

**SUCCESSFUL
IMPLEMENTATION OF
INFORMATION TECHNOLOGY:
*IT, MARKETING, EDUCATION AND
BUSINESS WORKING TOGETHER
FOR BUSINESS SUCCESS***

**SUCCESSFUL IMPLEMENTATION OF INFORMATION
TECHNOLOGY: IT, MARKETING, EDUCATION AND BUSINESS
WORKING TOGETHER FOR BUSINESS SUCCESS**

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FOREWORD

*The book titled “**SUCCESSFUL IMPLEMENTATION OF INFORMATION TECHNOLOGY: IT, MARKETING, EDUCATION AND BUSINESS WORKING TOGETHER FOR BUSINESS SUCCESS**” tells us about the intertwinement of information technologies with all business spheres, be that management, marketing, education, etc. Technological development has brought about many changes that influence the way companies do their business. They often use information technologies as a source of competitive advantage and as an integral part of their business strategies. The gaining of competitive advantage is a continuous, serious and a very difficult task put before companies striving to become market leaders. Collection of a large quantity of data, constant monitoring of happenings and changes on the market, recognizing market needs, revisiting goals, strategies and readiness of the company to constantly react to changes in the environment, implementation of novelties and adjustment to customers' needs are factors company's survival, success and performances depend on.*

One of the primary tasks of modern companies is researching and recognizing market needs for new products and services. If companies wish to meet these needs, they need to plan the appropriate activities and development by encouraging the development of new needs or expanding the consumer circle. The influence of modern information and communication technologies on marketing activities is quite evident. Business is much more efficient and effective and consumers are more than ever placed in the center of every company's attention, and the integration of the Internet with the traditional marketing principles is leading companies towards success in an incredible speed.

The book is thematically divided into two sections. The first section tells us about the crucial reasons for a successful implementation and adoption of information technologies, whereas the second section studies the efficient marketing management. As editors, we have tried to group all papers according to their research subject and topicality and we are hoping that we have managed to contribute to a better understanding of this matter. We are using this opportunity to thank all the authors who have given their contribution to this book.

September, 2018.

Editors

***I Part: KEY CONSIDERATIONS FOR THE
SUCCESSFUL IMPLEMENTATION AND
ADOPTION OF INFORMATION TECHNOLOGY***

MOBILE TECHNOLOGY IN HIGHER EDUCATION – A STUDENTS PERSPECTIVE ON LEARNING WITH MOBILE COMPUTING DEVICES

Ljiljana Stanojevic¹

Beba Rakic²

ABSTRACT

Technological developments in higher education brought about many changes affecting the way we teach and learn. The aim of this study was to investigate students' attitudes towards the use of mobile technologies in higher education as well as to obtain a deeper insight in the nature of students' use of mobile technology in order to design successful teaching interventions. For the purpose of this research a questionnaire was designed (reliability based on Cronbach's alpha = 0.875) aiming to investigate the actual daily habitual use, as well as the attitudes of students towards mobile technologies for their university education purposes. The survey was used to collect data from 107 undergraduate students from two private university in Serbia. Data were collected during winter semester 2017/2018 academic year. The conclusions indicate that majority of students use mobile technology for self-directed learning rather than within classroom or for subject-specific studies. In addition, there were no statistically significant differences in student use of mobile technologies due to their gender, age or major. Our research attempts to fill a gap in the individual country-level mobile learning research. We believe that the findings of current research could help authorities to lay the ground for mobile-based learning in universities.

Key words: Mobile Technologies, Mobile Learning, Wireless Technologies, Higher Education

JEL Classification: O14, D83, I23

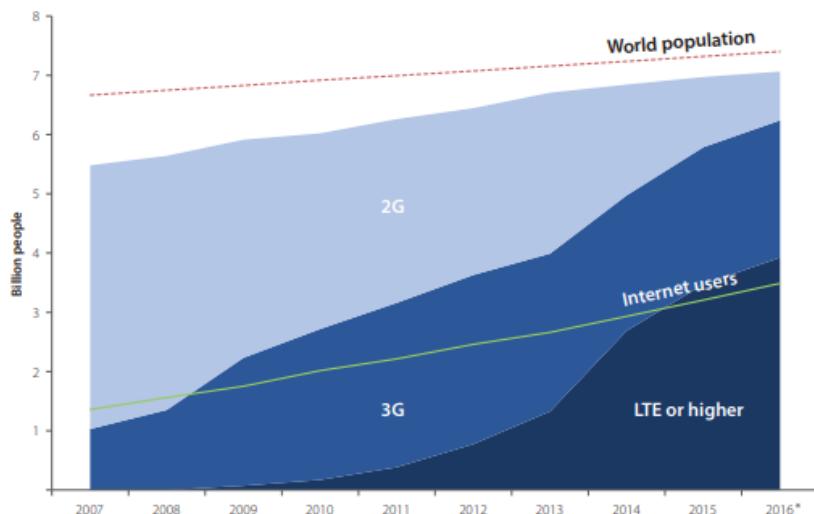
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INTRODUCTION

In recent years, mobile devices have spread at an unprecedented rate and their use to support teaching and learning in higher education is becoming much more popular. Today's generation of students are already very familiar with various kind of mobile technology (Pegrum et al, 2013, pp. 66-81; Henderson and Yeow, 2012, pp. 78-87; Looi et al, 2016, pp.79-96). This generation, so called "Millennial generation", were born in a time when the use of computers was already disseminated among common users, and when most of the digital technologies available today were already part of everyday life (Brantes et al, 2013, 47-82). For this generation traditional way of teaching (teacher centred), where learners are passive subject of learning process are no more acceptable (Stanojević, Randelović 2018, pp. 213-232). It is a generation empowered by massive use of technologies that expect to produce content not just only to absorb it. Such content is not limit to the text, but involves multiple media (sound, images, videos, animations) (Brantes et al, 2013, pp. 47-82).

According to the ITU (2016) seven billion people (95% of the global population) live in an area that is covered by a mobile-cellular network. Mobile-broadband networks (3G or above) reach 84% of the global population and LTE networks reach almost 4 billion people today (53% of the global population) (Picture 1).



Picture 1 – Mobile network coverage

Source: ITU, 2016, pp. 1-8

The largest demographic of mobile device users is 18–29 year olds (Pew, 2017; Poushter, 2016) which is also the typical age of college attendees (Crompton, Burke, 2018, 53-64). The survey on Mobile IT in higher education (Educause Center for Applied Research [ECAR], 2012) reviled that 67% of surveyed students believe mobile devices are important to their academic success and they use their mobile devices for academic activities. With expansion of wireless and 4G technologies possibilities of using mobile devices for learning become endless. Together, these technologies enables learners to study whenever and wherever they want facilitating ‘just-in-time’ learning, since learners usually have their devices with them.

The rapid growth of information and communication technologies (ICT) has influenced every aspect of our life. Contemporary ICT components like Smartphone, broadband Internet, and Wi-Fi networks have changed the way we seek information and learn. In order to keep up with the progress, higher education institutions have begun to invest in new technologies. Nowadays, ICT equipment, such as various types of computers, projectors, smart board etc., represents an essential part of a 21st-century classroom. The integration of new technologies in the classrooms opens new possibilities for the teaching and learning and provides educational institutions an opportunity to increase student enthusiasm and enhance learning outcomes (Stanojević, Randelović 2018, pp. 213-232).

Today's higher education institutions in Serbia are facing numerous challenges, like decreased numbers in newborns that latter affect number of freshmen, growing competition in the field of higher education, rapid growth of new technologies and their influence on teaching and learning process, etc. In order to respond to challenges of growing competitions higher education institutions are changing subjects, marketing strategies and even partnerships (Rakić, Rakić, 2012, pp. 293-304). Fast changes in the surrounding, demand from higher education institutions' management more flexible approach in organizing and efficiency in carrying out activities (Miljkovic et al, 2011, pp. 117-141). In order to adapt to changes and market trends, higher education institutions develop their activities and programs on the basis of continual monitoring of education needs (Gerasimovic et al, 2011, pp. 175-188). Internet and other digital media also affect co-creation of unique value with end users (Rakić, Rakić, 2013. pp. 446-455). In a conclusion, all of this requires a comprehensive understanding of the factors that lead to positive perceptions of the institutions services.

For higher education institutions, the retention of students is as equally important as enrolment. To retain students means to understand theirs needs, the way they learn, communicate, share ideas. Higher education institutions are dealing with highly technologically adept students who are accustomed to using technological advancements during their education. Nowadays, students greatly rely on mobile technologies in every aspect of their lives including education,

because it enables them to be engaged in interactions that are free from the constraints of physical proximity (Primmer et al, 2016).

Research is required to explore whether these usage of mobile technologies in educational purpose is self-directed only, or students use them in within classroom or for subject-specific studies.

The purpose of this research to investigate students' attitudes towards the use of mobile technologies in higher education as well as to obtain a deeper insight in the nature of students' use of mobile technology in order to design successful teaching interventions and facilitate the future development of the technology infrastructure.

MOBILE TECHNOLOGIES AND MOBILE LEARNING

Advances in mobile and wireless technologies have influenced the entire society. Mobile technologies is the term that include wireless technologies and mobile devices (Caudill, 2007, p. 1-13). The term wireless refers to technologies that enable communication without cables or cords, mainly through use of radio frequency, bluetooth or infrared rays (Wagner, 2005, pp. 40-53). Wireless communications are managed via networks and one of the most available, widespread and known network technology is the Internet. M-Learning resources depend on access to the Internet to exchange information and access up-to-date information. There are several standards that enable mobile devices to access network without plugging into a land line connection. Currently the most widespread standard used for this purpose is IEEE 802.11 wireless communication standard, commonly called Wi-Fi. Regardless of which standard is in use, wireless networking provides learners with the opportunity to connect with colleagues and instructors via online resources from a much broader variety of places than are accessible via traditional cable connections.

