025%
2009	11,489.30	11,702.49	0.0080%
2010	0.00	0.00	0.0000%
2010	0.00	0.00	0.0000%
<b>Total:</b>	<b>1,410,735.40</b>	<b>1,554,134.97</b>	<b>1.0639%</b>

*Source: Calculated by the author on the basis of data from Deposit Insurance Fund Skopje and National Bank of the Republic of Macedonia.*

Because two of the ten risk events that have occurred have no intervention costs, the intensity ratios of only eight interventions will be observed. From the eight observed interventions, four are result of a bank collapse and the other four of a saving house collapse. Only one intervention shows high intensity ratio of 0.9138%, two interventions show medium intensity ratio of 0.0722% and 0.0571% and the other interventions have low intensity ratio. The average intensity ratio of all the interventions is 0.133% which categorizes it as medium intensity ratio. The average intensity ratio of interventions due to banks collapse has a medium value of 0.261% and the average intensity ratio of interventions due to saving houses collapse has a low value of 0.005%. The low value of the intensity ratio of saving houses' interventions is a result of the insignificant part that saving houses deposits have in the total insurable deposits. The intensity ratio of the Deposit Insurance System of Republic of Macedonia is analyzed comparatively to the intensity ratios of EU countries. Table 2 presents the

<sup>4</sup>On 31.12.10 1EUR = 61.505.

intensity ratios and number of interventions of deposit insurance schemes (DIS) of EU countries. The table is formed from data of interventions occurred from 1994 till 2006.

**Table 1: Intensity Ratios of Interventions in DIS of EU Countries**

<b>Country</b>	<b>Number of intervention</b>	<b>Average intensity ratio</b>
<b>Slovakia</b>	4	141.963%
<b>Romania</b>	6	64.808%
<b>Czech Republic</b>	10	18.411%
<b>Estonia</b>	2	13.390%
<b>Bulgaria</b>	3	6.887%
<b>Hungary</b>	3	6.180%
<b>Lithuania</b>	2	4.140%
<b>Austria</b>	4	2.148%
<b>Sweden</b>	2	0.870%
<b>Denmark</b>	4	0.813%
<b>Netherlands</b>	1	0.510%
<b>Belgium</b>	1	0.270%
<b>Greece</b>	1	0.210%
<b>United Kingdom</b>	22	0.000%
<b>Germany</b>	0	0.000%
<b>Ireland</b>	0	0.000%
<b>Spain</b>	0	0.000%
<b>Cyprus</b>	0	0.000%
<b>Latvia</b>	0	0.000%
<b>Luxembourg</b>	0	0.000%
<b>Malta</b>	0	0.000%
<b>Poland</b>	0	0.000%
<b>Portugal</b>	0	0.000%
<b>Slovenia</b>	0	0.000%
<b>Finland</b>	0	0.000%
<b>Average:</b>	<b>2.6</b>	<b>10.424%</b>

*Source: Summarized by the author on the basis of data from: European Commission, Joint Research Center, Investigating the efficiency of EU Deposit Guarantee Schemes, 2008, p. 97-100.*

From the 25 analyzed EU countries, no deposit insurance intervention has been detected in 11. Most of the deposit insurance systems in EU with history of interventions

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have a high intensity ratio. The highest intensity ratios are detected among ex-socialist countries (Slovakia, Romania, Czech Republic, Estonia, Bulgaria and Hungary). The extreme high values of the intensity ratios of some ex-socialist countries (Slovakia 141.963%, Romania 64.808%) have a big contribution to the high value of the average ratio which is 10.424%. The average number of interventions among the countries is 2.6.

The deposit insurance system of Republic of Macedonia has significantly more interventions than the EU average, but the average intensity ratio is significantly lower than the average intensity ratio of EU countries. The average intensity ratio of deposit insurance system of Republic of Macedonia of 0.133% is lower than the intensity ratio of each EU country except of United Kingdom.

Whether the accumulated deposit insurance funds are enough to cover intervention costs of approximately similar amount as the costs of previous interventions can be acknowledged if the intensity ratio, as a ratio of total intervention costs to the total amount of insurable deposits, is compared to the ratio of size of the accumulated fund to the total amount of insurable deposits.

The size of accumulated fund of Deposit Insurance Fund Skopje on 31th of December 2010 was 4.06% of the total amount of insurable deposits. This amount of funds does not only cover the average intensity ratio of 0.133%, but it also covers the highest intensity ratio of 0.9138%. Actually, Deposit Insurance Fund Skopje has enough financial means to cover the total cost of all previous interventions, which indicates great sufficiency of the fund.

Because the intensity ratio is a ratio of the intervention costs to the total amount of insurable deposits and the target level of the deposit insurance fund of Republic of Macedonia is set as a ratio of the amount of accumulated fund to the total amount of insurable deposits, the intensity ratio can be used as a basis for determination of an adequate target level. The target level of the deposit insurance fund of Republic of Macedonia of 4% is 30 times higher than the average intensity ratio. All the intervention costs occurred from the establishment of Deposit Insurance Fund Skopje till 31th of May

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2012 are 1.0639% of the total accumulated funds of the deposit insurance institution i.e. the costs are 3.5 times lower than the target level of the fund. All this indicates that the target level of the deposit insurance fund of Republic of Macedonia is set too high.

### **Coverage Ratio Analysis**

To measure the adequacy of the DGS's resources, DGS funds shall be compared to the amount of eligible deposits of a DGS. The assessment can be done for ex-ante financed DGS in two subsequent steps.

1. Measure of the adequacy of ex-ante readily available funds:

$$\text{Coverage Ratio} = \frac{\text{Size of the Accumulated Fund}}{\text{Eligible Deposits}}$$

2. Measure of the adequacy of total funds, i.e. ex-ante and ex-post component:

$$\text{Max Coverage Ratio} = \frac{\text{Total Funds}}{\text{Eligible Deposits}}$$

These two measures can also be computed hypothesizing that potential failure would not occur for the biggest banks<sup>5</sup>: the coverage ratio is also computed subtracting deposits by the biggest banks from the total amount of eligible deposits.

$$\text{Coverage Ratio (no biggest banks' deposits)} = \frac{\text{Size of Accumulated Fund}}{\text{Eligible deposits - Biggest Banks' Deposits}}$$

$$\text{Max Coverage Ratio (no biggest banks' deposits)} = \frac{\text{Total Funds}}{\text{Eligible deposits - Biggest Banks' Deposits}}$$

Higher values of the ratios presented in this section indicate larger size of the fund.

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<sup>5</sup>IADI's recommendation is that the deposits of the biggest banks should be excluded from the total deposits base when evaluating the sufficiency of the deposit insurance fund.(IADI, 2011)

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The European Commission uses the coverage ratios for measuring the adequacy of deposit insurance funds of the EU countries and in this research the coverage ratios will be used for analysis of the adequacy of the target level of the deposit insurance fund of Republic of Macedonia. The European Commission treats the top-10 bank as “too big to fall”, and in this research, regarding the classification of the banks in Republic of Macedonia<sup>6</sup>, the banks from the group of large banks will be considered as “too big to fall”, i.e. the deposits of the large banks will be considered as biggest banks’ deposits.

The coverage ratio of Republic of Macedonia in 2010 was 4.06%<sup>7</sup>, and the coverage ratio no large banks deposits was 17.19%.

The Law on Deposit Insurance Fund defines the ex-post component of the Deposit Insurance Fund. The Article 8 predicts that in case of lack of resources for depositors’ reimbursement, the Fund shall provide additional resources via the following:

- 1) additional payment from banks, foreign bank branches and saving houses, but not more than triple amount of the premiums, paid in the month prior to the month in which the Governor of the National Bank of the Republic of Macedonia passed the decision pursuant to Article 4-a paragraph 2 of this Law;
- 2) borrowing in the country and abroad;
- 3) borrowing from the Budget of the Republic of Macedonia.

From the three predicted options for additional funding of the Deposit Insurance Fund Skopje, only the first one can be evaluated and as such it is included in the calculation of the maximum coverage ratio.

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<sup>6</sup>Grouping of banks is made according to the size of their assets: the group of small-size banks consists of banks whose assets are less than 5.6 billions Denars, the group of medium-size banks are banks whose assets range between 5.6 billions Denars and 22.5 billions Denars and the group of large banks consists of banks whose assets are higher than 22.5 billions Denars. The limits between separate groups of banks are corrected once a year, according to the economic principle of average growth of total assets. National Bank of Republic of Macedonia, Banking Supervision and Regulation, Banking System Indicators and Reports, Groups of banks as of 31.12.10.

<sup>7</sup>The calculation uses data from the NBRM statistical reports on deposits of banks and saving houses and from the audits reports of the Deposit Insurance Fund Skopje.

The maximum coverage ratio of Republic of Macedonia in 2010 was 4.23%, and the maximum coverage ratio on large banks deposits was 17.93%<sup>8</sup>.

The coverage ratios of the deposit insurance system of Republic of Macedonia are analyzed comparatively to the coverage ratios of the EU countries. Table 3 presents the coverage ratios of deposit insurance schemes of the EU countries.

**Table 2: EU Coverage Ratios and Maximum Coverage Ratios including and excluding the top-10 banks<sup>9</sup>**

Country	Coverage Ratio	Max Coverage Ratio	Coverage Ratio no top-10	Max Coverage Ratio no top-10
Italy	0.00%	0.00%	0.00%	0.00%
Luxembourg	0.00%	0.00%	0.00%	0.00%
Netherlands	0.00%	0.00%	0.00%	0.00%
Austria	0.00%	0.00%	0.00%	0.00%
Slovenia	0.00%	0.00%	0.00%	0.00%
United Kingdom	0.00%	0.00%	0.00%	0.00%
Spain	0.80%	1.00%	2.19%	2.74%
Sweden	0.70%	0.74%	4.41%	4.62%
Czech Republic	0.40%	0.57%	3.35%	4.76%
Hungary	0.56%	0.76%	3.62%	4.91%
Denmark	0.25%	0.46%	2.90%	5.33%
Finland	0.58%	0.63%	7.09%	7.60%
Latvia	0.80%	1.00%	6.59%	8.27%
Belgium	0.33%	0.37%	7.65%	8.67%
<b>EU 15 average</b>	<b>0.51%</b>	<b>0.75%</b>	<b>6.04%</b>	<b>9.73%</b>
Bulgaria	1.62%	3.12%	6.32%	12.19%
Portugal	0.99%	1.40%	9.01%	12.71%
Romania	0.81%	1.82%	6.83%	15.21%
<b>EU average</b>	<b>0.73%</b>	<b>1.11%</b>	<b>7.89%</b>	<b>19.59%</b>
Greece	0.58%	1.69%	9.05%	26.40%
Slovakia	-0.13%	1.63%	-2.19%	28.45%
<b>EU 12 average</b>	<b>0.92%</b>	<b>1.41%</b>	<b>10.05%</b>	<b>29.62%</b>
Malta	0.10%	0.40%	33.58%	132.37%
France	0.09%	0.10%	n/a	n/a

<sup>8</sup>The ex-post component of the funding is calculated as triple amount of the deposit insurance premium for December 2010.

<sup>9</sup>The table is formed with data from 2007.

Cyprus	0.01%	0.31%	n/a	n/a
Ireland	0.26%	0.33%	n/a	n/a
Poland	0.81%	0.86%	n/a	n/a
Estonia	1.78%	2.28%	n/a	n/a
Lithuania	2.32%	2.76%	n/a	n/a
Germany	n/a	n/a	n/a	n/a

Source: European Commission, Joint Research Center, JRS Report under Article 12 of Directive 94/19/EC as amended by Directive 2009/14/EC, 2011, p. 38, available at [http://ec.europa.eu/internal\\_market/bank/docs/guarantee/jrc-rep\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/guarantee/jrc-rep_en.pdf).

The Deposit Insurance Fund of Republic of Macedonia has higher coverage ratio, maximum coverage ratio and coverage ratio no large bank deposits than the EU average, EU 15 average and EU 12 average. Actually, with reference to these three ratios the Deposit Insurance Fund of Republic of Macedonia is bigger than the funds of all EU countries. Only Malta has a higher maximum coverage ratio no top-10. The high value of this ratio is due to the high component of additional funding of the Deposit Insurance System of Malta. The high value of Malta's maximum coverage ratio no top-10 is the reason why the maximum coverage ratio no large bank deposits of Republic of Macedonia is lower than the average of the same ratio for all EU and EU 15 countries. Yet this ratio is higher compared to EU 12 average. The table shows that the deposit insurance funds of the new EU countries, EU 12 countries (mostly former socialist countries), are significantly bigger than the funds of the EU 15 countries.

