Determinants of electronic commerce - the factors of acceptance in Montenegro

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Abstract - The paper presents the results of the level of adoption of e-commerce in Montenegro and provides an overview of the factors which slow the use of its full potential. The aim of the research is to create a picture of the perception of e-commerce in terms of consumer and to identify the determinants that can be affected in order to create a better environment for electronic transactions in Montenegro.

Quantitative research (conducted through survey) and qualitative research (conducted through assessment of websites of companies that are on the supply side), are associated with the subjective judgment of the authors, in order to better examine the key issues that affect the decision on the online store.

Research has shown that the potentials of electronic commerce in Montenegro are great, but that there is still not a critical mass of users.

On the other hand, in companies that are on the supply side, there are ambitions, but there is not enough knowledge to further examine the potential of electronic commerce and properly direct the offer to the different categories of clients.

Key words: e-commerce, determinants, perception, consumers, factors

I INTRODUCTION

Two last decades have been marked by a significant penetration and dispersion of electronic commerce. If we exclude 2008, when the beginning of the economic crisis, which was met without preparation, reflected on the negative growth rate of electronic commerce, throughout all other years the growth rate of its application on the global level has been evident. Whereas at the beginning of this century the leading positions considering its acceptance belonged to highly developed countries of the world, especially to USA, nowadays the high growth rates are recorded in the developing countries as well [1].

The reasons for such state could be found in a large number of factors:

- Accelerated technological penetrations;
- Growth of trade volume within both national and international frameworks;
- Readiness of network configuration to support commercial transactions on all levels of different strength and complexity, which is followed by change in supply and demand in electronic environment;
- General economic terms favoring electronic commerce;
- Favorable world monetary and fiscal ambience for transferring business processes into electronic platforms;
- Change of legal regulation and its adjustment to technological changes;
- Activities of governmental bodies and certain international organizations and institutions to provide support to affirmation of electronic business and within it to electronic commerce as well;
- Development of strategies aimed at making effects of globalizations move into positive direction;
- Increased number of online payment methods designed to support business on open networks, primarily on the Internet.

From experience and all conducted researches so far, it is clear that delay in accepting electronic commerce may lead to isolation of national economies. On the other side, electronic commerce offers numerous advantages such as improvement of productivity, decrease in prices, cost savings, change of size and structure of the market, elimination of mediators and direct access to end-users [2].

For success in the electronic world, the first and most important step is planning to identify barriers to adoption of e-commerce [3].

The growth of electronic commerce has led to increased number of academic works that deal with this very issue and put focus on two interest groups – customers and companies. It has been noticed that other actors, such as suppliers, investors, regulation bodies etc, are disproportionately less treated in this field of research. On this degree of EC development their influence is not that considerable, but there is evidence that they will deserve more attention in the recent future [4].

Although it is believed that the electronic commerce is a global phenomenon, in the most of the studies the focus is on developed market economies [5]. We agree that the experience of developed countries is valuable, but we
think that developing countries should not be disregarded and that the complete picture can be gained only by parallel treatment of this issue on all levels of development. EC are seen in different lights in developed versus developing economies. The pattern of influence and use of EC differs according to a country’s level of socio-economic development [6]. Montenegro, as a typical developing country, has an incentive environment and great economic potential for more massive usage of electronic commerce technologies, but the low degree of usage of those technologies and a great lack of awareness of potential benefits they offer.

The aim of this work is to identify factors that influence the low degree of acceptance of the electronic commerce in Montenegro from both perspectives – of consumers and companies. This research has a triple purpose: 1) To create the picture of customers’ perceptions about electronic commerce and recognize their expectations; 2) To identify factors determining degree of electronic commerce technology usage by companies; 3) To create data base pursuant to which the electronic transaction volume can be increased and strong base of satisfied internet users can be created.

II METHODOLOGY OF RESEARCH

We collected the data for this study during the one comprehensive research which had the goal to gain insight into the state of electronic business in Montenegro. For the purpose of this paper we used a part of that survey and analyze relevant data from submitted questionnaires.