The second technological key component of mobile technologies is mobile devices. According to Peters (2005, pp. 2) there are three criteria to determine whether devices should be classified as mobile technology or not:

- small enough to be easily carried,
- capable of providing communication and/or information functions,
- can be used (at least part of the time) without a physical connection to fixed power or telecommunications services.

Using these criteria and for the sake of our research, under the terms of mobile devices we considered smartphones and tablets.

The growth of mobile technologies presents a huge opportunity for the delivery of learning via devices such as smartphones and tablets. The new generation of mobile devices makes it possible for students to learn, collaborate, and share ideas with each other at any time and anywhere and has become an important educational technology component in higher education. The

educational use of digital mobile technology is known as mobile learning or m-learning.

M-Learning as an educational method is more flexible than e-Learning applications (Georgiev, Georgieva, & Trajkovski, 2006, pp. 349-353) since mobile applications are not restricted to desktop computer technology. Mobile learning is considered as a new component of distance learning (Caudill, 2007, p. 1-13). To understand the distinctions between e-learning and m-learning, it is necessary to look at what e-Learning really is, followed by the emerging definitions of m-Learning.

Pinkwart, et. al. (2003) define e-Learning as, “*learning supported by digital ‘electronic’ tools and media*”, while Ramshirish and Singh (2006, pp. 2) see e-Learning as “*... essentially education via electronic network in which content is transferred via the Internet, intranet, extranet, audio/ video tapes, satellite television, and CD-ROMs*”. What is important to recognize is that definitions of e-Learning almost always specify that learning taking place in an environment, and that environment happens to utilize some kind of electronic devices to convey the learning experience (Caudill, 2007, pp. 1-13).

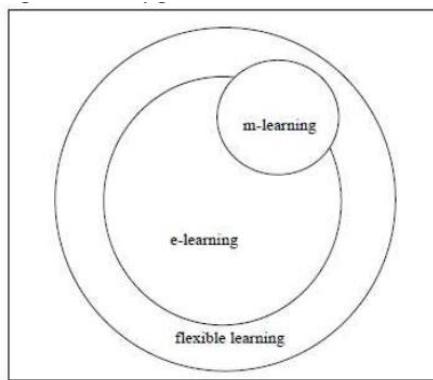
Mobile learning has been described and defined in a variety of ways. Winters (2006, pp. 7-11) define mobile learning as any form of learning that is mediated through mobile devices, and Hwang and Tsai (2011, pp. E65-E70) define mobile-learning as the use of mobile technologies that facilitate learning. Brantes et al (2013, pp. 47-82) define mobile learning as learning process supported by the use of mobile and wireless information and communication technologies which have as a fundamental characteristic the students' mobility.

The common characteristic of all these definitions is that they incorporate the use of mobile technology to in order to transfer and acquire knowledge. M-Learning, like e-Learning also, can be utilized on different scales. While one environment may utilize m-Learning as a single component of a single topic, the other one may be dedicated to using m-Learning as the only means for learning. In either case the technology applied will be mobile (Caudill, 2007, pp. 1-13).

Mobility is the most important aspect of mobile learning. Physical mobility is not the only characteristic of mobile learning. According to Brantes et al (2013, pp. 47-82) besides physical mobility, a mobility of technology, mobility in conceptual space, social mobility and temporal mobility also constitutes mobile learning. Regardless of whatever mobile learning is seen, the notion of the facilitation of learning is crucial since mobile technologies creates new possibilities in learning process (Wankel, et al, 2013, pp. 3-17). The main outcome of their use is more meaningful and more purposeful learning, as these technologies have a potential to enable anytime anywhere learning.

Though there are some differences lies between E-learning and M-learning, they are closely related. According to Low and O'Connell, (2006, pp. 71-82) m-learning is a sub-set of E-learning. Their relationships are presented on Picture

2. Low and O'Connell, (2006, pp. 71-82) describes mobile learning as "*just enough, just in time, just for me' model of flexible learning*".



Picture 2. Relationship of e-learning, m-learning and flexible learning

Source: Low and O`Connell, 2006. pp. 71-82

Mobile learning, as an educational approach, encourages flexibility. Students do not need to be a specific gender, age or member of a specific group or geography, to participate in learning opportunities. Restrictions of time, space and place have been overcome.

Widespread adoption of mobile devices initiated many research in regards to the potential and use of mobile devices in higher education. Many higher education institutions are implementing mobile learning to provide flexibility in learning. With the proliferation of wireless devices and technologies, it is expected that this will continue to be a growing trend. It is expected that the next generation of mobile learning will be ubiquitous and learners themselves will be more mobile and able to learn using multiple devices (Ally & Prieto-Blázquez, 2014, pp.142-151).

BACKGROUND AND LITERATURE REVIEW

Previous researches on mobile learning were mostly focused on effect of mobile learning (Chu, 2014), followed by design aspects (Viberg, & Grönlund, 2017, pp. 357-377), motivations (Furió et al, 2015, pp. 189-201), performance (Sung et al, 2016, pp. 252-275) the ease of use (Hyman, Moser, and Segala, 2014, pp. 35-52) and to identify trends of students and faculty members on the use of m-learning in higher education institutions (Al-Emran, Elsherif and Shaalan 2016, pp. 93-102). Mobile learning were observed through formal education in and out of classroom (Frohberg, Goth, & Schwabe, 2009, pp. 307-331) and in the context of lifelong learning (Sharples, 2000, pp. 1-9). Sharples et al. (2007, pp. 1-9), and Traxler (2007), identified mobile learning as both

formal and informal, where formal learning, by design, is where learners are engaging with materials developed by a teacher and informal learning is any other forms of learning that occurs when learners use their mobile computing devices to research, investigate, or collect information to be used in their formal learning environment.

Regarding the course subjects, mobile learning was studied primarily in the setting of language and linguistics courses, followed by computer classes and health sciences (Wu et al., 2012, pp. 817-827).

Even though these studies add to the scholarly understanding on the use of mobile learning, it is not easy to parse out what is specifically happening in higher education to understand how the devices are supporting learners in those settings.

Crompton and Burke (2018, pp. 53-64) in their comprehensive analysis of the use of mobile learning in higher education, point out that there is only a few researchers that conducted more granular reviews with a focus on higher education (viz. Alrasheedi et al., 2015, pp. 257–276; Kaliisa & Picard, 2017, pp. 1–13; Pimmer et al., 2016, pp. 490–501). However, these research were focused only on certain aspects of higher education. Alrasheedi et al. (2015, pp. 257–276) research were focused on critical factors that impact mobile learning implementation. Their analysis identified 14 critical factors which strongly impact mobile learning implementation. According to their findings the most critical factor for success was whether or not students perceived that their productivity was increased by using mobile learning. Pimmer et al. (2016, pp. 490–501) research were primarily focused how mobile learning is used in higher education in relation to existing learning theories. Their research indicated that instructionism was the most prevalent educational design. Kaliisa and Picard (2017, pp. 1–13) in their study were focused on various characteristics, such as type of device, instructors and student's perceptions, methodologies, and theoretical frameworks. This study was narrow in focus as it only included studies conducted in Africa.

According to Crompton and Burke (2018, pp. 53-64) comprehensive analysis of the use of mobile learning in higher education from 2010 to 2016, research on the use of mobile technologies was the mostly conducted in Asia (50% of studies), followed North America (21%) Europe (13%), Australia/Oceania (13%) and Africa (3%). Picture 3 represents the specific countries in which the research occurred.

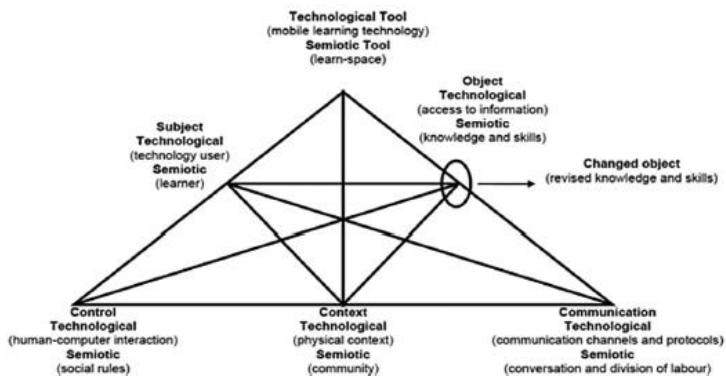
<u>Countries of Study</u>			
Asia (39)			
Taiwan (13) China (8) So Korea (7)	Japan (2) Hong Kong (3) Turkey (3)	Malaysia (1) Pakistan (1) U.A.E. (1)	
Europe (10)			
UK (3) Netherlands (2) Finland (2)	Germany (1) Spain (1) Sweden (1)		
North America (16)			
	USA (14)	Canada (2)	
Australia (7)			
	Australia (7)		
Oceania (3)			
	New Zealand (3)		
Africa (2)			
	Nigeria (1) South Africa (1)		

Picture 3 - Countries of study where the studies took place

Source: Crompton and Burke, 2018, pp. 53-64

Our research attempts to fill a gap in the individual country-level mobile learning research. We believe that the findings of current research could help authorities to lay the ground for mobile-based learning in universities.