The coverage ratio, as a ratio of accumulated funds to eligible deposits, should reach the value of the target level of the deposit insurance fund. When the value of the target level is reached, changes can be made in the financing of the deposit insurance system by terminating the banks' obligation for deposit insurance premium payment or deposit insurance premium rate reduction.

The coverage ratio of the Deposit Insurance Fund of Republic of Macedonia in 2010 has reached and for a certain amount outreached the predicted target level. This opens the issue of introduction of changes in the funding of the Macedonian Deposit Insurance System. On the other side, the highest value of the Macedonian coverage ratio among all EU countries indicates that the target level is set too high.



The analysis of the Deposit Insurance Fund Skopje target level adequacy will be expanded with comparative analysis with the target levels of other countries. Setting a target level on deposit insurance funds is applied by small number of countries. The table 3 presents that from 27 EU countries only 10 have defined target levels for their deposit insurance funds.

**Table 3: Description of the Target Levels Applied by some EU DGS**

<b>Country</b>	<b>Target level of the fund - brief description</b>	<b>Target fund as % of 2007 eligible deposits</b>	<b>2007 Coverage Ratio</b>
Bulgaria	5% of the total amount of eligible deposits	5.00%	1.62%
Denmark	EUR 429 500 000	0.22%	0.25%
Estonia	2% of the total amount of eligible deposits	2.00%	1.78%
Spain	1% of the total amount of eligible deposits	1.00%	0.80%
France	EUR 1 500 000 000	0.08%	0.09%
Italy	0.8% of the total amount of covered deposits (virtual fund)	0.56%	0.00%
Lithuania	4% of the total amount of eligible deposits	4.00%	2.32%
Malta	EUR 7 000 000 000	0.10%	0.10%
Romania	EUR 399 000 000	1.48%	0.81%
<b>EU average</b>		<b>1.52%</b>	<b>0.93%</b>

*Source: European Commission, Joint Research Center, JRS Report under Article 12 of Directive 94/19/EC as amended by Directive 2009/14/EC, 2011, p. 40, available at [http://ec.europa.eu/internal\\_market/bank/docs/guarantee/jrc-rep\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/guarantee/jrc-rep_en.pdf).*

The results from a deposit insurance survey conducted by the Canadian Deposit Insurance Corporation indicate the following target levels among the countries members of IADI:

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**Table 4: Targeted Reserve Ratios of Selected Countries**

(as a per cent of total or insured deposits)

(As of Dec. 31, 2007)

<b>Country</b>	<b>Target Ratio</b>	<b>Country</b>	<b>Target Ratio</b>
Venezuela	10.11%	Argentina	0.50%
Columbia	5.00%	Canada	0.40% - 0.50%
Jordan	3.00%	Taiwan	0.30% of insured deposits
Tanzania	2.70%	Singapore	0.30%
Indonesia	2.50%	Bahamas	0.20%
Jamaica	2.00%-2.25%	Honduras	0.10%
Brazil	2.00%	India	0.05%
USA	1.25%		
Average (ex. Venezuela)		<b>1.45%</b>	

*Source: Deposit Insurance Survey, International Association of Deposit Insurers, Funding of Deposit Insurance Systems, Guidance Paper, IADI, 2019, p. 19, available [http://www.iadi.org/docs/Funding%20Final%20Guidance%20Paper%206\\_May\\_2009.pdf](http://www.iadi.org/docs/Funding%20Final%20Guidance%20Paper%206_May_2009.pdf).*

Considerable variations in the target reserve ratios among the countries in the world can be observed by the tables above. Extreme high target reserve ratios among the EU countries have the former socialist countries and among the countries worldwide, countries from Latin America.

The target reserve ratio of Republic of Macedonia of 4% of the insurable deposits is significantly higher both from the EU average and the average of the selected countries from the world (Table 3 and Table 4).

### **Robustness Indicator Analysis**

The robustness indicator can give a significant insight into the current financial stability of the deposit guarantee scheme. Estimation of the maximum resources that the deposit insurance fund can collect is necessary in order of this indicator calculation. The maximum amount of resources includes current funds, maximum level of annual contributions, maximum level of extraordinary contributions, and resources that can be provided by borrowing. The robustness indicator gives the percentage of banks in the deposit insurance scheme, whose deposits are lower or equivalent to the maximum amount of resources available to the DGS:

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$$\text{Robustness Indicator} = \frac{\text{Number of members whose deposits lie under the value of maximum amount of resources}}{\text{Number of member in the DGS}}$$

For example, a value of 90% would indicate that only 10% of the banks have eligible deposits that exceed the available DGS resources. In other words, under the hypothesis of single intervention in the year (multiple intervention in the same year are quite uncommon), the robustness indicator gives the percentage of banks that would be theoretically covered.

The maximum amount of resources that is taken in consideration when calculating the robustness indicator does not include the unlimited borrowing. The possibility of unlimited borrowing is included when calculating the "extended robustness indicator". In DGS where possibility for unlimited borrowing is predicted, the value of the extended robustness indicator is 100%. But, it must be remarked that, even if unlimited borrowing is allowed, recovering a high amount of money could take time. So, when the financial stability of the deposit insurance fund is evaluated, both robustness indicators must be observed parallel.

The maximum amount of resources in the deposit insurance fund of Republic of Macedonia includes current funds, triple amount of monthly premiums and borrowings. With the Article 8 of the Law on Deposit Insurance Fund, the possibility of unlimited borrowing is predicted, so the extended robustness indicator of Republic of Macedonia is 100%.

The robustness indicator of the DGS of Republic of Macedonia in 2010 was 81.25%<sup>10</sup>. This indicates that from 16 financial institutions, members of the deposit insurance system, only three have eligible deposits in higher amount than the maximum amount of resources of the deposit insurance fund. Those three financial institutions are banks from the group of large banks. Taking in consideration the principle of excluding the deposits of the biggest financial institution as "too big to fail", when evaluating the

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<sup>10</sup>The robustness indicator is calculated by the author on the basis of data from the bank's annual reports for 2010.

sufficiency of the deposit insurance fund, the robustness indicator of Republic of Macedonia indicates great financial stability of the fund.

For better interpretation of the robustness indicator of Republic of Macedonia, comparative analysis with the robustness indicators of EU countries have been conducted. The Table 5 presents the robustness indicators of EU countries for 2006.

**Table 5: Robustness Indicators of EU countries**

<b>State</b>	<b>Robustness Indicator</b>	<b>Extended Robustness Indicator</b>
Belgium	83.48%	83.48%
Bulgaria	n/a	100.00%
Czech Republic	80%	80.00%
Denmark	n/a	100.00%
Germany	n/a	n/a
Estonia	71.43%	100.00%
Ireland	n/a	n/a
Greece	46.34%	100.00%
Spain	n/a	100.00%
France	n/a	100.00%
Italy	90.50%	90.50%
Cyprus	37.36%	37.36%
Latvia	25.45%	25.45%
Lithuania	n/a	100.00%
Luxembourg	n/a	n/a
Hungary	95.61%	95.61%
Malta	0.00%	0.00%
Netherland	n/a	n/a
Austria	n/a	100.00%
Poland	n/a	100.00%
Portugal	87.76%	100.00%
Romania	81.25%	100.00%
Slovenia	n/a	100.00%
Slovakia	n/a	100.00%
Finland	76.92%	76.92%
Sweden	n/a	100.00%
United Kingdom	n/a	100.00%
<b>EU average:</b>	<b>64.68%</b>	<b>86.49%</b>

Norway	98.58%	95.58%
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*Source: Summarized by the author on the basis of data from: European Commission, Joint Research Center, Investigating the efficiency of EU Deposit Guarantee Schemes, 2008, p. 29.*

From the 28 countries, analyzed in Table 5, 15 have predicted unlimited additional financing of the deposit insurance system, i.e. those countries have extended robustness indicator of 100%, such as Republic of Macedonia. The average robustness indicator of the EU countries is 64.68% and is significantly lower than the robustness indicator of Republic of Macedonia of 81.25%. The conducted Robustness Indicator Analysis also implies a high target reserve ratio of the Macedonian DIF.

## **Conclusion**

The reevaluation of the target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia led to the following conclusions:

- The average intensity ratio of the Deposit Insurance Fund of Republic of Macedonia, calculated on the basis of all interventions costs incurred from the establishment of the deposit insurance institution up to current date, is 0.133%. That means that the Fund has spent 0.133% of the total amount of the insurable deposits per intervention. The maximum intensity ratio is 0.9138%, and the total amount of resources that the Fund has spent for all conducted interventions is 1.0639% of the insurable deposits. The target reserve ratio of 4% of the insurable deposits is 3.5 times higher than the total amount of resources spent by the Deposit Insurance Fund Skopje for depositors reimbursement, from the its establishment up to current date. Results from the Historical Intervention Analysis show that the target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia is set too high and there is an economic justification for its reduction.
- The Deposit Insurance System of Republic of Macedonia has higher coverage ratio, a maximum coverage ratio and a coverage ratio (no large banks deposits) from EU average, EU 15 average and EU 12 average. The coverage ratio

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represents the portion of accumulated resources in the eligible deposits and its equalizing with the target reserve ratio indicates that the target has been achieved. The coverage ratio of Republic of Macedonia for 2010 was 4.06% (higher than the target reserve ratio), and the EU average was 0.73%. The values of the ratios show that DIF of Macedonia has around 5.5 times more accumulated resources to the eligible deposits than the EU average. The results from the Coverage Ratio Analysis also justify target reserve ratio reduction;

- IADI in the 2011 discussion paper "Evaluation of Deposit Insurance Fund Sufficiency on the Basis of Risk Analysis" points out that target reserve ratio of around 5% to 10% of the eligible deposits is consider as extremely high. The target reserve ratio of Republic of Macedonia of 4% is very close to the defined extreme reserve ratio. The average target reserve ratio of EU countries is 1.52%, and the average target reserve ratio of selected non - EU countries is 1.45%. The comparative analysis of the target level of the Macedonian DIF with other countries target level indicates that the Macedonian target is set too high. This criterion for reevaluation is also pro the target reserve ratio reduction;
- The robustness indicator of Republic Macedonia for 2010 was 81.25%. That means that the total amount of eligible deposits in 81.25% of the financial institutions was lower than the maximum resources of the deposit insurance fund. The average robustness indicator for the EU countries is 64.68%. With reduction of the target reserve ratio to 3% of the eligible deposits, Republic of Macedonia will have a robustness indicator of 62.50% and won't deviate from the EU average.

The results of all methods applied indicate that the target reserve ratio of the Deposit Insurance Fund of Republic of Macedonia is set too high and there is an economic justification for its reduction. Although the target level of the Macedonian DIF is achieved, its maintenance doesn't allow deposit insurance premium reduction. The reduction of the target reserve ratio will open a possibility for premium reduction, so the banks financial burdening on this basis will be decreased.

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## BRANDING AND ITS SUSTAINABILITY IN THE PUBLIC SECTOR

Zanina Kirovska, PhD<sup>1</sup>

Katerina Simonovska, MA<sup>2</sup>

### **ABSTRACT**

A synonym of modern times and public sector, which is increasingly in use, is the term entrepreneurial power, which means adaptability and consistency through modern situational approaches. The basis of this term is the need for complete transformation of the public system into a system focused on results, decentralized management, reducing bureaucracy and competition promotion in government and beyond. In other words a contemporary public sector should be opened towards the market in a way of doing business and marketing principles in operation. Public sector customers (citizens) have the possibility to choose among different services, i.e values, that are offered and that should be clear to the community. The most efficient way to build value and trust among citizens is branding the public sector. Clear and strong brand, should improve the public perception of the quality of goods and services that public sector offers, and this in turn, will increase the trust, loyalty and will help reducing the perceived risk.

**Keywords:** brand equity, brand loyalty, consistency, public sector, rebranding

**JEL Classification:** M31

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## INTRODUCTION

In order to claim that branding is necessary also for the public sector (government's entrepreneurship)<sup>3</sup>, we will quote Drucker: "21st century will be the century of social sector organizations. The more economy, money and information become global, the importance of community increases ..."<sup>4</sup>. This claim inevitably refers to the public sector which, by building a strong brand, will increase awareness of values, trust and community support as a condition of its survival.