In the survey we used two types of questionnaire, while one was forwarded to consumers (citizens of Montenegro), the other collected answers from companies, or precisely from employees and managers. Perception and experience of different profiles of consumers about electronic commerce was important issue of this research. According to that, one of questionnaire made in way to collect as much as possible information about demographic characteristics of consumers (sex, age, employment, education, income level and geographic affiliation), their experience in using of the Internet, and electronic transactions, as well as their opinion about security in transactions and offers on the sites.

The second questionnaire consisted of two parts. The first section was intended for employees, and the second for managers of the company. The aim of this questionnaire was to gather information about organizational and technical factors which determine the degree of acceptance of electronic commerce technology from the perspective of supply.

During consumer survey, we used the method of random sampling, which proportionately included population of central, southern and northern regions. About 70% of the questionnaire is collected from the central region which can be considered as a representative sample. From 500 submitted questionnaires, we analyzed 350 properly completed.

From 100 questionnaires forwarded to the addresses of companies (randomly selected from the Central Registry of Companies), we received 87 completely filled. A total of 84 surveys were received from small and medium enterprises (SMEs). This fact justifies the efforts of the professional public to explore the acceptance of e-commerce technology particularly in the SME category. The survey was anonymous in both cases and persons who participated in the survey were familiar with the purpose of research.

After collecting the data and their analyzing by a pre-defined plan, we approached to interpretation of research results.

For the purposes of this study, we used basic theoretical methods, appropriate to the social sciences: definition, classification, induction, deduction, analysis and synthesis.

III INTERPRETATION OF RESEARCH RESULTS

Although the Strategy for Information Society Development in Montenegro [9] that is currently in force sets the goals of digital environment development for operation of innovative companies, increase of the number of customers who are familiar with and use electronic commerce technology and growth of modern public sector participation that supports all of that, Montenegro is still at the bottom of the list of the European countries in the field of electronic commerce technology usage.

From aggregated data gained from the Montenegrin banks at the end of 2014, it could be seen that around 11 million euro was spent for online transactions in that year, which was about three millions more than in 2013, but the growth rate was still far from the one existing in neighboring countries.

From four examined categories of transactions (services of electronic banking, services of electronic tourism, electronic commerce and online auctions), online commerce occupies the penultimate position (Table 1).

The research has shown that 98% of citizens do the online purchase using foreign sites. As reasons for such decisions they state: poor offer on the sites of the Montenegrin companies, relatively high prices, bad functioning of sites and lack of confidence into companies that have no tradition of electronic commerce. Without doubt this leads to conclusion that the efforts made so far for implementation of electronic commerce in the Montenegrin companies are not sufficient and they give no significant results.
From the total number of those who do the online purchase, 81% of citizens belong to the group of highly educated, 14% are students and 5% accounts for other educational structures. When it comes to online purchase, salaries exceeding 700€ are the breaking point. It has been shown that the amount of income is in direct correlation with participation in electronic transactions and by that, for now, the amount of income is in direct correlation with the level of education. Pursuant to the economic situation in Montenegro, 91% of those doing online purchase are employed, where difference in sector employment (public and private sector) has no statistical importance. If we analyze the number of online purchases done, it can be concluded that it is unevenly distributed from the aspect of age structure since 65% of online customers are people of middle age (35-50 years old). This is the category of customers who have more steady income. Besides 65% of online customers from that category, only 14% is from the category 18-25 years of age, 19% is from 25 to 35 years of age and less than 2% accounts for customers older than 50 years.

Differences between the sexes in Montenegro have no importance in examining the influence of sex on decision to carry out electronic transaction (from 58 YES answers, 27 gave women and 31 men).

Significant digital gap on relation north-central part-south of Montenegro is visible in gained data as well. From the total number of internet users doing online shopping 63% come from central region, 31% account for coastal region and only 6% for north region (which is recognized as the region with the smallest number of employees, lowest income and smallest number of educated inhabitants).

For ranging the importance of factors influencing satisfaction, trust and loyalty we used 9 criteria:

1. prices of service;
2. the quality of offered service;
3. the quality of information on services;
4. the quality of post selling service;
5. evaluation of previous experience;
6. brand effect;
7. design of user’s interface;
8. perception of security;
9. perception of privacy of data.