Some researchers focused on frameworks for theorising about mobile learning. Sharples, Taylor, and Vavoula (2005, pp. 1-9) proposed a framework adopted from Engestrom's expansive activity model.



Picture 4 - A framework for analyzing mobile learning

Source: Sharples et al., 2005, pp. 1-9

They proposed a framework that describe learning: “as a labile process of ‘coming to know’ through conversation in context, by which learners in cooperation with peers and teachers construct transiently stable interpretations of their world” (see Fig. 4). The structure of the learning is created by the learner and the device is just a tool for information and direction.

On a Picture 4 educators and technology are presented as the Controls, Context consist of multiply actors (people and technology) who interact around a shared objective, and Communication represents new forms of communication arise from usage of new technologies.

Liaw et al. (2010, pp. 299-305) proposed a mobile learning framework based on Sharples framework. Theirs framework is based on the activity theory which focuses on mobility of learning and is focused on how new technologies can support knowledge management, accessibility, exchangeability and delivery of both knowledge and learning materials.

In our research we adopt Sharples framework. In order to design successful teaching interventions our research focused of students' attitudes towards the use of mobile technologies and the nature of students' use of mobile technology. The study of students' perceptions regarding the use of mobile learning is important, as people's perceptions influence how they behave (Ferguson & Bargh, 2004, pp. 33-39). If students perceive that mobile learning has little or no value, they are less likely to embrace the use of mobile learning. (Crompton & Burke, 2018, 53-64).

RESEARCH PROBLEM

Mobile technologies has become an important educational technology component in higher education since they make it possible for students to learn, collaborate, and share ideas among each other and. We have perceived that mobile learning has not yet been explored intensively within the private universities in Serbia. We observed several factors that could help in decision making whether or not to adopt mobile learning. For higher education institutions it is important to investigate the end-user attitudes towards the use of such technology in order to set up a developing plan. Therefore, our research seeks to answer the following research questions:

RQ1: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of gender?

RQ2: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of their specialization?

RQ3: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of mobile technologies ownership?

RQ4: What is the students' attitudes towards mobile technology?

RESEARCH METHODOLOGY

The aim of this study was twofold. First to investigate students' attitudes towards the use of mobile technologies in higher education and the second to explore the role of mobile technologies in learning process from students' perspective. To do so, we accepted the framework proposed by Sharples et al. (2005, 1-9). Similar to these framework, we presume that the differences in attitudes among the sample groups as well as benefits of mobile technologies that will rise from students perspective, could lead the understanding of students` needs, their perceptions of mobile technologies usefulness and better teaching.

Our research was conducted during winter semester 2017/2018 academic year on two private universities in Serbia. Data were collected by conducting online survey. Total sample included 107 students. Students were from different majors and from different departments. The participants were informed that their participation is entirely voluntary in the study and their responses are completely confidential. Sample structure is presented in Table 1.

Table 1. Sample structure

No	University	Department	Major	Number of participant
1	University Business Academy in Novi Sad	Faculty of applied management, economics and finance	IT Management Economy	19 (17%) 29 (27%) 3 (2%)
2	Megatrend University	Graduate School of Business Studies	Management	36 (35%)
	Megatrend University	Faculty of Geoeconomics	Economy	20 (19%)

The survey that consists of 22 questions and was divided in three sections. The first section consists of four items that represents the student personal information data. The second section consists of eight items that represents the student information regarding the mobile technology. The third section of the survey consists of ten items that represents the attitudes towards the use of mobile technology in learning process and assessment of use. A five-point Likert Scale, with Strongly Agree (5), Agree (4), Don`t know (3), Disagree (2), and strongly disagree (1), has been used to measure the ten attitude questions (Table 2).

The survey was developed according to relevant studies, such as (Al-Emran, Elsherif and Shaalan 2016, pp. 93-102; Alwraikat & Al Tokhaim, 2014, pp. 114-135; Liaw & Huang, 2012, pp. 299-305; Cavus, 2011, pp. 1469-1474) in order to ensure content validity. The questions used to determine students

attitudes towards using mobile technologies in learning process, are presented in Table 2.

Table 2 – Questionnaire structure of students' attitudes and use of mobile technology

	Question	S +	D -	D o	A g	S -
Q1	Mobile technology is a useful tool for my study.					
Q2	Mobile technology can offer opportunities for communication and team-working.					
Q3	Mobile technology can help me in finding resources related to my study.					
Q4	Mobile technology can bring many opportunities to the learning process.					
Q5	Mobile technology can help me to access the course-material anytime anywhere.					
Q6	Mobile technology can be an easy way to get feedback and notifications from my instructors.					
Q7	Mobile technology can help me to exchange the course-material with my friends.					
Q8	Mobile Apps can help me to manage my study.					
Q9	Mobile technology can help me to do my coursework.					
Q10	Mobile technology can help me to develop my learning skills.					

In order to explore students' attitudes toward using mobile technology, we established measures. They are presented in Table 3.

Table 3. Measures of students attitudes towards using mobile technology

Questions	Measure
Q1, Q8, Q9	perceiving of the usefulness of using the mobile devices in their study
Q2 and Q6	communicating with colleagues and instructors
Q3, Q5 and Q7	information and materials access, retrieval and exchange
Q4 and Q10	perceiving of self-improvement, and development of their learning processes and skills

According to Ardies et al. (2014, pp. 1-23), the questions were randomized in order to avoid the bias due to the grouped questions that covers the same theme which might influence each other.

RESULTS AND DISCUSSION

The collected data were analyzed using the Statistical Package for Social Science (SPSS). First, normal distribution was approved by Kolmogorov-Smirnov test. Then, reliability test, for the ten independent variables that represent the attitudes, has been checked by calculating Cronbach's alpha ($\alpha=0,875$).

The first part of survey that deal with students' personal information revealed that in total sample 67% were female students as compared to the 33% of male students. 81% of the students age ranges between 19 and 24, 13% are between 25 and 29 years old and 6% are older than 29. 62% of students were form Management major, 21% form Economy major and 17% form IT major. All the students are studying at the undergraduate level.

By analyzing the students' mobile technology information, from the second part of survey, results have shown that 99% of students own some kind of mobile technologies (smartphone, tablet) and only 1% of the students do not have any of them; 84% of the students are using their mobile devices (smartphone, tablet or laptop) for browsing the Web, accessing social networks or their emails while 16% of them were using their mobile devices in their education; 85% of the students are using their mobile devices in their study while only 15% do not do so.

The rest of this section presents the findings that answer the research questions.

RQ1: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of gender?

In order to examine first research question an independent samples t-test was carried out. The results are presented in Table 4:

Table 4 – Results of t-test

	Gender	N	Mean	SD	t	p
Attitudes	Male	35	3.623	1.132	1.012	0.104
	Female	72	3.212	0.931		*

* Significant at (p<0.05).

Results of an independent samples t-test shows that there is no statistically significant difference between genders regards to students attitudes towards

using mobile technology in learning process. One of the explanations of such results could be that a great number of university students today are now part of the “Millennial” generation that grow up with digital media in multiple forms and they are extremely adept to use multiple mobile devices regardless to their gender.

This findings are consistent with the findings of Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016, 93-102) who target students from Oman and UAE, Khaddage and Knezek (2013, pp. 256-258) (who intended students from Midwestern University in USA and students from Higher College of Technology in UAE), Yang (2012, pp. 148-154) (who targeted students at the Engineering Department at the Technical University in Taiwan) and Cavus (2011, pp. 1469-1474) (who targeted students at Computer Information Systems Department at Near East University).

RQ2: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of their major?

In order to examine whether there is any significant difference in the students' attitudes towards the use of mobile technologies with regard to their major, one-way ANOVA was used with Turkey's post hoc test. The results are shown in Table 5.

Table 5. One-way ANOVA and post hoc comparisons for major

Question	Education major						post hoc comparisons			
	IT (1)		Management (2)		Economy (3)		1 vs. 2		1 vs. 3	
	M	SD	M	SD	M	SD	p	p	p	p
Q1	3.42	0.506	3.39	0.488	3.29	0.951	0.097	0.132	0.101	0.086
Q2	3.63	1.134	3.42	1.311	3.86	1.345	0.271	0.324	0.060	0.321
Q3	4.1	0.816	3.93	1.115	4.01	0.756	0.314	0.125	0.081	0.354
Q4	3.13	1.044	3.51	1.215	3.71	1.113	0.098	0.432	0.121	0.367
Q5	3.93	1.512	4.03	0.985	3.95	0.816	0.143	0.354	0.324	0.211
Q6	3.46	1.069	3.83	1.115	3.71	1.604	0.232	0.234	0.143	0.311
Q7	3.86	1.069	3.75	1.138	3.97	1.604	0.325	0.123	0.234	0.075
Q8	3.17	1.267	3.14	1.345	3.56	1.604	0.354	0.416	0.264	0.254
Q9	2.89	0.871	2.67	0.488	3.71	0.426	0.265	0.115	0.092	0.304
Q10	3.14	0.962	3.45	0.892	3.12	1.092	0.092	0.287	0.102	0.187

The result presented in Table 6 indicated that there is no significant difference in the students' attitudes towards the use of mobile technologies with

regard to their major. It can be concluded that mobile technology can be adopted by all students from different majors without any additional special features.

This findings are consistent with the findings of Taleb and Sohrabi (2012, pp. 1102-1109) (who targeted students of Psychology and Educational Science in Islamic Azad University of South Tehran in Iran) and Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016, pp. 93-102) who target students form Oman and UAE,

RQ3: Is there any significant difference among the students' attitudes towards the use of mobile technologies in terms of in terms of their age?