The fact that branding in the public sector is possible and necessary regardless of the dimensions and complexity of the system, is the example of the European Union. EU brand is widely represented and promoted not only in member countries but wherever EU builds partner relationships. Sustainability, diversification, democracy and prosperity are key elements in the system of values on which the EU brand is built<sup>5</sup>. European Union branding as a whole or its particular activities, is a global process. Therefore, in all countries where European Union is present, it is continually striving to increase public awareness of the domicile of the European Union, as well as to improve the level of visibility of financial and technical assistance, which EU provides in those relevant countries<sup>6</sup>. Branding in the public sector should allow bringing quality programs and services to citizens, communication values, building trust in order to increase the interest and customer satisfaction and in the same time to assess social usefulness or harmfulness of public investment<sup>7</sup>. Creating a strong brand builds successful relationships with policy makers, based on cooperation, transparency, responsibility and proactive in problem solving and full organizational commitment. Thus, the focus

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<sup>3</sup> Pioneering idea of Osborne and Gaebler, today is the basis for building the institutions of all developed countries

<sup>4</sup> <http://www.leadershipnow.com/druckerremembered.html>

<sup>5</sup> Gyorgy, Urkuti, EU 2011 blog, <http://www.eu2011.hu/blog/branding-eu>

<sup>6</sup> Communication and visibility manual external actions of the European Union, July 2011 Source :[http://eeas.europa.eu/delegations/the\\_former\\_yugoslav\\_republic\\_of\\_macedonia/documents/more\\_info/communication\\_and\\_visibility\\_manual\\_mk.pdf](http://eeas.europa.eu/delegations/the_former_yugoslav_republic_of_macedonia/documents/more_info/communication_and_visibility_manual_mk.pdf)

<sup>7</sup> Analyses: Cost benefit, cost effectiveness analyses & second best theory, used under welfare economics, which touches public goods (services)

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moves to the policy values, created by the department, as well as the expertise and competence of staff in decision-making.

It is important to realize that once constructed strong brand, reduces the impact of negative publicity in adverse events that the public, if it gives the confidence to the department, perceive these events as incidents and not as permanent practice. The citizens (customers) have high brand impartiality for a brand with high awareness, perceived quality and brand loyalty. A brand with strong impartiality has a significant advantage. Also, a brand loyalty is a constant preference for one brand over all others, and the brand identity is essential to the development of brand loyalty.

The most important objective of branding is identification, for distinguishing purpose of products and services to the public sector. Brands of the public sector should be familiar to the citizens and to indicate quality. The best vehicle for *resale* is a satisfied customer. Branding helps citizens to identify public services they want to reuse and avoid those that do not want. The Internet provides new alternatives for gathering brand awareness, promoting the desired brand image, stimulating new and recurring sales for the brand, enhance brand loyalty and build brand equity.

Co-branding<sup>8</sup> may be a useful strategy when the combination of brand names enhances the prestige or perceived service value or when public sector and citizens benefit from it, because there is a common value in establishing these relationships. Co-branding can be used to increase the presence of the public sector, where there is little or no part. Skepticism for trying new brands in the public sector should not have, but on the contrary, there must be a willingness of the public sector and attempts with new brands.

### **1. Branding strategy in the public sector**

The branding strategy, when implemented successfully, promotes and presents recognition by the general public, i.e. creates reputation and positive image. In the public sector, marketing efforts for a successful brand, are focused towards citizens'

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<sup>8</sup> Charles W.Lamb, Joseph F. Hair, Carl McDaniel; *Marketing 11*, 2009 South Western Cengage Learning

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satisfaction - consumers, regardless of the fact that, often there is no direct or indirect competition. But the monopoly of the public sector market does not automatically mean customer satisfaction. On the contrary, because of the public sector position and specifications, marketing has a wider role or influence and is dependent on the overall social community. In the focus of the public sector marketing activities, there is no segmentation and targeting of groups of users, but still need to fulfill the demands of different and often conflict interests.

Public sector brand should define relationships with stakeholders: citizens, economic policy makers, private sector and other institutions of the system. Therefore, branding in the public sector has its own peculiarities, which distinguish it from the private sector. First distinctiveness arises from the fact that the state is the creator of social and economic policy, and hence, as noted by Humphreys<sup>9</sup>, it has the power to impose taxes, to prosecute, to punish, and to provide crucial services, such as rule of law. This all creates a specific and unavoidable connections with citizens that the public sector must take into account in the process of branding. Elements of power and reliability have greater importance to public sector brands than the private sector.

Another fact is that branding of one public service inevitably affects the other. Therefore the branding process with effective brand structure in the public sector is more complex. Unlike the private sector, which has the possibility to choose between different marketing and branding strategies, the public sector needs to focus on its specifics, implementing in the branding process strictly defined principles. (*clarity, fulfillment of promises, trust of citizens, attractive and inspiring brands, highlighting the functional qualities and added value of public goods and services*).

In the process of creating a brand of public sector, the key messages must be defined in order what brand needs to convey further, to select relevant information and to reject irrelevant, and thus tends to bureaucratization in the process of communication within the enterprise and beyond with external public.

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<sup>9</sup> Humphreys, James - Branding in the Public Sector, Woodnewton Research Paper 2, 2011

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There is a procedure for the branding process in the public sector and the process of maintaining the desired brand<sup>10</sup>. When creating a desirable brand there are several procedural phases which subsequently operate in practice of the public sector: *Determining the brand intentions, identifying the target audience for the brand, Articulation of the desired brand identity, The brand promise building, Determining the position of the brand in terms of competition; Choosing brand elements.*

Besides introducing procedure, the great importance has also maintenance procedure of the desired brand image. It is the second stage in the process of public sector branding, which consists of the following steps: *Preparation of instruction manual of the brand elements, Audit and management points of contact of the brand; Providing adequate visibility, Monitoring and control of the brand position; Continuous adherence or brand loyalty on long term basis.*

## **2. Brand research and brand sustainability in the public sector**

There is a limited empirical research on the brand and the branding process in the public sector, as well as their importance and role i.e. applicability in this sector. Utility Branding Network<sup>11</sup> in America, provides an overview on several case studies of successfully implemented branding in certain segments of the public sector<sup>12</sup>. Research on branding in the public sector need to answer the following questions: Does branding the public sector have the same effects as branding the private sector? Are investments and efforts for branding the public sector necessary and justified?

### **2.1. Successful branding experiences in the public sector and its effects**

#### **2.1.1. Butler County Department of Environmental Services<sup>13</sup>**

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<sup>10</sup> Kotler, Phillip, Nancy Lee; Marketing in the public sector: a roadmap for improved performance, Wharton School Publishing (2007)

<sup>11</sup> <http://www.utilitybranding.net/pdfs/BrandingManualFINALPDF.pdf>, his network was established in 2007 and is a project financed by the National Institute of Water Research California founded in 1991 which finances projects and programmes focused on providing safe sources of drinking water.

<sup>12</sup> Manual prepared by them, titled "Building a brand utilities wastewater treatment - Practical tips for increasing confidence, support and investment.

<sup>13</sup> hereinafter BCDES

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BCDES is an example for introduction a corporate brand which includes all services offered to citizens (water supply, sanitation and recycling services). The practical realization is implemented by the management team BCDES which has been referred to cooperation, in order to develop a series of brand expressions that will highlight what customers can get when it comes to BCDES services. In their brand strategy programs that is currently going on are enclosures to bills, applying the rule that multiple but simple communication segments are their strategy for brand development (increase the clarity, consistency and efficiency of communications).

New expressions of the brand simplify the collaboration with the sector, offer information on commitment to quality and reliability of products and provide information for sustainable investments in water supply. It is implemented through appropriate contributions to monthly bills for delivered services:

- Transmit multiple objectives of the brand in the form of short communications segment, and the use of a series of reports on the accounts of BCDES allows to send consistent messages to the wider public,
- Transmit information about easier recycling through developing a tool that helps citizens to locate recycling sites for specific items to the nearest recycling point to their homes or jobs;
- Committed to BCDES for environmental protection, BCDES has developed slogan "Leadership in water, public health and environment" in order to highlight the role of the sector;
- Emphasize the importance of planning the future and ensuring adequate investment in community water supply and environment. Replacing the old pumping station straightly reminds customers that the investment is worth getting feedback, and demonstrate commitment in achieving BCDES local needs and encourages citizens to get involved in future investment decisions;
- Emphasize also the message of safety in water. Finally, concerns about the design of the pump station that should be fit in in the environment

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### ***2.1.2. Orange County Sanitation District<sup>14</sup>***

The case of OCSD stresses several key elements in the process of branding and management. In fact, the building brand has begun with building an adequate relationship between staff and public policy makers. Furthermore, the staff characteristics in these relationships and interactions are key components of the brand and have a major impact on the quality of political decisions. Such features are: clarity in communication, cooperation, openness, accountability and proactive in solving problems. However positive OCSD brand, was built at the moment, when organizational commitment was clearly defined to achieving the goals.

How? The board of directors hired a new manager in OCSD, who introduced a new "approach oriented towards the board of directors" in the process of planning and decision making. The new OCSD approach (open and collaborative relationship), provided building a new brand towards transparency, clarity and openness of communication.

On the other hand, brand built like this, led to careful financial management and performance. This results in savings of 10 million U.S. dollars in operating costs. Hence, improvements in financial management and performance are strong elements of branding and have a great effect especially in public policy makers for making better decisions whose ultimate goal is to provide the necessary investment.

### ***2.1.3. South Tahoe Public Utility District***

The communal areas of South Tahoe (STPUD)<sup>15</sup> is a positive example of brand building of the public sector on the basis of openness and cooperation with members of the community in which it operates. When specific public sector activities have an impact on certain communities, there is a principle that should be applied - timely information. In order to ensure transparency and to provide support for the implementation of investment projects, STPUD has formed an advisory group, which includes the

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<sup>14</sup> hereinafter OCSD

<sup>15</sup> hereinafter STPUD

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residents or members of the community (for issues regarding the environment such as: architectural solution, style, color, noise control, etc.). This approach of consultation and collaboration with community STPUD have helped implementation of better projects in less time, and positive impressions of community members for long-term public sector. Shortly, the experience shows that the advantages of this approach are multiple: on one hand it is a process which is easily enforceable and generate a minimum cost, and on the other, there is a long-term investment in real and important value - sustainable brand of public sector (enterprise).

#### ***2.1.4. Inland Empire Composting Authority***

In the brand of Inland Empire Composting Authority (IECA)<sup>16</sup> have been incorporated more important features that are prerequisites of the so-called strong brand: familiarity, consistency and high quality products. In short, the efforts of IECA are building a brand that clearly defines and transmits the focus on the public sector for high quality products, their reliability, and tactics in providing long-term partnership relationships with customers. This study is an example of such a product through focus, extensive marketing activities and impressive processing capacity, develop strong brand and high demand for its products. The product (organic solid waste) is linked to the environment and long term sustainability of every aspect.

The final product is focused on marketing and branding<sup>17</sup>, not only on the disposal of waste (2 years before the production of compost begins). Besides, this public company through branding, highlights the following attributes: product quality, long-term investment, rationalization of costs, protect the environment, sustainability (although it is uncommon for bulk products). A key goal of marketing is to build IECA strong demand for products SoilPro brand and achieve higher prices. These efforts are carried

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<sup>16</sup> hereinafter IECA

<sup>17</sup> Founded as a partnership between the Agency for utility issues and Los Angeles medical sectors, the company is focused on producing top quality compost in accordance to the recommendations of US Composting Council quality programme.

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out by IECA investment in building a warehouse for storage nearby, thus avoiding the sale of products at lower prices, when there is temporary reduction in demand.

Arguments are proven through:

- Special production technology (fulfillment of some of the most rigorous regulations in the world, in terms of air quality);
- The size of the processing capacity and regulations for greenhouse gases control, were seeking substantial amount of investment in order to meet these criteria. The exact level of investment sends a clear message that the processing capacity and the brand SoilPro are in fact long-term activities. Finally, due to the technology of processing capacity, IECA is able to offer different classes of compost, which manages to reach more segments of consumers;
- Net cost of production and marketing in the SoilPro products are comparable to other options for solid waste management, recycling and reuse. Rationality and cost efficiency is based on the fact that half of IECA necessary electricity is provided via solar panels, which significantly reduces the total cost of production.
- - One of the reasons for persistence and sustainability of IECA products, is that they are produced in closed type of processing and thus they are not dependent on weather conditions. That has IECA enabled to gain customer confidence that led signing of numerous long-term cooperation agreements. Further more, consistency of SoilPro brand products, is increased by fact that IECA was able to offer a guaranteed minimum of nutrients, something that is, again, not common for bulk products.

#### ***2.1.5. City of Phoenix Water Service Department<sup>18</sup>***

Informative material used by the company<sup>19</sup> in communication with members of the community, provides clear information on long-term value and benefits of the project

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<sup>18</sup> Hereinafter CPWSD

<sup>19</sup> SPVSD in communication with service users and uses information supplied material - door hangers, which informs the public about planned construction projects.



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and clearly underlines commitment of the Department of Utilities towards the realization of this project. They are a good example of building an impression and brand building, when people are willing to listen.