In survey we used Likert-type scale as a criterion. The analysis has shown that when making decision on online purchase customers pay attention to (in the following sequence): trust, price, brand effect, the quality of offered service, the quality of information on service and the quality of post selling service. The trust is mostly influenced by belief about security and data privacy as well as the evaluation of previous experience. As it has been shown in previously published researches, in situation of greater space and time separation of the act of purchasing and the act of receiving goods the perceived risks grow higher. For that reason trust has the key role in developing this way of commerce and it is even more important than the price of the product to be bought [10]. Dehkordi and the associates have reached a similar conclusion [11]. In the research conducted in developed market economies they have shown that perceptions of customers regarding price and trust remain the same regardless of the level of development of the economy from which consumers come. Also, the information that 93% of customers from Montenegro give the highest grade (on scale from 1 to 5) to the importance of the Internet, they have familiar with the importance of the Internet, they have shown that perceptions of customers regarding price and trust remain the same regardless of the level of development of the economy from which consumers come. Also, the information that 93% of customers from Montenegro give the highest grade (on scale from 1 to 5) to the importance of the Internet, they have familiar with the importance of the Internet, they have shown that perceptions of customers regarding price and trust remain the same regardless of the level of development of the economy from which consumers come. Also, the information that 93% of customers from Montenegro give the highest grade (on scale from 1 to 5) to the importance of the Internet, they have familiar with the importance of the Internet, they have shown that perceptions of customers regarding price and trust remain the same regardless of the level of development of the economy from which consumers come. Also, the information that 93% of customers from Montenegro give the highest grade (on scale from 1 to 5) to the importance of the Internet, they have familiar with the importance of the Internet, they have shown that perceptions of customers regarding price and trust remain the same regardless of the level of development of the economy from which consumers come.

Data gained for design of user’s interface have shown the modest influence of this factor on the level of carried online purchases.

From the survey it can be seen that the examinees have been familiar with the importance of the Internet, they have modest knowledge about benefits of electronic commerce, insufficient knowledge about instruments of electronic payment and deeply rooted fear of negative consequences that can come out from such way of paying.

Generally, all reasons for inertness of citizens of Montenegro regarding participation in online commerce we can group into several units:

- There is a lack of trust into online transactions by consumers. In that regard, both companies and the Government must have understanding for consumers’ perception regarding this issue. The problem must be approached at least from three aspects: a) electronic commerce should be promoted through development of training programs which can raise customer’s awareness of problems regarding security and safety and which can inform consumers about the means that can be used for avoiding those problems; b) tools which customers can use to assess the reliability of service which is used during online commerce should be presented; c) national legal framework protecting rights to privacy and anonymity of online customers and punishing those who violate those rights should be secured.

- There are issues that arise from social differences. In Montenegro there is a huge difference in economic level of development on relation north – south part of Montenegro.
Government's programs should be used for removing digital gap existing on this relation, as well as on relation village – town so that all citizens could have the equal access to ICT and electronic commerce technologies. As long as telecommunication environment isn’t promoted along with investments into Internet infrastructure by coordinated action in all regions, electronic business will remain at low level and in domain of conventional order.

- There is insufficient information regarding potentials of ICT in commerce. Promotional and educational activities should be used to help consumers understand the Internet environment, to realize new aspects of virtual economy (benefits and possible barriers) and to meet the so called Gift Economy on the Internet.

- There is an incomplete legal framework dealing with consumers and protecting their interests. Besides amendments to currently valid Law on Electronic Commerce and the Law on Electronic Signature, based on the model used in neighboring countries, the Law on Foreign Current Operations should be changed and a new law on payment transactions should be adopted. The Law on Foreign Current Operations could secure Montenegrin companies mechanism for sale on foreign markets. To the State it would secure foreign exchange revenue. To consumers it would bring trust into online commerce using national sites. Since the laws defining electronic business in Montenegro adopted so far do not define the concept of electronic money, this could be done by the law on payment transactions, by which citizens, besides a wide branch of instruments of electronic payment, would also get legal protection.

- There is a lack of purchasing power. This issue should be treated within overall economic policy aimed at creating conditions for reducing unemployment, increasing incomes and raising standard.