In order to examine whether there is any significant difference in the students' attitudes towards the use of mobile technologies with regard to their age, one-way ANOVA was used with Turkey's post hoc test. The results are shown in Table 6.

Table 6 - One-way ANOVA and post hoc comparisons for age groups

Question	Age groups						post hoc comparisons			
	19-24 (1)		25-29 (2)		Above 29 (3)		1 vs. 2	1 vs. 3	2 vs. 3	
	M	SD	M	SD	M	SD				
Q1	3.32	0.823	3.38	0.495	3.72	0.516	0.077	0.651	0.201	0.186
Q2	3.43	1.059	3.13	1.727	3.38	1.061	0.341	0.752	0.161	0.421
Q3	3.81	0.632	4.35	1.389	4.04	0.756	0.134	0.723	0.181	0.354
Q4	2.63	0.916	3.48	1.282	3.25	1.054	0.191	0.092	0.321	0.367
Q5	3.87	0.949	3.93	1.195	3.87	1.195	0.245	0.341	0.314	0.211
Q6	3.63	1.408	3.88	1.246	3.43	1.101	0.431	0.342	0.143	0.251
Q7	3.98	1.302	3.92	1.101	4	1.309	0.125	0.543	0.434	0.375
Q8	3.13	1.356	3.38	1.302	3.5	1.269	0.454	0.423	0.164	0.254
Q9	3.65	0.471	3.75	0.463	3.37	0.991	0.164	0.655	0.121	0.304
Q10	3.01	0.923	3.29	1.092	3.47	1.087	0.092	0.113	0.212	0.187

The result presented in Table 6 revealed that there is no significant difference in the students' attitudes towards the use of mobile technologies with regard to their age. Results demonstrated positive attitudes by the students towards mobile technologies with non-significant differences in mean. It can be concluded that students (with regard to their age) are motivated and encouraged to use mobile technology in learning.

This findings is consistent with the findings of Alwraikat, (2017, pp. 114-135) (who target the group at The University of Jordan).

RQ4: What is the students' attitudes towards mobile technology?

By analyzing the students' attitudes towards mobile technology, it has been found that the total average score of the students' attitudes was (3.51). The score average of their usefulness perception of using mobile devices in their study was (3.30), their perception of its role in supporting communication with colleagues and instructors has achieved the highest average score (3.54), while the average score of the perception of facilitating information and materials access, retrieval and exchange was (3.96), and the average score of the perception of the self-improvement and the development of their learning processes and skills was (3.27) (Table 7).

Table 7. Students' attitudes towards mobile technology

Questions	Measure	Average
Q1, Q8, Q9	perceiving of the usefulness of using the mobile devices in their study	3.30
Q2 and Q6	communicating with colleagues and instructors	3.54
Q3, Q5 and Q7	information and materials access, retrieval and exchange	3.96
Q4 and Q10	perceiving of self-improvement, and development of their learning processes and skills	3.27

According to the results presented in Table 7, it can be concluded that majority of students agree that mobile technologies are helpful in information and materials access, retrieval and exchange and for communication with colleagues and instructors. Even though the score average for two other factors are slightly lower, the total average scores of students' attitudes indicate that the students` are very optimistic regarding use of mobile technologies.

This findings are consistent with the findings of other authors who have reported that mobile devices are used primarily by students for self-regulated learning (Sevillano-Garcia and Vazquez-Cano, 2015, pp. 106-118) and to enhance learning outside the classroom (Foti, 2014, pp. 58-78).

CONCLUSION AND FUTURE WORK

Mobile technologies are becoming more and more popular and useful as educational tools across as a means to engage and retain students. Higher education institutions and today`s educators have at their disposal a wide array of digital technologies that enable them to enhance the teaching and learning process. In order to embrace the full potential of these new technologies, higher education representatives and educators must be aware of present students`

attitudes toward using mobile technologies in order to design appropriate teaching interventions.

In this paper, we have highlighted the state-of-the-art mobile technologies (smartphones and tablets) in mobile learning regarding students' attitudes towards the use of mobile technologies in the higher educational universities. The main contribution of this study is to explore the students` attitudes, which in turn will support the decision makers in designing the required mobile learning infrastructure and educators in creating new contents and learning materials that could be accessed through mobile devices and also to fill a gap in the individual country-level mobile learning research.

The factors, like gender, age and major have been taken into concern in order to examining students' attitudes. A survey was conducted on a sample of 107 students from two private universities in Serbia. Different statistical analyses have been performed in order to test whether there is any significant difference among the students` attitudes towards using mobile technologies in learning process with regard to the aforementioned factors.

Results reviled that 99% of students own some kind of mobile technologies (smartphones, tablet) and only 1% of the students do not have any of them; 84% of the students are using their mobile devices (smartphone, tablet or laptop) for browsing the Web, accessing social networks or their emails while 16% of them were using their mobile devices in their education. 85% of the students are using their mobile devices in their study while only 15% do not do so. It can be concluded that students rely on mobile devices a great lot for information retrieval and are highly motivated to continue to use them in the future. So, investments in mobile infrastructure and all efforts in creating contents for mobile platforms will eventually pay off, increase students` retention and enrollment.

Although no significant difference has been noticed in gender, age and majors, the mean scores are very promising for such factors. The results indicated that students' genders have positive attitudes towards mobile learning with non-significant differences in genders, so it can be adopted by both genders without any additional special features. The results also indicated that almost all of the majors have positive attitudes towards mobile learning with non-significant differences in means. Since today`s generations of students are very familiar with various kind of mobile technology it can be concluded that for this "Millennial generation" mobile learning is quite appropriate and acceptable way of learning since it is complement with their way of living. Results demonstrated positive attitudes by the students towards mobile learning with non-significant differences with regard to their age, concluding that students of all ages are motivated and encouraged to use their mobile technology into their learning. The overall conclusion, based on results is that majority of students use mobile technology for self-directed learning rather than within classroom or for subject-specific studies.

As a limitation of this study, we have focused on two private universities in Serbia and only 107 students took part in this survey. As a future direction, we are intend to improve sampling approach, the instrument, and conduct the same research within the other universities in Serbia. Also, qualitative research will be included in collecting a data through open questions. According to the results of this study, our next step is to modernized universities infrastructure, create more appropriate contents for mobile platforms and redefine mobile website strategy.

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THE APPLICATION OF MODERN INFORMATION-COMMUNICATION TECHNOLOGIES IN COMMUNICATION WITH STUDENTS TO IMPROVE STUDENTS' SATISFACTION

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ABSTRACT

Higher education institutions, like all other service companies, must behave in accordance with the basic marketing principles, which means that the satisfaction of their students should be at the center of their attention and all their activities. Numerous research have shown that students' satisfaction has a positive impact on student motivation and attendance, as well as on attracting future students and increasing the income of higher education institutions. As the number of competitors grows in higher education every day, it is necessary to have an approach in which the client will be in the first place. Students want the best service, not only from the teaching staff, but also from the others with whom they come in contact during their studies. Research shows that there are many factors that influence students' satisfaction (teaching process, learning mechanisms, student expectations, image of higher education, communication, etc.), and that the impact of these factors on students' satisfaction increases significantly with the use of modern information and communication technology (ICT). For this reason, the authors of this paper especially dealt with the question of the impact of the application of modern ICT used in communicating with students on their satisfaction with the educational service. The theoretical aim of the research conducted by the authors of this paper among students is to indicate the modules of modern ICT-based communication that students apply. The social aim of the research is to help higher education institutions, primarily the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Professional Studies "Radomir Bojkovic PhD" from Krusevac, in redefining the strategy of communication to the current trends of modern society, and to give recommendations for communication with students in order to improve the level of their satisfaction, create a positive image and improve the business.

Key words: Education, Students' Satisfaction, Communication, Information And Communication Technologies

JEL Classification: I23, O33

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INTRODUCTION

The environment in the sphere of higher education is changing more and more rapidly. The number of higher education institutions is constantly increasing, so we can say that competition is becoming more and more intense every day, both at the local and global level. According to (Gavrić & Majdarević, 2014, pp. 592), the modern way of doing business has become a kind of hazard, and it awakened the spirit of competition between these institutions.

What is also evident at the higher education institutions in Serbia is the drop in the number of enrolled students, as a result of the decline in birth rates, which has led many higher education institutions to lose their battle in the education market. A small number of potential students is probably the most serious challenge higher education institutions in Serbia are facing nowadays. The survival of private higher education institutions on education market depends exclusively on themselves or the number of enrolled students. Permanent identifying students needs and expectations is becoming their primary preoccupation. Only those higher education institutions that behave in line with the basic marketing principle (consumers in the first place) have a chance of survival in a market game. In other words, in contemporary circumstances in the education sector, identifying consumer needs should be the starting and end point of the activities of educational institutions.

A new task has been set up before the management of higher education institutions in Serbia, which is to familiarize themselves with their market, and strive to ensure that the quality of study programs and services they provide attract a sufficient number of students. Identifying the needs and wishes of students and their satisfaction will lead to a better image of the institution and its positioning among potential beneficiaries. Gavin believes that university prestige or reputation is more important for students when making a decision on quality of service, but he suggests that universities focus primarily on measuring the quality of service they have received in order to differentiate their service from a competitive one (Durvasula, Lysonski, 2011, p. 33-46) (Gajić, 2011, pp. 72).