As an extract of informative material, is the following: "*What should I expect to see and hear? (follow explanation of their engagement, the place, time, etc.; dedicated to protecting the public health (environmental plan, program protection, etc. is shortly listed);*

Either in addition to some of their slogans: We are committed to proactive planning for our community needs, we are committed to public health and environment protection and promotion with safe and secure sewer infrastructure and proper capacity, which will be able to meet the city of Phoenix future needs, we are committed to effectively manage projects and improve as much as possible to reduce the problems of the community, which may occur in the sewage system malfunctions. Proactive maintenance and replacement programs minimize problems and improve quality of life for the citizens of Phoenix. We appreciate your support and we are aware that this project may cause difficulties in the short term, but will provide long term benefits for you and your neighbors. "

#### ***2.1.6. West Basin Municipal Water District<sup>20</sup>***

WBMWD is an example of successfully implemented process of building a positive brand, in order to achieve the goals and objectives of the company. They introduce branding to enable perception change of society in terms of public goods and services that the public sector has created and offered by clear communication, the company's vision and goals, the values that it creates for the wider community, increase confidence and reduce perceived risk.

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<sup>20</sup> hereinafter WBMWD

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Everything began with the necessity WBMWD, as an established innovative leader in the industry<sup>21</sup>, to face several challenges in the operating:

- need of "new" investment in water supply system
- launching a new programme for water supply reliability in 2020
- reduction of imports water from the current 66% to 33% by 2020
- doubling of recycling and conservation of water
- the need of effective messages in order to gain support for implementation of the programme in 2020.

To accomplish these tasks, it was necessary the community to obtain complete perception of the reasons behind the WBMWD innovative culture and leadership. Therefore it was decided to strengthen the company corporate brand, by formalizing a set of obligations to customers and improved communication of values, benefits and cost savings. The company mission, vision and goals were turned into a list of duties that once adopted, while commitments (operations and key decisions), renamed in all types of communication, and were aggressively implemented. The results of this campaign have shown that this is a simple, clear and attractive way of communicating the brand, not only for customers, but for employees in the company too. In order to achieve the expected results, it was necessary the board or management to be included in the campaign, whose main task was to act in accordance. These simple actions have had a significant impact on the consistency and clarity of communications WBMWD.

Posters, advertising marketing material, statement of undertaken activities, were placed in elevators in the administrative building and halls of WBMWD, offices and conference halls. Thus the visitors were informed about the entire WBMWD efforts towards achieving commitments to citizens and the community.

Eventually, evaluating the success of their brand, they produced comparative list of responsibilities with achieved results.

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<sup>21</sup> VBMVD is a another area of the state of California and innovative public agency whose core business is a supply of clean drinking water and treatment and recycling of wastewater for citizens whose jurisdiction covers an area of 185 square miles.

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Facts show that branding as a concept and principle is not well-known to the public sector and public enterprises managers in the Republic of Macedonia. Only few public companies and institutions that realized the importance of branding as a strategic process, and even fewer of those who have applied it, especially the fact that branding is aimed at improving the community perception and potential investors for importance and value that creates public sector.

### ***2.1.7. JSP Public Transport Company - Skopje***

In less than two years between 2009 and 2011, this company completely changed its image, which significantly influence change in the perception of citizens about the company and offered services. The success of the JSP lies in its full rebranding as a service of citizens.

The process runs in almost all areas of operation:

- **The new slogan** " JSP - your faithful companion " clearly defines the company efforts for loyalty, comfort and service efficiency. Branding the individual services has been implemented with the slogan "We go up," which branded the new service for passengers transport from *Sredno Vodno* area to the top of the Vodno Mountain by cable car.
- **Improved information system for users by introducing** new and completely rebranded website and new customer information system<sup>22</sup>. Another news is an interactive trip planner, which allows citizens, by entering the final destination, to optimally plan their trip and to get information on bus routes.
- **Changing the employees behavior** through the process of company internal branding, or building an organizational culture that continuously and permanently supports the brand through the introduction of employee code of conduct<sup>23</sup>. Through it employees will have to to promote the basic elements of

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<sup>22</sup> source <http://www.jsp.com.mk/>

<sup>23</sup> An extract from the employee code of conduct: "environment where we have been working in recent years, has been rapidly changing, both in terms of legislation, and in terms of requirements for achieving higher standards. Thus emerges the standards harmonization for employee behavior. Code of Conduct provides new commitments for employees, but also refers to the famous system of values

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the new brand values that the company creates for citizens and commitment to service delivery and permanent high quality<sup>24</sup>.

- **Building relationships with the community, public private partnerships and innovation at work** through free wireless internet on buses in cooperation with T-Mobile Macedonia, through the campaign to promote the use of bus transportation as the safest, environmentally friendliest, most flexible and accessible transportation, promoting free transport for senior citizens on certain days and setting up information displays on bus stops, call for public-private partnership for setting up bus stops.

If there is constancy and dedication in fulfilling the commitments, according to determined values and establishing an open and permanent communication with citizens and all involved parties, JSP Skopje is on a good way to build a strong, sustainable and recognizable brand, which will increase trust in the community, and will provide support and ability to attract investment, from budget funds and private equity. The key advantages of bringing their brand are primarily in:

- plentiful advertising among citizens, which helps to develop a strong loyalty;
- well-known JSP brand can attract new customers and enhance the prestige in that kind of public service;
- offering fast service, allows this public enterprise to cooperate with small number of agents.

If it happens competition to "sell" better brand, citizens (customers) can simply change their brand and become loyal to the competition.

### **3. Final perceptions and recommendations**

Taking into account the specificities of the sector, branding in the public sector- primarily economic and political complexity, should use branding as a powerful marketing tool, which aims to:

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of the company, as an expression of its professionalism and business, at all levels of the business organization".

<sup>24</sup> [http://www.jsp.com.mk/upload/Kodeks\\_vraboteni.pdf](http://www.jsp.com.mk/upload/Kodeks_vraboteni.pdf) , employee code of conduct, JSP website, September 2010.

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- Create public reputation and credibility (ex. professionalism, care, orientation towards quality of life)
  - Justify certain decisions or actions (ex. reducing services, increasing prices, austerity measures, etc.)
  - Promote key social issues (ex. measures to protect the environment, and healthy supply of clean drinking water),
  - Raise public awareness (ex. promotion of new services, boost the use of new or existing services, investments).

The process of branding in the public sector is a comprehensive, integrated approach to strategic planning, marketing communications and design, in order to create a continuous, lasting and positive image among the citizens i.e. wider public for this department and what it does and offers. The process of branding in the public sector which is perceived and applied in this way, will bring the expected results. New marketing trends also affect to this, which impose some challenges in the public sector:

- Active participation and struggle for both customers and sources of financing;
- the main goal of public sector existence are citizens-consumers of public services;
- the public sector is required innovation in operations, new technologies and investments in environmental protection;
- Implementation of investment projects, with the support of the public and government.

Branding should be expected and legitimate response of the public sector, in terms of increase the awareness of the public about the activities, values and the need for investment. Public companies that have public support, have the ability to influence and stake in the investment policy of the state to finance their investment projects.

If there are strong brands, they have the power to dictate and control the prices of their products or services. That this is applicable in the public sector, is the fact that public enterprises is very difficult to maintain or increase the level of service prices in

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an effort to provide for capital investment projects, without support from policy and stakeholders, primarily citizens.

It must be mentioned that the strategy for branding increases visibility and confidence on one hand, but reduces the perceived risk for the companies on the other hand, which is a requirement to attract the interest of the private sector in financing capital projects in the public sector, as well as providing grants and loans from international financial institutions.

Finally to conclude. Can we answer the question: Is there a real benefit from branding of the public sector in terms of gaining trust, credibility and loyalty among citizens, in order to attract investment capital for its development and progress.

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## E-COMMERCE – CHALLENGE FOR SUSTAINABLE DEVELOPMENT OF COMPANIES

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### **ABSTRACT**

We live in a time not marked by the bigger eating the smaller but by the faster passing the slower. Following and implementing new technological achievements and new trading trends is no longer a job of few technically knowledgeable people. E-commerce and Internet marketing became an imperative in the modern business world. If the manager wants to keep company sustainable on medium and long run, has no other choice but to join new trends of doing business. The best and the most efficient way for a manager to improve the operations and company performance is to implement new technologies and engage in e-commerce and Internet marketing.

E-commerce is a new, innovative manner for company operations by actively using ICT and digitalisation of business processes. E-commerce is treated as running business transactions through online networks: it offers savings (resulting in price reduction for certain transactions) and growth (resulting in greater number of business transactions in a time period). By joining the e-commerce, companies reduce communication costs, the costs for collecting information, promotion costs, labour costs (they need less employees) etc. The Republic of Macedonia adopted a Law on Electronic Communications, meeting the international standards and enabling Macedonian companies to join the global trend of e-communication. Macedonian banks have moved forward in offering e-banking services and enabling payment transactions between banks and companies, as well as among companies

**Keywords:** Internet, e-commerce, interactivity, Internet marketing, sustainability

**JEL classification:** L81

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## 1. Introduction – Brief history of Internet

The Internet is defined as a publicly accessible network of interconnected computers, between which data is transmitted. The Internet is a vast computer network that everyone who owns a computer can join and get a feeling that has a giant computer, spread around the world - a source of countless information. Very often Internet is called "Network of Networks", network that connects millions of smaller network, connections at universities, scientists, business and government groups, people with common field of interest as well as place to do business, one of prerogatives of sustainability of every company nowadays.

The Internet is a result of people visionaries, who in the second half of the last century saw great potential in computers - the ability to exchange information among themselves. This interest was primarily in the field of science and military industry. Researchers at MIT in 1965 manage to connect a computer in Massachusetts to a computer to a computer in California and to exchange information between them.<sup>2</sup>

Research in this area is under surveillance and restricted access (through the Defense Advanced Research Projects Agency-DRAPA). Through this project (then known under the name ARPANET) in 1969 a connection of four major computers at four different universities was archived, including UCLA, Stanford Research Institute, UCSB and University of Utah<sup>3</sup>. Further course of events speaks of gradual development of this network, on other universities and its spreading.

However, the largest growth of the Internet is happening in the 70`s, last century. The first public promotion project ARPANET experiences in late 1972, when it was first launched and the new "hot" application - electronic mail.<sup>4</sup> Internet, created and developed by the U.S. government, initially was only available to government users and scientists. For commercial purposes was not used, it was even banned, unless they served the purposes of the U.S. Government or researchers.

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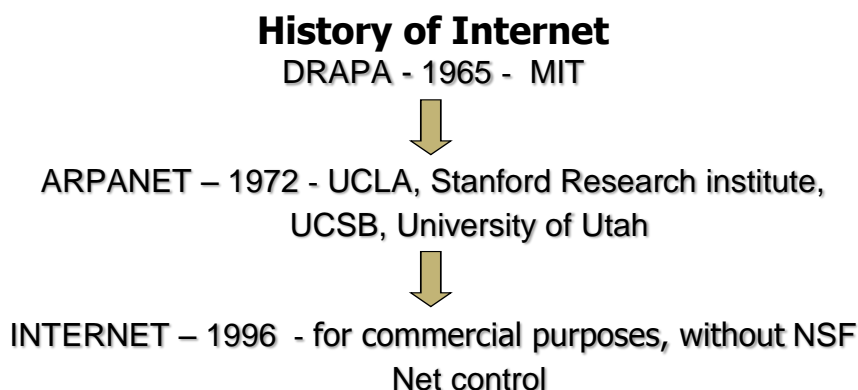
<sup>2</sup> <http://www.isoc.org>; Walt Howe's Internet Learning Center, internet history links for Internet society

<sup>3</sup> Ibid

<sup>4</sup> Ibid

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This situation continued until the early 90`s of last century, when grow and develop of independent commercial networks began. Then becomes possible to develop traffic across the country (USA) on a commercial base, without having to go through government NSFNet (NATIONAL Science Foundation).



**Picture 1.** History of Internet. Source: <http://www.isoc.org>; links: Internet society

Regarding Europe, Internet network receives public image in 1991 with the establishment of Internet connectivity between France and Switzerland.<sup>5</sup> The initial investment of the U.S. government is no longer available. Now the problem is with the ownership of the Internet and the large investment that is necessary to make further research and improvement of the network.

If we observe the percentage of users (100 %), U.S.A. hold primacy, followed by China. China gets a second place in the world by number of Internet users primarily because 1.3 billion people live in China, but given the fact that we are talking about the one of the fastest growing economy in the world, the world sees China as a potential market for many products, especially on internet merchants. The number of over a billion users talk about the enormous size and potential of the Internet market, like any other.

If we approach analytically, we will see that nearly 80% of current users come from the top 20 countries regarding number of Internet users, so it is clear that the growth of Internet users will not end in the foreseeable future, it will rapidly continue spreading

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<sup>5</sup> Ibid

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in many other countries as well. There are many countries that will experience growth in the number of Internet users, and thus will enhance the potential of the Internet market.