It is necessary to map the basic critical factors for the growth of electronic commerce from the consumers’ aspect and suggest measures for resolving these problems so that companies by their activities could increase the base of satisfied online customers and the Government by strategic plans could create a favorable environment for acting towards other institutions and establish better cooperation with companies regarding mentioned issues.

After analyzing data gained from employees and managers in the Montenegrin companies on the side of offer we have got results which are not optimistic at all. Companies are aware that on a long-term basis the usage of electronic commerce technologies is related to profitability and long-term growth of company, but the participation of electronic transactions in overall transactions is still very low. Reasons for such state managers see in discouraging economic environment and employees in feeble effort to attract and keep online customers.

More than 75% of persons surveyed on the side of offer have their own website, mostly informative and static one. Based on answers got from employees it could be concluded that in all companies maximum efforts have been made regarding designing and functioning of website. As regards quality, there is no backwardness in comparison to other companies that have online offer.

However, when we did a quantitative evaluation applying Web Assessment Index (WAI), we discovered that there were shortcomings and still a lot had be done regarding functionality and personalization of the sites.

WAI model was developed in 2001 and so far it has been used in a great number of researches aimed at evaluating the quality of websites of companies coming from different branches of industries [13,14].

The quality of websites of the surveyed Montenegrin companies we measured using 4 criteria: access, speed of access, navigation and site content.

As sub criteria for access we used the presence on search engines and link popularity. For measuring the presence on search engines we decided to use Google and for measuring popularity we used data got from AlexaWebsite.

For measuring the speed of access we carried out independent testing of the opening speed of websites of companies by approaching from one computer at the same time. We repeated testing three times in 15 days and got results which were slightly different.

For testing navigation we used a subjective standpoint of the authors, evaluating the presence of the site map, simplicity of navigation, linkage of the basic page with other site pages, easy orientation of users on the site etc. For evaluating the content, following the pattern of previous works, we split content into three subcategories:

1. Information content
2. Content for the purpose of communication with consumers
3. Content related to transactions themselves

From the total of 100 points for evaluation of the site quality, 55 were intended for content (by subjective assessment as the most important criterion for site quality evaluation) and 15 for each – access, speed and navigation. From 15 points for access, 5 were given for presence on search engines and 10 for the number of visits on the site.

When the testing was done, we got the following results:

- Out of total of 100 points, only two companies have between 80 and 90 points, 4 companies are in the range of 70-80, 7 companies are in the range of 60-70, 21 companies are in the range of 50-60 and even 32 companies have less than 50 points.

- When analyzing the presence on search engines, none company appears on more than 60 search results previews, 14 companies have 50-60, 27 companies have 30-50 previews and the greatest number is of those having less than 30 search results previews;
By measuring the speed of access we established the quickest access of 3.4 seconds and slowest of 41.6 seconds. The greatest number of companies has the speed of access between 6 and 8 seconds. We have also noticed that the speed of access is in direct correlation with quantity of content on the site.

We have seen that the companies with a greater number of achieved points regarding access have a better navigation. Out of 66 companies 27 have and 39 do not have the site map.

Regarding the content assessment, all companies got maximum points for information content and content related to contact and communication. Very small number of points has been given for content related to transactions and information on carrying out online transactions, which leads us to conclusion that the level of online transactions is very low. Regarding the assessment of content quality, 26 companies got between 40 and 50 points, 11 between 30 and 40 points and 29 between 20 and 30 points.

27% of analyzed websites support bilingualism (the English and Montenegrin language). By comparison of these data with data got by other researches (by application of the same technique) it can be concluded that managers and marketing experts of the Montenegrin companies should make more efforts in order to improve the functionality of their sites. At the first place we think on more serious approach to SEO technique so that visibility could be increased, then on improvement of the quality of content in part of online transactions that can be offered to consumers, on improvement of quality of navigation, on more frequent refreshing of the available information and on higher level of encouraging customers on two-way direction.

Among the Montenegrin companies that have been analyzed there is a strong competition, for the purpose of gaining comparative advantage, employees in marketing sectors are currently focused on finding new products and services. On the other side, development of web presence strategy, on cite, forums, social communities etc, in 53 out of 87 companies is partially left to IT sector, where logically exists a lack of interdisciplinary knowledge.