Service marketing is gaining in its growing importance. The central place in this sphere of marketing occupies the interaction between the service provider and the service user. Communication has thus become a key item in marketing activities. For this reason, the aim of this paper is to examine the ways of modern communication that students from the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac prefer and based on this, to make recommendations for the management of these two higher education institutions in order to (re)define a communication strategy that will positively affect the quality of the service and increase the satisfaction of students, and consequently the image of the institutions themselves.

STUDENTS SATISFACTION

The survival of private high-school institutions depends solely on themselves or the number of enrolled students. The struggle for each student has become their everyday life. For this reason, they have to adapt to changes in the environment and to modern business principles. According to them the consumer must be in the first place. In case of education, those are students - users of educational services. Students are those whose needs and desires must be permanently identified and must be answered.

When selecting what university to enroll, students mainly want to choose one that will enable them to obtain a diploma that is recognized in society and has degree programs that are modern and allow the acquisition of practically usable knowledge. In other words, students primarily expect study programs that will best prepare them for the business world. After enrollment, it is inevitable to expect the best service, not only from the teaching staff, but also from other staff with whom they come in contact during the study. The interaction with of the administrative staff with students and their service will affect the overall picture of the faculty in the eyes of students, who will spread their voice about the university and thus nurture her image in society. Potential students create an image of a higher education institution on the basis of the information they receive about it and the image that the institution has created in public, and on that basis make a final decision on enrollment.

According to (Stankov, Jovičić & Marjanski Lazić, 2016, pp. 43), the intensification of competition in the higher education market is increasingly emphasizing the importance of the application of service management and service marketing in the systems of management of higher education institutions. In modern society, marketing in education has an extended dimension, such as attracting funding sources, building image of the institution and the like, but with the focus of attracting students (Maringe, Gibbs, 2009, pp. 44).

Marketing orientation implies that the main task of each (educational) institution is to establish the needs and desires of the target markets and to satisfy them through communication, prices and delivery of adequate, competitive and vital programs and services (Glišović, 2003, pp. 250-251). According to Grönroos, the marketing goal should be the development of long-term relationships with students, because they are the most valuable resources of the university (Jurkowitsch, Vignali, Kaufmann, 2006, p. 10) (Gajić, 2011, pp.74). Organizations leveraging on service quality capabilities have reported competitive advantages such as increasing retention and loyalty (Ruyter, 1997; Shemwell, Yavas & Bilgin, 1998; Alexandris, Dimitriadis & Markate, 2002) (Chuah, Sri Ramalu, 2011, pp2). Also, according to (Dimitrijević Lj., Cogoljević M., 2105, pp. 16) the implementation of marketing is helping large and small systems to modernize its appearance and identity on the market.

Numerous studies had been conducted on service quality and customer satisfaction in the marketing/management field for the past 30 years. Despite this development, limited research has been done in education field. Few noticeable research on service quality in higher education institutions are those of Hishamuddin, Azleen, Rahida and Mohd Zulkeflee (2008), Nek Kamal, Azman, Zubrina and Salomawati (2009), and Muhammad, Rizwan and Ali (2010). Findings from these studies reported that student's satisfaction towards services provided by the university is crucial determinants of institutional survival and excellence. Nek Kamal et al. (2009) for instance emphasizes that the proper use of dimensions in service quality in providing services will increases the student's perception towards the value of services. For example, the tangibility of facilities within the institution is important in creating the image of excellence of the institutions (Muhammaed, Rizwan & Ali, 2010). This finding echoed in Landrum (2007) whereby service quality found to be an important element that determines the success of an institution (Chuah, Sri Ramalu, 2011, pp 2).

A high education institution with an adequately designed communication strategy will promote interaction between students and teaching staff, develop relationships based on mutual trust and respect, meet expectations and provide a high level of satisfaction of educational service users. ICTs have made a lot of positive in improving communication, in terms of mass accessibility, time of communication (online, offline), communication speed, possibilities of combining various multimedia forms, ease of communication, and others (Krstić, Skorup, Gavrić, 2018, pp. 56).

The fact is that ICT is one of the fastest growing branches in the world. According to relevant macroeconomic analyzes, ICT was responsible for 50% of productivity growth in the economy in the decade 1994-2004. (Reding, 2008), causing even rapid social changes (Pešikan, 2016, pp. 32). ICT also provides many opportunities to enhance the quality of educational services. Thanks to them, the public has the opportunity to get information on events at the university in a very short time through websites, profiles on social networks, and through mobile applications of higher education institutions.

Modern universities strive to continuously monitor market developments, build relationships with students, invest in marketing research, respond effectively to changes in the environment, and become innovators.

RESEARCH METHODOLOGY

As it was mentioned earlier, the aim of this paper is to examine the ways of modern communication that students from the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac prefer and based on this, to make recommendations for the management of these two higher education institutions in order to (re)define a communication strategy.

The above mentioned survey was conducted by applying the written interviewing technique. A questionnaire in the form of the Likert scale for measuring attitudes has been used (1 - very little extent, 2 - little extent, 3 - some extent, 4 - great extent, 5 - very great extent). With each question, respondents were given the option "other" with the possibility to add their answer. The questionnaire was distributed in direct contact with the respondents. The obtained data were processed, analyzed and interpreted by applying the IBM SPSS Statistics 21 program.

In order to elucidate which communication means students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac use and in what purpose, a research study was conducted on a sample of 214 randomly selected respondents, students from both institutions. The data were being collected from November 2017 to June 2018.

The respondents evaluated to what extent they use certain means of communication, to what extent they use them in private and business communication, for what purpose they use social networks and the usefulness of modern means of communication.

The respondents' answers to the above-mentioned questions were used to test the following three research hypotheses:

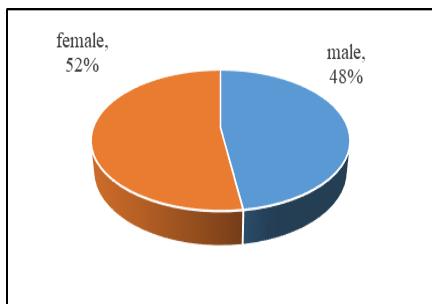
H1: Students have a positive attitude on modern means of communication.

H2: Students have a positive attitude on the use of modern means of communication in formal communication.

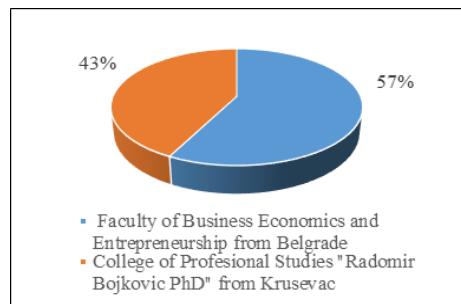
H3: There is a difference in the degree of use of modern means of communication in formal communication between students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac.

In order to test Hypothesis 1 and 2, aimed at analyzing students' opinion about modern communication means, a descriptive analysis was applied. In order to test Hypothesis 3, aimed at analyzing differences between students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac, the independent sample t-test was applied.

The research involved 102 male respondents (47.7%) and 112 female respondents (52.3%), *Picture 1*.



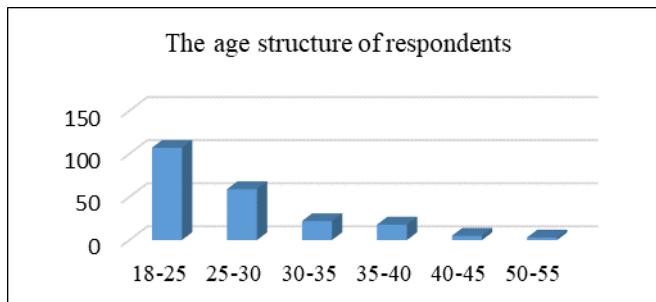
Picture 1. Structure of the sample by gender



Picture 2. Structure of the sample by institution

When it comes to the structure of the sample in relation to the higher education institution in which the respondents are studying, 123 respondents (57%) are students of the Faculty of Business Economics and Entrepreneurship from Belgrade, while 91 respondents (43%) are students of the College of Professional Studies "Radomir Bojkovic PhD" from Krusevac, *Picture 2*.

Half of the total number of respondents (107, ie 50%) belongs to the age structure of 18-25 years, 59 respondents (27.6%) are of age from 25-30 years, 22 respondents (10.3%) from 30-35 years, 18 of them belong to the age structure of 35-40 years, while the smallest number of respondents (5) have 40-45 years (2.3%) and 50-55 years of age (3 respondents, ie 1.4%), *Picture 3*.



Picture 3. The age structure of the sample

DISCUSSION OF RESEARCH FINDINGS

This chapter gives detailed results of the research, which include the respondents evaluation:

- to what extent they use certain modern means of communication,
- to what extent they use them in private communication
- to what extent they use them in formal communication,
- for what purpose they use social networks and
- the usefulness of modern means of communication.

The use of the certain modern means of communication by students

Table 1 presents the data about the central tendency (the mean) and the standard deviation relating to the means of communication students use, for the sample size of N = 214 respondents.

Table 1. Descriptive Statistics: The use of the certain modern means of communication by students

Descriptive Statistics					
Means of communication	N	Minimum	Maximum	Mean	Std. Deviation
Phone	214	1	5	1,56	,869
Mobile phone	214	3	5	4,71	,573
Social networks	214	1	5	4,08	1,104
E-mail	214	1	5	3,74	1,015
Other	214	1	5	1,54	1,042
Valid N (listwise)	214				

The obtained results show that respondents to a great extent use mobile telephony as a means of communication (the average score is 4.71), to a significant extent use social networks (4.08) and e-mail (3.74), while the fixed telephone (1.56) and other means of communication (1.54) use a little, *Table 2*. The respondents did not specify what other means of communication were.