In terms of companies number of Internet users is crucial in making the decision to engage in electronic commerce, or the introduction of Internet marketing. The increase in the number of Internet users directly and positively affects the growth and importance of electronic commerce and the effects are achieved by conducting marketing online.

However for companies reaching out for sustainability, it is not sufficient to have high number of internet users, more important is how many of them are using Internet to search and buy products. For example, Sweden has very high percentage of Internet users and very high percentage of users of Internet that execute orders via Internet while Korea, for example, despite the high percentage of Internet users, has a small percentage of users who perform orders of goods and services via the Internet. Turkey and Italy have the lowest percentage of Internet users and the users who perform orders of goods and services through the Internet, so companies can expect rapid development in near future.

The changes are also experienced in the business sector. The development of the computer technology, the appearance and the rapid development of the Internet affects the company manner of running business and the company environment; traditional markets and the traditional manner of running the business changes. Cyber space leads us in a time when buying or selling become even more automatic and convenient.

## **2. Entering E- commerce**

Greater possibilities emerge for accessing even the most distant markets. The easy access on the markets increases the competition on those markets, and if the companies wish to succeed and stay on the market, they are fostered to accept new

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trading manners; they face narrowed profit margins and greater expectations from buyers.

All this leads to an era of greater and much different competition, where being successful requires knowing and having the latest information technology. Faster processors and company networks are only part of the new assets for which companies set aside significant portion of their revenues. Speed and having information are key to the success of the company. The information becomes a capital owned by the company. Companies use information technology to interconnect and exchange information and data, reducing the costs therefor, thus improving productivity and increasing the loyalty towards clients.

The virtual space of the Internet or Cyber Space is introduced at a time when buying or selling are more automate and become more fit for e-commerce. E-commerce is growing fast. Operations are both interconnected and connected with the buyers in a irreproachable virtual network. Data travel through the Internet around the globe at the very moment at no cost. Trade is faster and facilitated. Sellers find it easier to identify potential buyers and buyers find it easier to find the best sellers and products. Time and space distance, once a barrier in the form of costs and trade limitation, is immeasurably reduced today. Sellers that wish to continue the old way would gradually disappear from the scene and are threatened to be unsustainable on medium and long run. Futuristic scenarios become a reality. People's lives change.

The biggest and the most significant change in the business world is the introduction of e-commerce or online execution of commercial transactions. E-commerce is directly connected with the appearance and the rapid growth of the Internet. Electronic commerce (e-commerce) is a system not limited only to buying and selling of products and services so as to make profits, but also covers the creation of demand for these products and services, assistance to consumers in the sales and services, as well as facilitation of communication between business partners. In sum, e-commerce is treated as running business transactions through online networks: it offers savings

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(resulting in price reduction for certain transactions) and growth (resulting in greater number of business transactions in a time period).

E-commerce offers more advantages both for the company, the buyers and the community. Some of these are the following:

- Companies have an opportunity for fast and cheap research of the global markets, create competitive products for accessing these markets.
- By joining the e-commerce, companies reduce communication costs, the costs for collecting information, promotion costs, labour costs (they need less employees) etc.
- Companies offering products via the Internet have no business hours and are not closed – they work 24 hours a day, 7 days a week.
- It enabled having online catalogues which could never be compared (having in mind their volume) with the printed and mailed catalogues , making them at the same time accessible for much greater audience and reducing the distribution costs.
- It enables simpler, faster ordering of products (for example, through e-mail).
- Buyers shop from home any time during day and night.
- Through easily accessible databases, buyers search product specifics and price in detail. They become aware of the better products and buy at lower prices.
- The expansion of e-commerce results in less travelling and more buying from home. Traffic jams and environmental pollution are reduced.
- In rural areas, e-commerce enables people to access some products or services more easily and companies to expand their market and opportunities for selling to buyers located far from the selling posts, and if the products is not available in this manner, they would not buy it at all.

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But companies that wish to join e-commerce, before doing so, they should take into account that all products are not equally suitable for this type of sale. For example:

- Products that are difficult to find, being in small supply, but also in small demand on the market, which have specific features, are best offered via Internet. This could include rare objects, antiques, special editions, books etc.
- Products requiring time and effort for researching their characteristics, as well as a need to try before buying, such as high-tech products, face limitations when being sold through the Internet. But extensive information the company would offer on its website, as well as the possibility for any interested buyer to ask a question and receive an answer facilitates online purchase of these products.
- Low-price every-day consumption products are the least suitable for sale through the Internet, and the probability to be ordered is very low.
- The category of products being specific due to their sensitive and personal nature are suitable for selling through the Internet since there is no personal contact with the seller and the privacy of the buyer is preserved.

There are some specific steps that the company should accept. The company should take into account that consumers appreciate the so-called gift economy, which impose obligation on company to offer some free information or samples. Consumers also do not want to give part of their privacy. In order to meet consumers wishes, the company could offer the transaction to be carried out through intermediaries - financial institutions or herself to try to create a trusted relationship with consumers. Also, consumers may be skeptical about whether they will get products that have been paid and will it be within the agreed timeframe. Customers can be skeptical about the quality and characteristics of the product that they by themselves have not touched or tasted. Therefore, the company needs to hire a credible marketer and build confidence among customers.

Introducing managers with thorough knowledge of information technologies, as a standard for any management is a new quality of the company management. Here we

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add the fact that developing a strategy for applying certain information technology (IT) becomes a part of the business design process.

Often we make confusion between the terms World Wide Web and Internet. The Internet is a global network, while the World Wide Web represents millions of data placed on that network. World Wide Web is encyclopedia, kind of enormous, inexhaustible source of information from different areas. The possibility that once gave libraries for electronic search of their information fund, today World Wide Web has exceeded by far.

Here are some of the most valuable features of Internet for companies:

Quite appropriate for companies is setting of Web cameras, which can in real time to observe what is currently going on and record. For example, the distribution company from Macedonia, exercising delivery in Panama, can observe the arrival of the ship in port in Panama, in real time.

Streaming Media means watching live audio and video material. Recorded material can be viewed directly on the Internet network or be downloaded to a computer and reviewed / only hearing from him at any time. What is important for companies, Streaming Media includes video-conference connections. These are often used in business communication between companies separated with large geographic distances. Through conference links, companies realize a personal, face to face (rather than written) contact and thereby save time, travel and many other resources.

Internet telephony, further facilitates and accelerates communication. The telephone communication is possible in different parts of the world at a much lower price (price on the Internet) than that of traditional phones. This is a great relief, in terms of cost, for companies operating worldwide. Internet telephony appears for the first time in 2000 and its quality still varies, but it is important that the Internet offers voice traffic.

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### **3. Necessity of Internet marketing**

It is thought that the target group of Internet marketing would be teenagers and young people, because they grew up along with the expansion of the Internet and because they accept changes and adapt to them more rapidly. Yet statistics show that they just spent more time on the Internet and the older ones are the major online buyers, mostly luxury and expensive products in electronics, automotive and luxury travel.

Still, no matter how great potential in electronic and especially trading online is, directing the company's marketing only to the electronic market is not justified. In this way company can lose the entire market and in countries with a lower level of development, where Internet coverage network is small or education of the people is low as well as some buyers do not feel comfortable and secure shopping online. Of course the level of risk and the potential size of the market which would be lost depend on the habits of buyers and product company.

The fact that the products offered on the market through Internet marketing, customers can not touch and taste is factor of limitation. Some companies offer the chance to return products purchased online, without having to explain why customers keep returning. In some countries, such as Germany in year 2000, introduced standards that companies must observe and perform return of the products if customers request it from them.<sup>6</sup> As a result, Germany's shopping online is very popular.

To this should be added the problem of security in online trading. Customers have confidence in the way of online payment. For them there is no doubt that the personal data they provide when buying, can be misused for other purposes. Some companies provide guarantees that they will keep buyers data as a secret.

There are several assumptions about further development of electronic marketing:<sup>7</sup>

1. Because the cost of obtaining the information are falling, buyers will increasingly appreciate markets that are characterized with high information and coordination costs.

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<sup>6</sup> The economist Magazine, 11/2012

<sup>7</sup> R.A.Mohamed, R.J.Fisher, B.J.Jaworski, G.J.Paddison, Internet marketing, Mc Graw-Hill, New York, 2004.



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Namely, every buyer wants access to more information in a short time. The Internet provides a multitude of information about prices and features and enables simple order of the selected product.

2. Well-known and increasingly standardized products will be vigorously sold in electronic markets, given the fact that customers will not be able to see or touch these products. Already known and standardized products have advantage in sales through electronic channels. Certainly there are advantages in products such as books, music, videotapes and other generally known products. Suppose that someone would like to buy a high quality music system. He would need a lot of data for different brands, their features and opinion of experts.

3. Products with constant telephone support have a good chance to be sold on electronic markets, simply because of the manner and speed of communication.

4. Companies with successful non-electronic (traditional) sales channels, will also try to establish electronic sales channels if they anticipate an increase in total profit. At the heart of every company is to strive to increase profits, so those companies that are successful in their traditional way of selling, will try electronic markets as well, hoping to achieve even higher earnings.

5. Electronic links between companies is likely to intensify in the following situations:

- when the big buyers will see the opportunity for great savings from centralized purchasing and inventory management and the establishment of an electronic link with suppliers;
- When a substantial savings in production will be obtained, due to on time delivery, which requires manufacturer and supplier to be electronically connected;
- When the company will see big savings in choosing a smaller number of large suppliers, and will establish strong ties with them.

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The assumption is based on common sense that companies should accept something if it facilitates their working, accelerates performance and therefore cost less.

The Internet is threatening as the strongest electronic media which is available for marketing and therefore draws the huge attention. For certain groups of products becomes a major source of information. According J.D. Power and Associates<sup>8</sup>, 62% of car buyers do Internet research on cars and manufacturers before you decide to buy. In the case of BMW and Volvo 85% of car buyers do research on features online before they decide which car to purchase. Companies are aware of this fact, so they use Internet to poses movies online for their products.

#### 4. **Conclusion**

Changes in the world generally are felt in the business sector. The development of computer technology, the emergence and rapid growth of the Internet affects the manner it witch operations of the company are done. Practically all the business environment is changing. Traditional markets and traditional way of doing business is abandoned.

Internet increased opportunities for access and remote markets enormously. Facing facilitated access to markets and increasing competition in those markets, companies are forced, if they want to succeed and survive in the market to accept new ways of trading. Companies are faced with tight profit margins and higher expectations from customers.

All this leads to a new era of intensified and very different competition, when in order to be successful, it is necessary to know and has the latest information technology. Faster processors, having a reliable network in companies, are just some of the new tools that companies allocate a significant part of their income. Speed and possession of information is key to the success of the company. Information becomes capital that a company owns. Companies use information technology to connect with each other

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<sup>8</sup> Ibid

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and share information and data, reducing the cost of it, thus improving productivity and increasing customer loyalty.

Electronic commerce (E - commerce) is a system that is not limited to buying and selling products and services for the sole purpose of achieving income, but also includes the creation of demand for these products and services, assistance with sales and services to customers, and facilitating communication between business partners. In short, electronic commerce is treated as running a business transaction through electronic networks rather than via paper, telephone, airplane and other means of transmission products and information.

E-commerce brings many advantages for everyone, including the company, customers and communities as a whole. One of the advantages is that companies get the opportunity to quickly and inexpensively explore markets in the world, in order to create competitive products for these markets. E-commerce in the Republic of Macedonia is in its infancy and is in the form of unfinished, incomplete process. Internet is used mostly for research and order products, which usually have to be paid in traditional manner. There are strides toward legal regulation of this matter, but they are only the beginning. Of course, along with the establishment of the legal framework in the country, punitive measures against law-breakers are put in place. Cyber-crime is one of most transnational forms of crime, so developed countries are facing this challenge just like developed countries.

Companies from developing countries (like Macedonian companies) have no other option but urge towards e-commerce. They need to realize the necessity of inclusion in modern ways of doing business, because there is no other alternative to survive in the market and to keep sustainability on medium and long run. Internet is particularly suitable for companies of small size and distance from major world events, (companies such as Macedonian).

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UDC: 334.722:316.774(497.7)

ANALYZING THE EFFECTIVENESS OF SOCIAL MEDIA IN THE  
PROMOTION OF ENTREPRENEURIAL BUSINESSES IN THE REPUBLIC OF  
MACEDONIA

Martin Kiselicki, Msc<sup>1</sup>

**ABSTRACT**

Starting an entrepreneurial business in a country in transition, characterized with a fluctuating and unstable market, such as the Republic of Macedonia, can be a daunting task. Promoting the products and services is one of the most important tasks when starting a business. The promotional strategies related with start-up businesses are often characterized with limited statistics and unsatisfactory results. The **hypothesis of this research paper** is that social media can be used as an effective tool for the promotion of an entrepreneurial business. To examine the hypothesis, a case study was conducted where a start-up business with low marketing funds, the course "Self-defense and Fitness for women", was promoted on a two months basis, separately through social media and traditional media. The results of this research were sufficient enough to confirm the hypothesis and present concrete numbers that social media can be used as an effective marketing promotion tool. Due to the limited public information, another goal of this research paper is to provide insights about different aspects of paid and organic social media promotions in the Republic of Macedonia by using two-stage cluster sampling and questionnaires.