Our impression is that all the efforts of managers and employees in the area of usage of electronic commerce technologies are aimed at stimulating customers to come to a physical location, point of sale, which is still considered as the most secure place for transactions. As it is the case with a great number of companies from other branches of industry, in Montenegro, instead of adopting an insufficiently known ground, the management its development strategies mostly directs towards reducing costs of traditional business and traditional communication.

Answers of all persons surveyed on the side of offer show that there are expectations regarding support from the State.

Analyzing the experience from the area of electronic commerce in developed market economies, the support would be significant in the following fields [15]:

- The level of information on electronic services should be increased by educational activities, as well as the awareness of their potentials;
- Digital gap on the relation north – other regions, village – town, younger – older population should be reduced;
- Implementation of measures aimed at further cutting the prices of access to new technologies should be continued.

Also, in companies there is no ambition to separate the effects of traditional from effects of electronic types of communication and carrying out transactions, which leads to conclusion that there is no serious consideration of the role of ICT.

In all analyzed companies some mutual problems have been noticed:

- It frequently happens that important decisions on transition from traditional to electronic business are made by managers without cooperation with other experts for organizational and technological changes;
- Very often, decisions are made based on the feelings, intuition, bad experience and by neglecting key facts on business;
- Decisions are made without researching the market of customers and their needs, with no knowledge of competition and its activities;
- There is no knowledge of electronic commerce technology usage phases, and the importance of transition from one phase into another. Therefore, often there is unnecessary long or permanent remaining in the existing phase;
- After decision on transferring into electronic market is made, it often happens that affairs of transition are entrusted to persons or institutions out of company, which as a consequence can have a lack of knowledge of business processes, business climate, culture, mission and vision of a specific company and the problems may arise;
- None of the filled questionnaires gave positive answer to question on possessing methodology or any internal activity by which metrics of the importance of application of ICT in business is done.

It is clear that successful usage of ICT implies the existence of suitable stimulating politics that will be based on strong scientific basis, appropriate human and financial resources and adequate technological and business infrastructure, which is not the case in Montenegro.

Positive developments in the area of electronic commerce technologies usage can happen only if:

- Traditional business procedures and programs are continuously adjusted to new instruments of digital environment;
• Competence of all staff and management is adjusted to potentials of the Internet environment;
• Criteria for successful implementation of the Internet activities are defined;
• Requests of the clients are permanently observed and, in accordance with that, intuitive analyses are replaced by analyses based on micro segmentation;
• Benefits of existing “a large number of data” are used, and which can be gained by application of up to date instruments of marketing;
• The web offer is promoted amongst the clients;
• The experience of successful companies from developed market economies are used and bottlenecks in business practice of the Montenegrin banks are removed;
• The methodology for measuring the success of the usage of the Internet services is elaborated.

IV CONCLUSION

At this moment in Montenegro there is a need for better understanding of electronic commerce concept, its potentials and factors inhibiting its faster development. Also, there is no holistic approach of the analysis of the influence of the identified factors on adoption of ICT on national level, level of industry and level of organization. There are many factors influencing slow adoption of ICT and consequently slow adoption of electronic commerce technology: a lack of technologies, insufficient usage of existing technologies, IT illiteracy, incomplete legal infrastructure, problems arising from economic potential of the country that belongs to a group of small and insufficiently developed economies etc. Results of the analyzed data got from the companies on the side of offer show that the affirmation of electronic commerce can be achieved only by coordinated action aimed at solving the fundamental problems that can be divided into following groups:

• financial problems;
• organizational problems;
• technical problems;
• problems whose solving requires the assistance of the State;

On the other side, results of the analyzed data got from the individuals on the side of demand show that the growth of electronic commerce volume can be secured only when the following issues are solved:

• when a perceived digital gap is reduced;
• when the legal framework protecting the rights of customers in electronic environment is completed;
• when the purchasing power of customers is increased;
• when IT and telecommunications environment is promoted and programs of supports to the Internet users securing the system of information and education of participants in online transactions are designed.

It would be illusory to expect that all perceived barriers would be removed in short time, but we think that identification of the problems can accelerate their resolving. If we consider the speed of solving these problems during last two decades, it could be concluded that the process of their removal or mitigation in Montenegro might last until the beginning of the second half of this century.

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