Table 2 accounts for the descriptive statistics, comparing the results for the above mentioned questions of the students of Faculty of Business Economics and Entrepreneurship (FBEE) and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac (CPS).

According to the obtained results, all evaluated means of communication are better rated by the students of the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac.

*Table 2. Descriptive Statistics:
The use of the certain modern means of communication by students (comparing)*

Descriptives					
Means of communication	N	Mean	Std. Deviation	Std. Error	
Phone	FBEE	123	1,50	,843	,076
	CPS	91	1,64	,901	,094
	Total	214	1,56	,869	,059

Mobile phone	FBEE	123	4,66	,612	,055
	CPS	91	4,78	,512	,054
	Total	214	4,71	,573	,039
Social networks	FBEE	123	4,05	1,062	,096
	CPS	91	4,12	1,163	,122
	Total	214	4,08	1,104	,075
E-mail	FBEE	123	3,63	1,066	,096
	CPS	91	3,88	,929	,097
	Total	214	3,74	1,015	,069
Other	FBEE	123	1,41	,848	,076
	CPS	91	1,73	1,239	,130
	Total	214	1,54	1,042	,071

Table 3 reveals the results of the t-test for independent samples. The first part of the table shows the results of Levene's test of the variances equality. The outcome of this test determines whether the t-value is used when the equality of the variance ($Sig > 0.05$) or the t-value is implied, when the equality of the variance ($Sig < 0.05$) is not implied.

The results of the independent sample t-test provided in *Table 3* point out that statistically significant differences exist only in cases where respondents could respond if they use some other means of communication. Respondents did not write their answers to this question.

We can conclude that the statistically significant difference between students of the Faculty of Business Economics and Entrepreneurship and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac regarding the means of communication they use does not exist, the *Table 3*.

*Table 3. Independent Samples Test:
The use of the certain modern means of communication by students*

Independent Samples Test									
Means of communication		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
Phone	Equal variances assumed	,488	,486	-1,110	212	,268	-,133	,120	-,370 ,103
	Equal variances not assumed			-1,099	186,647	,273	-,133	,121	-,372 ,106
Mobile phone	Equal variances assumed	7,871	,005	-1,540	212	,125	-,122	,079	-,277 ,034
	Equal variances not assumed			-1,581	208,724	,115	-,122	,077	-,273 ,030
Social networks	Equal variances assumed	,989	,321	-,471	212	,638	-,072	,153	-,374 ,229
	Equal variances not assumed			-,465	183,795	,642	-,072	,155	-,378 ,234
E-mail	Equal variances assumed	5,388	,021	-1,754	212	,081	-,245	,140	-,520 ,030
	Equal variances not assumed			-1,791	206,296	,075	-,245	,137	-,515 ,025
Other	Equal variances assumed	17,932	,000	-2,234	212	,027	-,319	,143	-,600 ,-,037
	Equal variances not assumed			-2,115	149,886	,036	-,319	,151	-,617 ,-,021

The use of the certain means of communication by students in private communication

Table 4 presents the data about the central tendency (the mean) and the standard deviation related to the means of communication used by respondents in private communication, for the sample size of N = 214 respondents.

Table 4. Descriptive Statistics: The use of the certain means of communication by students in private communication

Descriptive Statistics					
Means of communication	N	Minimum	Maximum	Mean	Std. Deviation
SMS	214	1	5	3,42	1,167
Viber, WhatsApp, Skype, Messenger	214	1	5	4,38	,960
Social networks	214	1	5	3,87	1,209
Email	214	1	5	3,46	1,169
Phone calls	214	1	5	3,84	1,196
Letter	214	1	5	1,26	,708
Other	214	1	5	1,29	,758
Valid N (listwise)	214				

Table 5. Descriptives: The use of the certain means of communication by students in private communication (comparing)

Descriptives					
Means of communication		N	Mean	Std. Deviation	Std. Error
SMS	FBEE	123	3,41	1,108	,100
	CPS	91	3,43	1,248	,131
	Total	214	3,42	1,167	,080
Viber, WhatsApp, Skype, Messenger	FBEE	123	4,27	1,056	,095
	CPS	91	4,53	,794	,083
	Total	214	4,38	,960	,066
Social networks	FBEE	123	3,89	1,216	,110
	CPS	91	3,86	1,207	,127
	Total	214	3,87	1,209	,083
EMail	FBEE	123	3,24	1,229	,111
	CPS	91	3,77	1,012	,106
	Total	214	3,46	1,169	,080
Telephone	FBEE	123	3,82	1,153	,104
	CPS	91	3,87	1,258	,132
	Total	214	3,84	1,196	,082
Letter	FBEE	123	1,22	,684	,062
	CPS	91	1,31	,741	,078
	Total	214	1,26	,708	,048
Other	FBEE	123	1,24	,615	,055
	CPS	91	1,37	,915	,096
	Total	214	1,29	,758	,052

In general, respondents in private communication to a great extent use applications such as Viber, WhatsApp, Skype, Messenger (average score 4.38), and also social networks (average score 3.87) and phone calls (average score 3.84). Respondents to some extent use e-mail (3.46) and SMS (3.42) as a means of communication for private purposes. Other means of communication (1.29), as well as letters (1.26), are not used at all by the respondents, *Table 4*.

Table 5 accounts for the descriptive statistics for all of the questions comparing the scores of the students of the Faculty of Business Economics and Entrepreneurship (FBEE) and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac (CPS). According to the obtained results, it is noticeable that all interrogated means of communication used for private purposes, except when it comes to using social networks, received better scores

from respondents who study at the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac.

Table 6 reveals the results of the t-test for independent samples. The first part of the table shows the results of Leven's test of the variances equality. The outcome of this test determines whether the t-value is used when the equality of the variance ($Sig > 0.05$) or the t-value is implied, when the equality of the variance ($Sig < 0.05$) is not implied.

*Table 6. Independent Samples Test:
The use of the certain means of communication by students in private
communication*

Independent Samples Test									
Means of communication		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
SMS	Equal variances assumed	2,102	,149	-,136	212	,892	-,022	,162	-,341 ,297
	Equal variances not assumed			-,134	180,246	,894	-,022	,165	-,347 ,303
Viber, WhatsApp, Skype, Messenger	Equal variances assumed	11,973	,001	-,1,965	212	,051	-,259	,132	-,519 ,001
	Equal variances not assumed			-,2,049	211,942	,042	-,259	,126	-,508 ,-,010
Social networks	Equal variances assumed		,004	,948	,173	212	,863	,029	,168 ,-,301 ,359
	Equal variances not assumed			,173	194,850	,863	,029	,167	-,301 ,359
EMail	Equal variances assumed	5,216	,023	-,3,379	212	,001	-,533	,158	-,845 ,-,222
	Equal variances not assumed			-,3,478	209,520	,001	-,533	,153	-,836 ,-,231
Telephone	Equal variances assumed	1,882	,172	-,284	212	,777	-,047	,166	-,374 ,280
	Equal variances not assumed			-,280	184,118	,780	-,047	,168	-,378 ,284
Letter	Equal variances assumed	2,087	,150	-,900	212	,369	-,088	,098	-,281 ,105
	Equal variances not assumed			-,889	185,035	,375	-,088	,099	-,284 ,107
Other	Equal variances assumed	7,088	,008	-,1,317	212	,189	-,138	,105	-,344 ,068
	Equal variances not assumed			-,1,245	148,075	,215	-,138	,111	-,357 ,081

The results of the independent sample t-test provided in *Table 6* point out that statistically significant differences exist in questions relating to the use of

applications such as Viber, WhatsApp, Skype, Messenger and e-mail in private communication for the benefit of students of the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac. We can conclude that the students of this institution use the aforementioned means of communication more often in private communication than their colleagues from the Faculty of Business Economics and Entrepreneurship.

THE USE OF THE CERTAIN MEANS OF COMMUNICATION BY STUDENTS IN FORMAL COMMUNICATION

Table 7 presents the data about the central tendency (the mean) and the standard deviation related to the means of communication that respondents use in formal communication, for the sample size of N = 214 respondents.

The results of the research show that students of the Faculty of Business Economics and Entrepreneurship and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac significantly use telephone calls (3.93) and e-mail (average score 3.91) for formal communication. They in some extent use applications such as Viber, WhatsApp, Skype, Messenger (3.07), and also SMS (2.64) and social networks (2.54), while the letter as a means of formal communication is very little used, *Table 7*.

*Table 7. Descriptive Statistics:
The use of the certain means of communication by students in formal communication*

Descriptive Statistics					
Means of communication	N	Minimum	Maximum	Mean	Std. Deviation
SMS	214	1	5	2,64	1,372
Viber, WhatsApp, Skype, Messenger	214	1	5	3,07	1,427
Social networks	214	1	5	2,54	1,484
Email	214	1	5	3,91	1,286
Phone calls	214	1	5	3,93	1,254
Letter	214	1	5	1,54	1,033
Other	214	1	5	1,36	.860
Valid N (listwise)	214				

Table 8 accounts for the descriptive statistics for all of the questions between the students of Faculty of Business Economics and Entrepreneurship (FBEE) and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac (CPS). According to the obtained results, it can be concluded that only phone calls and letters as a means of communication for formal purposes received greater scores from respondents who are studying at the Faculty of Business Economics and Entrepreneurship, while other formal communication

tools were better rated by students of the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac, *Table 8*.