**Keywords:** social, traditional, media, marketing, sustainability, Macedonia, entrepreneurs, trends

**JEL Classification:** M37

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## 1. Introduction

Social media is defined as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content (Kaplan and Haenlein, 2010). In recent years, we are witnessing the rise of social media platforms. In 2012, nearly 4 in 5 active Internet users visited social networks and blogs, while 70% of the active adult Internet users shop online (Nielsen, 2012). These numbers are a precursor that social media can be used as a promotional tool by companies. Social media can prove as a successful marketing tool in the promotion of a business, and many international companies, such as Coca-Cola and Oreo, are including them as a core aspect of their promotional programs.

In the Republic of Macedonia, many entrepreneurs are faced with the difficult choice between social media and traditional media promotion. In most cases they can't choose both due to low marketing funds, which is understandable for a start-up business. The **hypothesis of this research paper** is that social media can be used as an effective tool for the promotion of an entrepreneurial business. To examine this hypothesis, a case study analysis was conducted using social media to promote an entrepreneurial business, the training course "Self Defense and Fitness for women", for a time period of two months versus using traditional print media to promote the business in the same time period. The business plan is composed as a two days per week training course with a specific target group – women. For the purposes of the course, a training room was reserved for 4 separate days of the week and two separate, identical courses per week were planned. A decision was made to promote one course purely through social media and the other course was promoted purely through traditional print media. This kind of diversification provided the basis for conducting the necessary research to test the stated hypothesis.

By comparing the **engagement**, which is how many interactions (phone calls and messages) were achieved, and the **conversion**, which is how many clients were obtained for each of the two separate courses, this paper can provide insights of the

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impact and effectiveness of social media promotions for an entrepreneurial business on the territory of the Republic of Macedonia. Furthermore, assessing the three pillars of sustainability, the economic dimension is stated as “*a broad interpretation of ecological economics where environmental and ecological variables and issues are basic, but part of a multidimensional perspective*” (Soederbaum P., 2008). Therefore, social media marketing can also possess a certain sustainability dimension, because these activities can directly impact the above stated aspect of sustainability and help in the overall preservation of the environment.

**Another goal of this research paper**, since information on this topic for Macedonian companies is limited, is to provide insights into various aspects of social media usage as a promotional platform in the Republic of Macedonia. This is accomplished through the use of a two-stage cluster sampling of Macedonian companies via questionnaires, which is explain in more details in the next section.

## **2. Methods and materials**

All the data presented in this research paper is collected from December 2012 through February 2013. The primary method of analysis was conducting a case study of planning and executing a marketing strategy for the entrepreneurial business “Self-defense and Fitness for women”, but other methods were also used, such as a two-stage cluster sampling via questionnaires; phone-calls and the tool Facebook Insights. The social platform **Facebook** was used as the single platform for social media promotion for the analyzed company on the Internet. Print media, including posters and banners, were chosen for promotion from the traditional media platforms. The **budget** was divided equally to ensure that the same conditions apply for both traditional and social media marketing tools. The overall budget of the campaign was 200 euros, which was divided equally between the platforms - 100 euros for social media marketing and 100 euros for traditional print media marketing. The budget was set and decided by the owners of the course and was the maximum they could afford for the promotional activities - the rest was used for leasing the training room and equipment. For the social media campaign, a **fan-page** was created on Facebook titled

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“Self-defense and Fitness for Women”, while for the traditional print media campaign, a total of **2000 banners and 1000 posters** were printed throughout a time-period of 2 months, which were afterwards strategically positioned on sites through Skopje, the capital city of Macedonia.

The results of the social media campaign throughout the case study were collected using the tool **Facebook Insights**. Facebook Insights is an analytics tool provided by the social media platform Facebook, which offers various statistics about the engagement, demographics and interactivity of the fan-page. Because Facebook represents a serious and professional social platform, there is no indication that the statistics from Facebook Insights are false or invalid. For both traditional and social media, further information relevant to the results was collected via **phone-calls and messages** from potential clients. Each client that called was questioned whether they obtained the number through social media or through print media.

The end success of the campaign was measured by the **engagement**, which is the number of people that called or messaged regarding the course, and the **conversion**, which is the number of people that signed up for the course in the duration of the marketing campaign. Different qualitative aspects, such as targeting options and flexibility of the campaign, are analyzed in the Discussion part of this research paper.

For the **analysis and construction of trends for social media usage by companies in the Republic of Macedonia**, questionnaires were used to gather information from employees in 60 companies. The companies were chosen using a two-stage cluster sampling technique (Aaker et al., 2001). In the first stage, the companies were divided in three clusters according to their size: micro and small companies, medium companies and large companies<sup>2</sup>. In the second stage, using simple random sampling, 20 companies were selected from each of the three clusters. The only selection criteria used was that the business had to have an existing social media account and had to be actively engaged in social media promotions. For the

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<sup>2</sup> The New SME definition, European Commission, 2005



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protection of their privacy, further details about the companies and their employees are not revealed in this paper. The specific content and questions used in the questionnaires can be found in the appendix of this research paper.

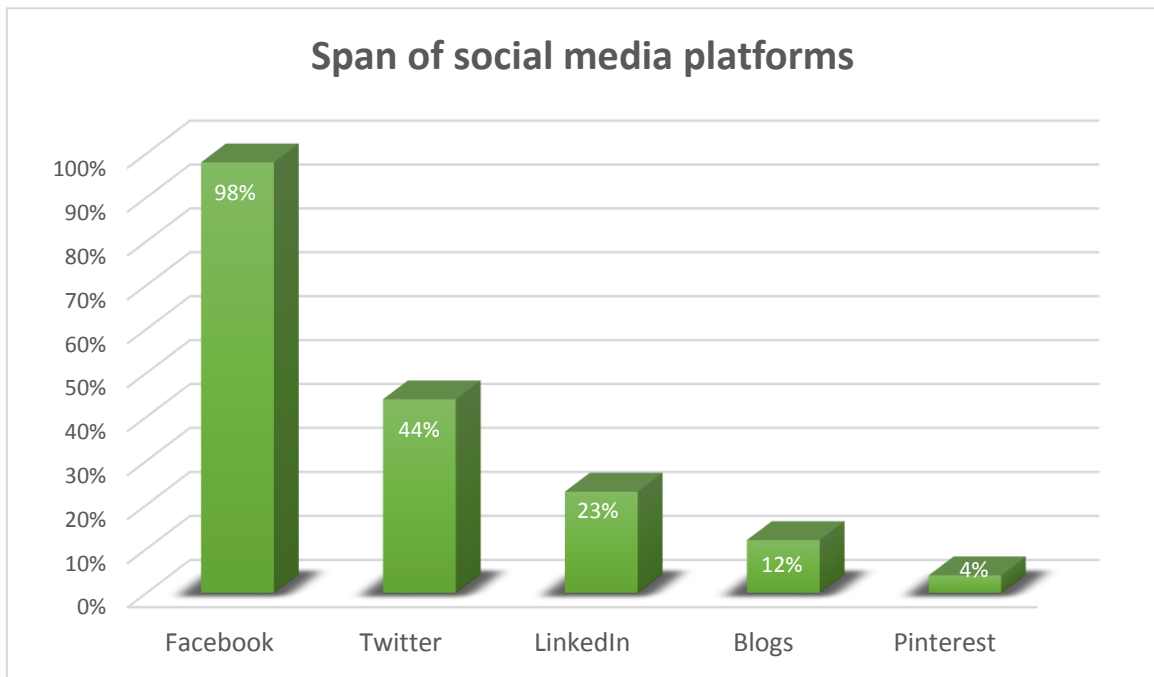
### **3. Results**

#### **3.1 Social media trends in the analyzed companies via two-stage cluster sampling and questionnaires**

Based on the information gathered from the two-stage cluster sampling via questionnaires, different aspects of the usage of social media marketing is examined in the **60 analyzed companies**. The data is combined from the questionnaires that were sent to respondents from the 60 analyzed companies.

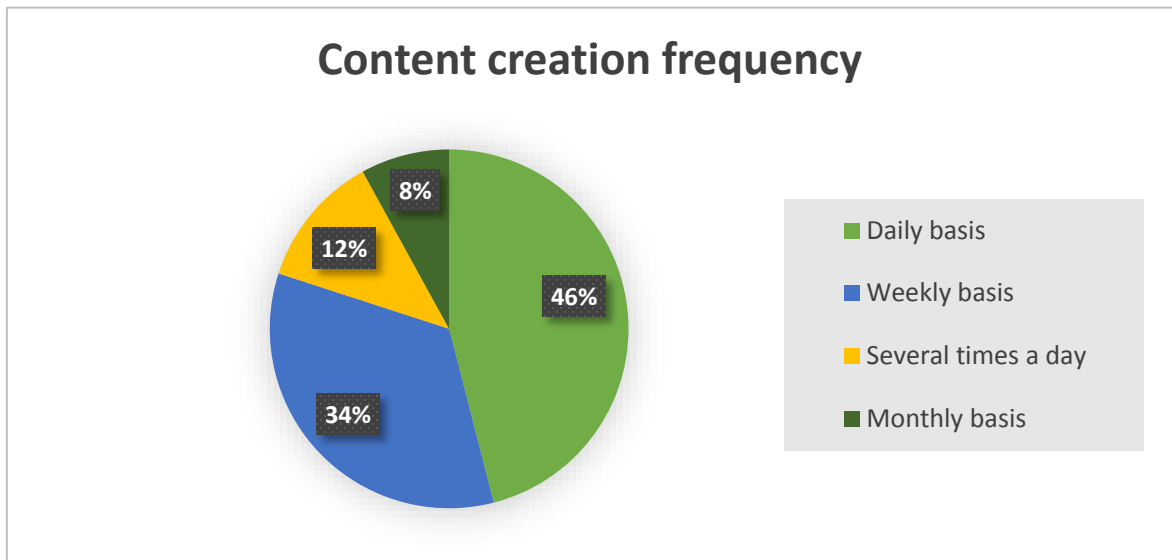
Only 25% of the analyzed companies have a separate budget specifically intended for promotion on social media platforms. This goes in conjunction with the 33% of companies that have a designated employee who is responsible for maintaining and executing social media marketing campaigns. From the analyzed companies, 60% use only one social platform to promote their business, 31% use 2 social platforms and 9% use 3 social platforms for promotion. None of the analyzed companies are using more than 3 social platforms for promotion.

One of the most significant statistic is the span of social media platforms that are actively used by the analyzed companies, which is summarized in Figure 1. The most popular social platform among businesses is Facebook with 98%, followed by Twitter with 44% and LinkedIn with 23%. The two least used social platforms among the analyzed companies are the blogs and Pinterest, respectively with 12% and 4%. Note that the answers on the questionnaire are not mutually exclusive, meaning that the respondents could choose more than one platform, which reflects the logic that companies use more than one social platform to promote their business and products.



**Figure 1:** Span of the usage of social media platforms in the analyzed companies

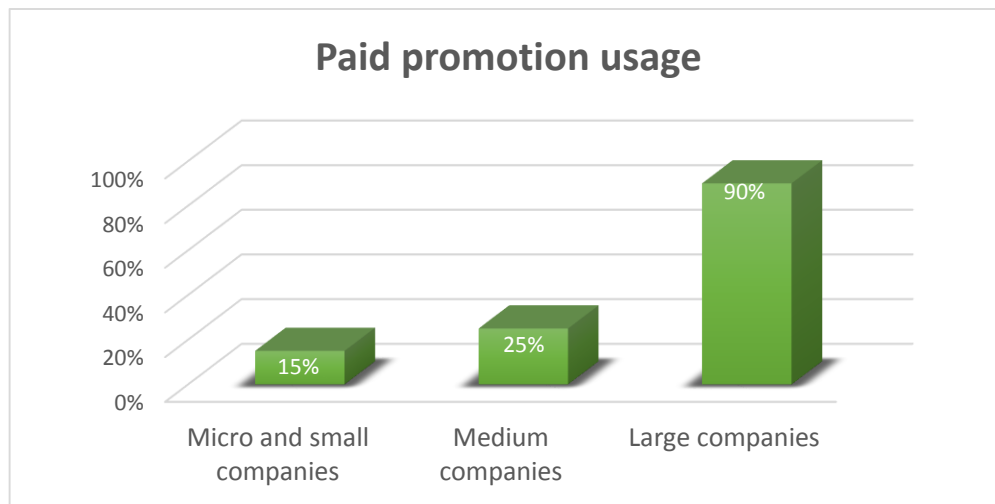
The frequency of content creation for the social media platforms is presented in Figure 2 on the next page. From the analyzed companies, 46% create content for their social media platforms on a daily basis and 34% create content on a weekly basis. Only 12% create content several times a day, while 8% create content once every month or even longer.



**Figure 2:** Frequency of content creation for social media platforms in the analyzed companies

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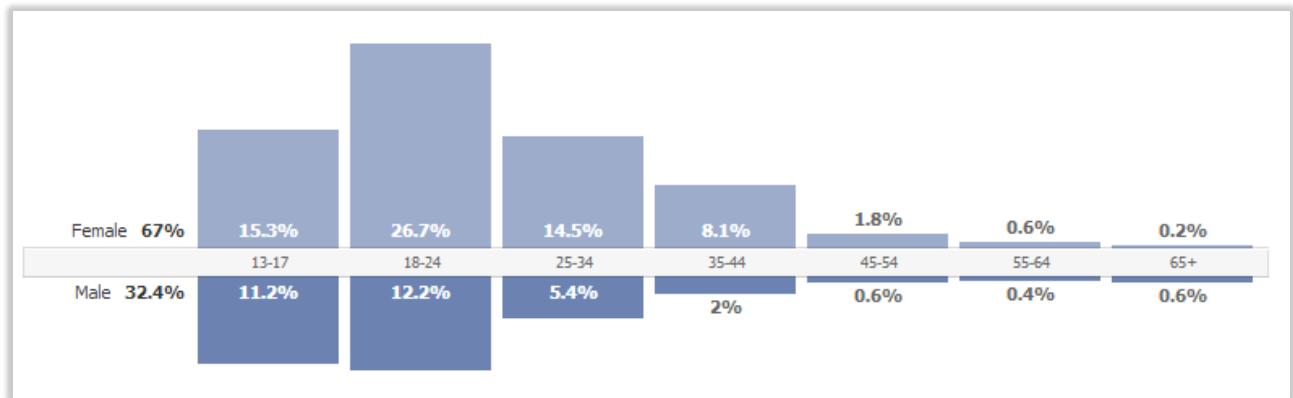
The specific percentages of companies which use paid promotion on social media platforms are presented in Figure 3. The data is divided in three groups according to company size: micro and small, medium and large companies. 15% of the small and micro companies have used paid promotion at least once in their past social media campaigns, while 25% of the medium companies have used paid social media promotion. This is contrasted by the high 90% of the large companies who have paid for promotion on social media platforms.



**Figure 3:** Paid promotion usage by company size in the Republic of Macedonia

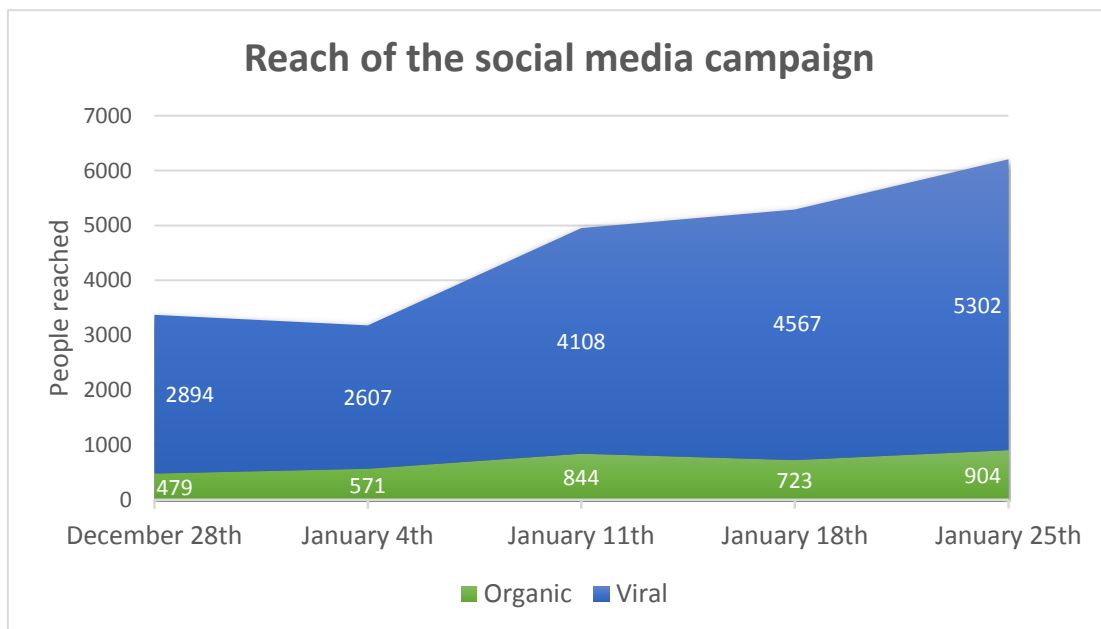
### **3.2 Results from the social and print media campaigns of the case study analysis**

For a time period of one month, using **paid and organic means of promotion**, the fan-page "Self-defense and Fitness for Women" accumulated a total of **2,510 fans**. In the height of the promotion, more specifically the time period between 25<sup>th</sup> of December 2012 through the end of the campaign on January 12<sup>th</sup> 2013, the average number of newly acquired fans was **103 fans** on a daily basis. Analyzing the demographics on the fan-page in Figure 4, over 67% of the fans belong to the target group of the business, which is female.



**Figure 4:** Demographic characteristics of the Facebook fan base

The weekly number of people reached through Facebook fan-page promotions is presented in Figure 5. The average number of people reached in January 2013 is **4,600 people** on a weekly basis.



**Figure 5:** Number of people reached through Facebook on a weekly basis

The statistics about the end results are presented in Figure 6. Analyzing the **engagement**, a total of **112 messages** were received via the Facebook fan-page and **52 people who called** verified that they found the course through the fan-page. Analyzing the conversion, the end-result is **24 new clients that signed up for the course through social media promotions**. Such detailed statistics were not available for the print media campaign. The only measurable statistics regarding the

engagement for the print media campaign are the number of calls received. For the conversion of the print media campaign, the number of acquired new clients is measured. Throughout the print media campaign, a total of **19 calls** were received. The end-result is **2 new clients** that signed up for the course through print media promotions.

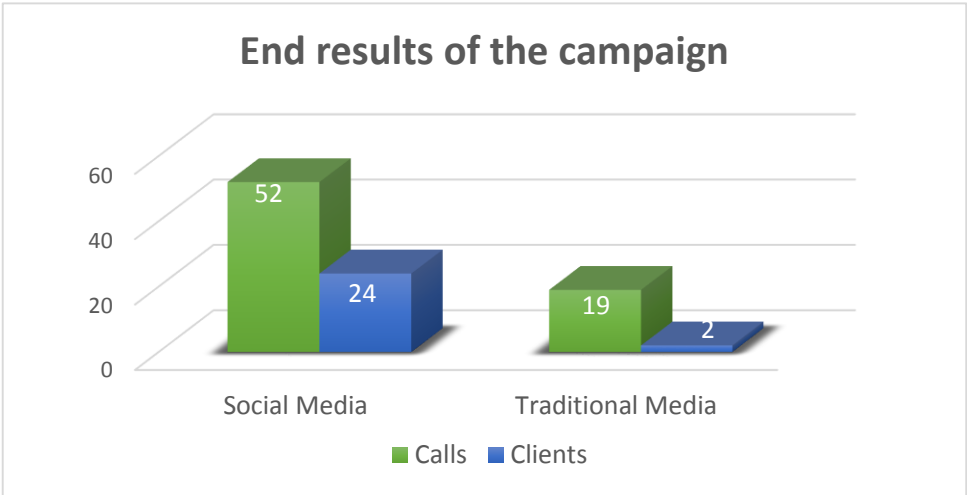


Figure 6: End-results of the social and traditional media campaigns

## 4. Discussion

### 4.1 Analysis of the insights for social media usage in Macedonia gathered via two-stage cluster sampling and questionnaires

Examining the insights developed for social media usage by the analyzed companies in the Republic of Macedonia, it can be noticed that only one third of the companies have a separate budget and a designated employee specifically set for social media promotion, 25% and 33% respectfully. One explanation is this is due to the nature of social media, meaning that these marketing tools are seen by these companies as a stop-gap between more serious print and other media promotions. The business aspect of social media is further researched in Figure 3.3, where the usage of paid promotion on social platforms is examined. Nearly all analyzed large companies (90%) use paid promotion, while less than one third (15% and 25%) of the micro, small and medium companies use paid promotion, so the size of the company directly correlates in a linear fashion with the usage of paid promotion on social media platforms. This high contrast

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in percentages confirms that as the size of the analyzed companies increases, so does the usage of paid social media promotion. The authors' judgment is that this is due to the budgeting policies of large companies – the marketing department sets a specific budget for social media and usually the company does not want to rely solely on viral and organic means of promotion.

The popularity of the various social networks is analyzed in Figure 3.1. The social platform Facebook dominates with 98%, meaning that from the analyzed 60 companies, only one doesn't use Facebook for social media promotion. The second most popular social platform is Twitter with 44%, and the third most popular is LinkedIn with 23%. These results indicate that newer social platforms, such as Pinterest, are rarely used by the analyzed companies and the main focus is on the three most popular social platforms – Facebook, Twitter and LinkedIn. From the analyzed companies, nearly all of them create new content on a daily or weekly basis (92%). This parameter was not analyzed in greater detail due to the correlation of the nature of business and type of social media promotion, which affects the creation of new content.

#### **4.2 Measuring the success of the print and social media campaigns from the case-study analysis**

The **hypothesis of this research paper** is that social media can be used as an effective tool for the promotion of an entrepreneurial business. In the period designated for the case study, a total of 2,710 fans were acquired for the Facebook fan-page "Self-defense and Fitness for Women". This can be considered as an extremely high number, considering the needed clients and the related conversion rate for the analyzed company. The maximum capacity of the course is 24 attendants, which is less than 1% of the total fan base on Facebook. This is a solid conversion ratio, but these statistics aren't sufficient enough to reflect the success of the social media campaign.

The qualitative aspects, such as **engagement** and **targeting options**, are of even greater value than the quantitative aspects. With Facebook, a company could interact with fans and potential clients on a continuous level, post promotions and special offers

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instantaneously and make the necessary adjustments in real-time. Also, through social media, potential clients have a direct call to action, meaning that they could send a message to the fan-page or write a comment to find out more information. This aspect is lacking through the print media campaign, where the only interaction with the potential clients is through a phone call. The viral aspect is another advantage of social platforms. Throughout the duration of the campaign, in January 2013, an average of **4,600 people** were reached on a weekly basis, meaning they saw or read content from the fan-page. The average number of people reached through **organic (non-paid) promotion** in the same time period was 704 people, while the average number of people reached through **paid promotion** was 3,841 people. Furthermore, the sustainability aspect is also of certain value. No print materials were used for social media promotions, compared to the 1,000 posters and 2,000 banners specifically created for the traditional campaign. Projecting these numbers, approximately 6,000 posters and 2,000 banners would be used on a yearly basis, meaning social media promotions potentially could have a great impact on the economic pillar of sustainability.

**For the print media**, the same type of statistics as presented above couldn't be acquired due to multiple reasons. The engagement of the print media campaign is measured by the number of calls received, while the conversion is measured by the number of new clients acquired. A total of **19 calls** were received through print media for the duration of the campaign and only **2 new clients** were acquired. The engagement and conversion rates are qualified as unsatisfactory and the print media campaign is graded as unsuccessful in terms of capital invested versus results achieved.

During the same time period, the **social media campaign** achieved significant results. Measuring the engagement, a total of **52 calls** were received, accompanied by another **112 messages** that were received through Facebook. Combining the calls and messages and comparing them with the equivalent results from the print media, the engagement achieved through social media is **863% higher** than the engagement achieved through traditional print media.

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Measuring the conversion, **24 new clients** were acquired through the social media promotions, which is **higher by 1200%** than the conversion of the print media campaign. It has to be noted that the 24 new clients were acquired by January 14<sup>th</sup>, so the sign-up was closed after that particular date. This means that the number of clients acquired through social media may have been even higher, if the maximum capacity of clients wasn't prematurely reached. The engagement and conversion rates of the social media campaign are qualified as satisfactory and the social media campaign is graded as successful.