*Table 8. Descriptive Statistics:
The use of the certain means of communication by students in formal communication (comparing)*

Descriptives					
Means of communication		N	Mean	Std. Deviation	Std. Error
SMS	FBEE	123	2,57	1,368	,123
	CPS	91	2,75	1,379	,145
	Total	214	2,64	1,372	,094
Viber, WhatsApp, Skype, Messenger	FBEE	123	3,02	1,443	,130
	CPS	91	3,14	1,411	,148
	Total	214	3,07	1,427	,098
Social Networks	FBEE	123	2,46	1,439	,130
	CPS	91	2,66	1,544	,162
	Total	214	2,54	1,484	,101
EMail	FBEE	123	3,78	1,352	,122
	CPS	91	4,08	1,176	,123
	Total	214	3,91	1,286	,088
Telephone	FBEE	123	3,94	1,263	,114
	CPS	91	3,90	1,248	,131
	Total	214	3,93	1,254	,086
Letter	FBEE	123	1,56	1,103	,099
	CPS	91	1,52	,935	,098
	Total	214	1,54	1,033	,071
Other	FBEE	123	1,29	,776	,070
	CPS	91	1,46	,958	,100
	Total	214	1,36	,860	,059

Table 9 reveals the results of the t-test for independent samples. The first part of the table shows the results of Levene's test of the variances equality. The outcome of this test determines whether the t-value is used when the equality of the variance ($Sig > 0.05$) or the t-value is implied, when the equality of the variance ($Sig < 0.05$) is not implied.

Table 9. Independent Samples Test: The use of the certain means of communication by students in formal communication

Independent Samples Test										
Means of communication		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
SMS	Equal variances assumed	,020	,887	-,939	212	,349	-,178	,190	-,552	,196
	Equal variances not assumed			-,938	193,160	,350	-,178	,190	-,553	,197
Viber, WhatsApp, Skype, Messenger	Equal variances assumed	,455	,501	-,641	212	,523	-,127	,198	-,516	,263
	Equal variances not assumed			-,643	196,411	,521	-,127	,197	-,515	,262
Social Networks	Equal variances assumed	,860	,355	-,994	212	,321	-,204	,205	-,609	,200
	Equal variances not assumed			-,984	186,138	,326	-,204	,207	-,613	,205
EMail	Equal variances assumed	5,679	,018	-1,674	212	,096	-,296	,177	-,645	,053
	Equal variances not assumed			-1,710	206,458	,089	-,296	,173	-,638	,045
Telephone	Equal variances assumed	,005	,947	,242	212	,809	,042	,174	-,300	,384
	Equal variances not assumed			,242	195,353	,809	,042	,173	-,300	,384
Letter	Equal variances assumed	,630	,428	,311	212	,756	,044	,143	-,238	,327
	Equal variances not assumed			,319	207,999	,750	,044	,140	-,231	,320
Other	Equal variances assumed	7,145	,008	-1,423	212	,156	-,169	,119	-,403	,065
	Equal variances not assumed			-1,379	169,163	,170	-,169	,122	-,410	,073

A statistically significant difference is not noticeable in any of the observed means of formal communication communication, $\text{Sig} > 0.05$, *Table 9*.

THE USE OF SOCIAL NETWORKS BY STUDENTS

Table 10 presents the data about the central tendency (the mean) and the standard deviation related to the purpose of using social networks by the respondents, for the sample size of $N = 214$ respondents.

Table 10. Descriptive Statistics: The use of social networks by students

Descriptive Statistics					
The purpose of using social networks	N	Minimum	Maximum	Mean	Std. Deviation
New acquaintances	214	1	5	2,43	1,290
Contact with friends	214	1	5	4,17	1,063
For formal purposes	214	1	5	2,70	1,344
Tracking social events	214	1	5	3,31	1,314
Tracking celebrities	214	1	5	2,06	1,205
Other	214	1	5	1,36	,848
Valid N (listwise)	214				

The research results show that students of the Faculty of Business Economics and Entrepreneurship and of the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac to a significant extent use social networks for making contacts with friends (average score is 4.17). They use them in some extent to track social events (3.31) and for formal purposes (2.70), and in small extent to make new contacts (2.43) and to track celebrities (2.06), *Table 10*.

Table 11 accounts for the descriptive statistics for all of the questions between the students of the Faculty of Business Economics and Entrepreneurship (FBEE) and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac (CPS).

Table 11. Descriptive Statistics: The use of social networks by students (comparing)

Descriptives									
The purpose of using social networks		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
New acquaintances	FBEE	123	2,37	1,197	,108	2,16	2,59	1	5
	CPS	91	2,49	1,409	,148	2,20	2,79	1	5
	Total	214	2,43	1,290	,088	2,25	2,60	1	5
Contact with	FBEE	123	4,14	1,035	,093	3,95	4,32	1	5

friends	CPS	91	4,22	1,104	,116	3,99	4,45	1	5
	Total	214	4,17	1,063	,073	4,03	4,32	1	5
For formal purposes	FBEE	123	2,62	1,352	,122	2,38	2,86	1	5
	CPS	91	2,81	1,333	,140	2,54	3,09	1	5
	Total	214	2,70	1,344	,092	2,52	2,88	1	5
Tracking social events	FBEE	123	3,27	1,355	,122	3,03	3,51	1	5
	CPS	91	3,36	1,261	,132	3,10	3,63	1	5
	Total	214	3,31	1,314	,090	3,13	3,49	1	5
Tracking celebrities	FBEE	123	2,09	1,228	,111	1,87	2,31	1	5
	CPS	91	2,01	1,178	,124	1,77	2,26	1	5
	Total	214	2,06	1,205	,082	1,89	2,22	1	5
Other	FBEE	123	1,30	,768	,069	1,16	1,44	1	5
	CPS	91	1,43	,944	,099	1,23	1,63	1	5
	Total	214	1,36	,848	,058	1,24	1,47	1	5

According to the obtained results, it can be concluded that all the examined reasons for the use of social networks, apart from the issues related to the use of social networks for tracking celebrities, were evaluated with higher scores by respondents who study at the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac, *Table 11*.

Table 12 reveals the results of the t-test for independent samples. The first part of the table shows the results of Levene's test of the variances equality. The outcome of this test determines whether the t-value is used when the equality of the variance ($Sig > 0.05$) or the t-value is implied, when the equality of the variance ($Sig < 0.05$) is not implied.

Table 12. Independent Samples Test: The use of social networks by students

Independent Samples Test										
The purpose of using social networks		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
New acquaintances	Equal variances assumed	4,028	,046	-,675	212	,500	-,121	,179	-,473	,231
	Equal variances not assumed			-,659	174,944	,511	-,121	,183	-,482	,241

Contact with friends	Equal variances assumed	,005	,945	-,554	212	,580	-,082	,147	-, ,372	,209
	Equal variances not assumed			-,549	186,8 55	,584	-,082	,149	-, ,375	,212
For formal purposes	Equal variances assumed	,202	,653	1,05 1	212	,294	-,195	,186	-, ,562	,171
	Equal variances not assumed			-, 1,05 3	195,6 00	,293	-,195	,185	-, ,561	,170
Tracking social events	Equal variances assumed	,982	,323	-,518	212	,605	-,094	,182	-, ,453	,264
	Equal variances not assumed			-,524	201,2 08	,601	-,094	,180	-, ,449	,261
Tracking celebrities	Equal variances assumed	,768	,382	,470	212	,639	,078	,167	-, ,251	,408
	Equal variances not assumed			,473	198,2 96	,637	,078	,166	-, ,249	,406
Other	Equal variances assumed	4,47 2	,036	1,09 1	212	,277	-,128	,117	-, ,359	,103
	Equal variances not assumed			-, 1,05 8	169,5 67	,292	-,128	,121	-, ,366	,111

A statistically significant difference is not noticeable in any of the observed purposes of using social networks, $\text{Sig} > 0.05$, table.

THE USEFULNESS OF MODERN MEANS OF COMMUNICATION

Table 13 presents the data about the central tendency (the mean) and the standard deviation related to the respondents attitude to the usefulness of modern (electronic) means of communication, for the sample size of $N = 214$ respondents.

Table 13. Descriptive Statistics: The usefulness of modern means of communication

Descriptive Statistics					
The usefulness of modern means of communication	N	Minimum	Maximum	Mean	Std. Deviation
Useful and facilitate communication	214	1	5	4,40	,831
Useful, but distancing people	214	1	5	3,89	1,135
Other	214	1	5	1,19	,630
Valid N (listwise)	214				

The results show that most respondents, from both observed higher education institutions, stated that modern (electronic) communication means are useful and facilitate communication (the average score is 4.40). They also stated that modern communication means are useful, but they are distancing people (a slightly lower score of 3.80 which we can also describe "to a significant extent" because the value is close to 4). Respondents in the "other" field did not provide any other opinion about the (un)usefulness of modern means of communication, *Table 13.*

Descriptives									
The usefulness of modern means of communication		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Useful and facilitate communication	FBEE	123	4,37	,871	,079	4,21	4,52	1	5
	CPS	91	4,44	,778	,082	4,28	4,60	2	5
	Total	214	4,40	,831	,057	4,29	4,51	1	5
Useful, but distancing people	FBEE	123	3,89	1,144	,103	3,69	4,10	1	5
	CPS	91	3,89	1,130	,118	3,65	4,13	1	5
	Total	214	3,89	1,135	,078	3,74	4,05	1	5
Other	FBEE	123	1,17	,623	,056	1,06	1,28	1	5
	CPS	91	1,21	,641	,067	1,08	1,34	1	5
	Total	214	1,19	,630	,043	1,10	1,27	1	5

Table 14 accounts for the descriptive statistics for all of the questions related to the usefulness of modern means of communication between the students of Faculty of Business Economics and Entrepreneurship (FBEE) and the College of Professional Studies "Radomir Bojkovic PhD" from Krusevac (CPS).