## **5. Conclusion**

The **hypothesis of this research paper** is that social media can be used as an effective tool for the promotion of an entrepreneurial business. Comparing the engagement and conversion from the social media campaign and print media campaign in the case-study analysis, there is a definitive indicator that using social media prove as the more efficient, flexible, cost-effective and sustainable way for promoting a start-up business than traditional media. There are **24 new clients** acquired solely through social media promotions, compared to the **2 new clients** acquired through print media promotions. This represents a 1200% difference between the two approaches and social media promotions clearly emerge as the more effective tool for usage by entrepreneurial business such as the one analyzed. There are also different quantitative and qualitative benefits that can be achieved only through social media promotion, which are discussed in greater detail in the previous part of this paper.

**Therefore, the hypothesis posed in this research paper is tested and confirmed via the case study analysis.** Another goal was to provide insights for different aspect of the usage of social media promotions by companies in the Republic of Macedonia. By examining 60 different companies using a two-stage cluster analysis and questionnaires, insights and various statistics were obtained, therefore this goal is also successfully accomplished.



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This research can be expanded by examining social media effectiveness as a marketing tool for medium and large companies via case-study analysis such as the one detailed in this research paper. The research provides concrete results which point out the benefits of paid and viral social media promotions, but regardless, social media promotion should not be taken as a definitive and absolute choice for the promotion of a start-up business. A limitation of this research is that only one company is monitored via a case-study analysis, so the hypothesis in this research paper cannot be generalized for every other entrepreneurial company. Every business, surrounding circumstances and factors are unique, so an analysis should be performed to choose the appropriate promotional tools.

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## **7. Appendix**

### **A. Sample from the questionnaire that is used for the purpose of this research paper**

Questionnaire about using Social Media as a marketing and a promotional platform

#### **Instructions**

You can select more than one answer for specific questions. If you don't know the answer for a particular question, leave it blank and move on to the next one.

1. What social media platforms are you using for the promotion of your business?
  - A. Facebook
  - B. LinkedIn
  - C. Twitter
  - D. Blogs
  - E. Pinterest
  
2. Has your business used paid promotion on any of the social media platforms?
  - A. Yes
  - B. No
  
3. How often do you create new content for your social media platforms?
  - A. Several times a day
  - B. Daily
  - C. Weekly
  - D. Monthly
  
4. Do you have a separate budget set for social media promotion?
  - A. Yes
  - B. No

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5. Do you have a designated employee managing your social media platforms?

A. Yes

B. No

6. How many different social media platforms do you use for promotion?

A. One

B. Two

C. Three

D. Four and above

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UDC: 339.13:352]:332.146.2(497.7)

THE STRATEGIC ASPECT OF PLANNING THE PERSONNEL LOCAL POLICY  
IN THE DIRECTION OF SUSTAINABLE DEVELOPMENT OF THE LOCAL  
MARKET

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**ABSTRACT**

The strategic approach of the development policy of the local self-management, perceived from the aspect of the needs of the local market, expressed through the real need of efficient jobs and the quality of the kind and level of the available professional competencies, is an important factor in the increase of the social value, reflected in the planned activation of the quality needed of the human capital and creating better individual possibilities for developing of all the members of the environment. The cooperation of the local community and the business sector from the aspect of compatibility on the market and its utilization initiates a thought that every educational institution becomes a more and more causal factor for the local and individual development.

The offered kinds and structures of knowledge and its utilization, in the secondary and high education, enables developing stands and responsibilities reflected in the learning results, consequently profiled personnel with different levels of professional competencies, it's needed for them to be planned and conditioned by the relationship between the claimant and bidder, so it's needed and required for them to be compatible with the company's needs, as with the needs of the community and region.

That's why, the timely strategic approach towards planning of the needs of the community with exactly defined personnel profiles and a time frame of the need based on analytic analyses, would satisfy the needs of the business sector as a result of their

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long term planning, which would enable satisfaction of the local market, on one side, and the current solving of the companies and individual needs of employment, expressed through part waiting time on the market, and employment according to expert competence, on other side.

**Key words:** strategic development policy, sustainable development, business sector, local self-management, market

**JEL Classification:** M12, M54, O12, O15

**The local employment policy - a reason and a consequence for the existence of a strategic program for planning of the kind and dynamics of the needs of the local market**

The research question in this paper is directed towards determination of the degree of intern strategy of leading the local policy for ensuring of quality strategic processes for the market's needs, it's efficiency in the promotion and enriching the quality in the education and how effective the steps taken by now are, by the competent institutions, or the development programs for local development made based on real data for the needs of the business sector.

The goal of the research was to research the existence and need of a possible implementation of an effective strategic program which would improve the quality of the offer on the market through strategic lead of all the subjects towards a process that would decrease the waiting time and would ensure the structure needed of the qualifications and competencies.

According the Law of the Local self-management (Official Journal of R.M n.5/2002), the municipalities have "the right and obligation to self-plan the economic development and to take activities to improve the economic future of the citizens..."

The above, only highlights the need from a strategic approach which would offer a defined strategic frame of needs from competencies and dynamics, through syncing the citizens' needs and the offer of the educational institutions (SU and VOI) on one hand and the local self-management and the business sector on the other hand. Exactly

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that determined the subject of research of this paper as- The need of the existence of a strategic program for developing planned activities for the needs of the business community, and initiated from the need of information and real effective satisfaction of the citizens' and market's needs.

The practical goal of the research is to see the real condition of the process of managing the local policy of the employment in the municipalities, which realizes in conditions of non-existing functional strategic approach expressed through real knowledge of the needs of the dynamics, number and kind of professions needed to satisfy the business community and the existing structure of the market, which would effect through:

-information about the long term need of the market through the number and kind of the needed professional competencies, based on analyses of the real needs of the business sector, which would contribute for:

-directing in the future education of the youth,

-retraining of the professional competencies of those who wait on the market,

-retraining of the professional competencies of those already employed according to companies' needs,

-decreasing of the waiting time for employment,

-retention of the place to live, versus outflow of personnel because of employment

This research enabled:

-understanding stands, opinions and the relationship of the representatives of the local self-management (members of the community Council, employees in the sectors of economic development ) towards the existing practices of managing with local policy of employment in the municipalities:

-understanding stands, opinions and the relationship of the business community for the existing practice of leading this policy:

-understanding stands, opinions and the relationship of the graduates, students, college graduates and citizens for the existing practice of leading this policy.

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-understanding opinions and suggestions for the need of improving the managing process with the local policy of employment in the municipalities from all the listed stakeholders

The attitude towards changes, this research manifests through activities and action in direction of:

-institutional changes-which apply in the understanding of the need of changes in the existing system of leading the local employment policy, which would affect the kind of the professional staff on the market and the waiting time for employment on institutional, regional and society level. The focus is towards the ones for whom it exists-its direct creators and users of professional competencies, which would contribute for increased quality in the work, and improving the results evident in all the users in direction of continued sustainable local development.

-individual changes apply to changes of every institution individually, which would be recognized in a deeper approach towards the long term personnel planning of the staff and the representatives of all bodies in leading the personnel policy on society, regional and local level. That improvement would manifest through mutual and effective cooperation, between the local self-management and every company individually, effecting the regional cooperation in direction of exchanging information and personnel.

That cooperation, would reflect the impact on the group of stakeholders, represented through high school students and college students, families, because they're all affected as direct users of the educational service and the need of employment, through increased degree of involvement in the institutional functionality of the local self-management.

### **Population and sample of the research**

The research is realized in seven municipalities in the Republic of Macedonia.

The sample consists of:

-a sample of representatives from the Local self-management (126)

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- a sample of representatives from the business community (102)
  - a sample of representatives of citizens (250)
  - a sample of representatives of graduates, active students and college graduates (570)

After the analyses of all of the questionnaires for every sample individually and mutually, individually expressed understandings were classified in:

Mutual understandings of all the respondents:

- they don't have understandings on the real number of current, short-term and long term needs from professional expert specifications of future employees of the business community;
- they don't have understandings of the kind of current, short and long term needs of professional expert specifications of future employees of the business sector;
- they don't have understandings of the number of enrolled students in VOI, nor the kind of chosen faculties and studies direction;
- there's a need for increase of their efficiency as an important factor of improving of the existing system of impact on the market.

Individual understandings of the representatives of the local self-management:

- there's a need for a real coordination while planning the policy of employment on the local self-management and the enrollment policy on a municipality level;
- there's no involvement in the process of the enrollment policy of the educational institutions;
- there's a need from continued follow of the local and regional needs of the market;
- there's a need of increasing the adjustment of the kind of professional education competencies according to the needs of the environment;
- there's a need of participation, as development of the knowledge and skills for a given issue of representatives of the local and business community in creating of the education policy on state and local level;



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Understandings of the representatives of the business community:

-a planned process for data collection and analyses of the needs of the business community is non-existing;

-a public presentation of the needs of the business community is non-existing;

Understandings of the graduates, students and college graduates, and citizens:

-there's a need for a real and timely information about the structure needs on the market;

-there's a need for cooperation with the business community for the need of the existing of a development plan for practicing and volunteering;

-there's a need for cooperation with the business community for future scholarships and employments;

-there's a need for building strategic partnership between the stakeholders.

The analyses of the given understandings points to three moments:

-the need of overcoming the existing condition;

-the need of redefining certain aspects;

-identifying of future improvement steps

Overcoming the existing condition:

-realizing an effective institutional self-evaluation which would enable defining a mission, establishing a strategy and an existence of a demonstrated devotion of the staff and members of the local self-management and business community in the process of managing in a way of effectively serving the needs of employment of the micro environment, with following the needs of the neighboring municipalities;

-finding solutions which would overcome the insufficient expert, information and involvement of the members of the local self-management in the enrollment policy on local community level;

-implementation of a continued intern evaluation of the program for local development for employment with a defined criteria for evaluation, which would enable an open

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intern and extern institutional communication supported by real documented and analyzed, systematic chosen data, delivered to all interested subjects in the macro and micro environment;

-improvement of the quality of the existing system of local management based on quality standards which define the key processes and resources needs, compatible to the ones in real practice;

The need of redefining certain aspects:

-there's a need for increasing the competencies of the members of the business community in the local self-management, which would strengthen their involvement in the part of impact of opening or closing vocations in the high schools, and would be compatible with the needs of the business community as graduates or directed would continue their education;

-there's a need for more cooperation with the business community and its involvement in the process-motivating by scholarships, volunteering and acquiring work practice, regulated with a compatible legal regulation;

Identification of future improvement steps

The research has discovered a number of moments for improving the process, but because of the massiveness of the paper, we will give the following:

-sustainability of the quality of the competencies, all the given factors which create an education policy on all levels, connect it with support from the advisory professional, or body institutionally set on local level in which representatives of the local self-management and business sector would participate, on local level would enable logistics needed in direction of:

-preparing a strategic program for professional development on the local market:

-deciding criteria for dynamics of collecting data and documenting the intern needs of the companies of the business community;

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-regular collecting and presenting the achievements of the education institutions as part of the efficiency of their enrollment policy towards all the interested subjects;  
-Regular information of the stakeholders for the real condition and changes on the market.

- Involvement in the bodies of management of the education institutions and the Chambers sector as a two-way follower of the timely needed information and analyses from and to all stakeholders;
- Participation in the defining the enrollment policy in direction of closing, rotating, standing of the existing or opening new education vocations and directions;
- Following information to the lined ministries which would contribute in the efficiency in creating government economic and education policies.

## **CONCLUSION**

The analysis of the data obtained in this study indicate the absence of a strategy for development of the local labour market, stressing the lack of expertise and lack of cooperation between the underlying actors responsible for the economical sustainable development of the municipalities in Republic of Macedonia:

Local government - which through its institutions is the creator of local employment policy;

The business community - an entity whose development depends directly on the local labour market and its supply;

Strategic planning and inter-institutional communication, which would be based on the fair presentation of the situation through timely collected, analysed and presented information to and from all these stakeholders would enable effective supply of skilled personnel in the labour market and effective local employment policy and would result with defined personnel policy aimed at:

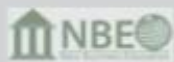
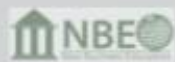
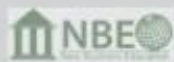
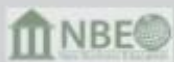
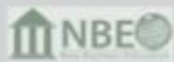
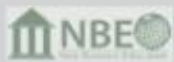
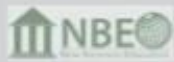
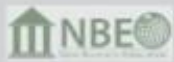
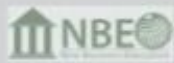
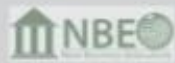
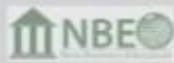
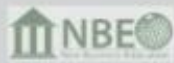
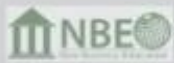
- Planned acquire professional competencies needed for the business community in youth

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- Shorten the waiting time employment in the labour market
  - Planned acquisition of vocational retraining needs of the business community in terms of staff retention in the workplace or career development
  - Keeping people in their place of residence or employment in cooperation with other municipalities in the region, based on the coordination of the needs of the regional labour market.

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