Table 14. Descriptive Statistics: The usefulness of modern means of communication (comparing)

Students of the College of Professional Studies "Radomir Bojkovic PhD" from Krusevac stated that modern (electronic) means of communication are useful and facilitate daily communication (4.44). On the other hand, their attitude is equal with colleagues from the Faculty of Business Economics and Entrepreneurship as for the statement that modern means of communication were useful, but that led to the distancing of people (3.89), *Table 14*.

Table 15 reveals the results of the t-test for independent samples. The first part of the table shows the results of Levene's test of the variances equality. The outcome of this test determines whether the t-value is used when the equality of the variance ($Sig > 0.05$) or the t-value is implied, when the equality of the variance ($Sig < 0.05$) is not implied.

Table 15. Independent Samples Test: The usefulness of modern means of communication

Independent Samples Test										
The usefulness of modern means of communication		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Useful and facilitate communication	Equal variances assumed	1,251	,265	-,640	212	,523	-,074	,115	-,301	,153
	Equal variances not assumed			-,651	204,582	,516	-,074	,113	-,297	,149
Useful, but distancing people	Equal variances assumed	,000	,997	,027	212	,979	,004	,157	-,306	,314
	Equal variances not assumed			,027	195,365	,979	,004	,157	-,306	,314
Other	Equal variances assumed	,487	,486	-,436	212	,663	-,038	,087	-,210	,134
	Equal variances not assumed			-,434	190,946	,665	-,038	,088	-,211	,135

A statistically significant difference is not noticeable in any research on the usefulness of modern (electronic) communication means, $Sig > 0.05$, *Table 15*.

CONCLUSION

Educational institutions today are focused on the satisfaction of students seeking to improve their offer in order to attract as many users. Creating satisfied users - whether they are students, their parents, donors, professors or employers "should be the primary goal that will contribute to quality in educational institutions" (Rodić, 2011, pp. 192). Therefore, higher education institutions should continuously work on improving the quality of service and building relationships with students in order to make the institution efficient in order to achieve student satisfaction. An unsatisfied student will easily decide to leave the college and will most likely spread the negative picture further about the college, while on the other hand, a satisfied student will be the best promoter of that institution among potential students and remain loyal to the institution until the end of the education cycle.

The authors of this paper especially dealt with the question of the impact of the application of modern ICT used in communicating with students on their satisfaction with the educational service. The theoretical aim of the research conducted by the authors of this paper among students is to indicate the modules of modern ICT-based communication that students apply. The social aim of the research is to help higher education institutions, primarily the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac, in redefining the strategy of communication to the current trends of modern society, and to give recommendations for communication with students in order to improve the level of their satisfaction, create a positive image and improve the business.

In order to elucidate which communication means students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac use and in what purpose, a research study was conducted on a sample of 214 randomly selected respondents – students from both institutions. The data were being collected from November 2017 to June 2018.

The respondents evaluated to what extent they use certain means of communication, to what extent they use them in private and business communication, for what purpose they use social networks and the usefulness of modern means of communication.

The results of the research show that mobile phones, social networks and e-mails are mostly used as a means of communication by the respondents, while the least-used is wired telephone.

In private communication, students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac are mostly using applications such as Viber, WhatsApp, Skype, Messenger etc., and social networks and phone calls, while the letters are least used. Students of the College of Profesional Studies

"Radomir Bojkovic PhD" from Krusevac are using applications such as Viber, WhatsApp, Skype, Messenger and e-mail in private communication in greater extent than their colleagues from another observed higher education institution.

In formal communication, respondents mostly use e-mail and phone calls, while the letter is used the least. Respondents are mostly using social network for making contacts with friends and tracking social events, and at the very least for tracking celebrities. Respondents believe that modern means of communication are useful and facilitate daily communication, but also consider that they have also greatly led to distancing of people.

The respondents' answers were used to test the three research hypotheses.

The **first hypothesis** that stated that students have a positive attitude on modern means of communication was confirmed, as the respondents stated that modern means of communication are significantly useful because they facilitate the daily communication of people.

As for the **second hypothesis** that stated that students have a positive attitude on the use of modern means of communication in formal communication, it is also confirmed. Respondents said that from the modern means of communication for formal purposes they mostly use telephone calls and email, and then Viber, WhatsApp, Skype, Messenger, SMS and social networks. Given that the presented results of the research clearly show that the use of the wired telephone by the respondents is little, obviously the telephone calls refer to the use of the mobile phone, which belongs to modern means of communication.

The **third hypothesis** which stated that there is a difference in the degree of use of modern means of communication in formal communication between students of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Profesional Studies "Radomir Bojkovic PhD" from Krusevac was rejected. The reason was that a statistically significant difference in the use of modern means of communication for formal purposes among students of the mentioned higher education institutions does not exist.

Given that there is no statistically significant difference between attitudes of student of these two higher education institutions, **recommendations to the management of institutions in defining a communication strategy in order to increase the level of student satisfaction can be also common.**

In communication of higher education institutions with their students **phone calls** and **emails** should be used. The fact that students are pretty much using applications such as Viber, WhatsApp, Skype and Messenger in formal communication, higher education institutions should consider using these applications for **creating groups** and informing students via **group messages**. The other recommendation is to consider launching an **mobile application** that students can install on their mobile phones and follow important notifications from the higher education institution. Sending **SMS messages** is also an

acceptable way of communicating with students, as well as through **social networks**.

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ANALYSIS OF ATTITUDES ABOUT THE USE OF INFORMATION TECHNOLOGIES AND INTERNET MARKETING WITHIN DIFFERENT PROMOTIONAL STRATEGIES

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ABSTRACT

Fast, rapid social changes are based on the changes in modern technologies as one of the most important development potentials. Modern technologies represent an important support in the field of business, as well as within overall marketing activities. The integration of the Internet with the traditional postulates of the marketing concept causes the creation of its new form – online marketing. Its continuous development constantly creates new possibilities available for marketers in the process of communication with the target market. Online marketing can be considered as a separate part, but also as a link that improves and connects all the existing elements of the marketing communication mix. Users' reactions represent the main indicative of promotional activity success because the consumers are the centre of attention in marketing. All people are different, therefore their behaviour towards certain types of influencing them will also be different, and this is very important information for the marketer in the creation of the appropriate promotional strategies. The aim of this paper is to point out the role and position of marketing based on the modern IT, as well as the results of the research on the relations and attitudes of the young people to online marketing promotion usage of different types, realised through mobile phones, emails, social networks, Web sites, blogs, forums and discussion groups.

Key words: Marketing, Online Marketing, Internet, IT, Promotion

JEL Classification: M30, M31

INTRODUCTION

The changes in technology have become one of the most striking features of the modern world. They are constantly created and implemented even faster

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in various areas of society, thus becoming one of the main determinants in people's lives, the ways of doing business and its success. It is important to understand that nothing has remained the same; there is nothing unchangeable over a longer period of time. Nothing is progressive enough except at the moment of its appearance, and there is a constant tendency to improve the existing and eliminate the identified deficiencies. The focus on development and acceptance of technological solutions reflects the attitude of the society to itself, its future and further development. However, without a man no technology can be created, used or improve further. Man has always been the central figure in the advance of technology, and the key element of its humanization. Technologies change, but essentially, people remain the same. The tendency to discover something unknown and create something that has never existed before is the essence of mankind, the point of its constant search and realization about the meaning of life. Still, it is wrong to say that only man influences technology because, in return, the technology also influences people. Thinking about technology improvement, people actually improve themselves.

It is also possible to observe the influence of modern information and communication technologies through marketing activities in the field of business, especially if it is additionally connected to the Internet technologies. Online marketing is one of the most important factors of the modern communication mix, and at the same time, it is a carrier of changes in the field of complete marketing. The users' opinion, the opinion of marketers, as well as consumers, represents the key for determination of influence it may have, primarily caused by the attitudes of the potential consumers have on its certain varieties. Unless the consumers accept some of the technological solutions applicable in marketing, they will remain only that - the solutions rarely used - even within the marketing activities.

According to the research (Statistical Office of the Republic of Serbia, 2017), the Internet is present among the population in the territory of the Republic of Serbia to a large degree, which leaves a lot of space for application of online marketing tools. This is the reason to establish the type of relations the individuals have towards various forms of the Internet promotion in order to adjust the above mentioned to the characteristics of the target audience even better.

This paper will analyse marketing promotion from the aspect of integration with the modern technologies, especially from the position of its most famous forms and characteristics that distinguish it. The results of research on the frequency of information and communication technologies usage for gathering information on the existing or new products/services will be added to the above information, as well as the attitudes about these forms and purchase after the information/promotion conducted in this way.

The subject of this paper is the analysis of the modern information technologies' role in marketing promotional activities through the observation of

their position in relation to other “traditional media”, determination of contact frequency between young consumers and marketers, the frequency of usage by consumers, the attitude of the young and the frequency of purchase completion following this type of informing/promotion.

The aim of this paper is to establish the form of information/promotion through modern information technology with the largest potential for successful acting from the aspect of the young.

The tasks arising from the above mentioned aim are to establish:

- The frequency of marketers' contacts with the respondents through the analyzed forms of promotion (phone calls, messages, social networks and email),
- The frequency of using the analyzed forms of technology for information about the existing or new products/services,
- The attitude of the young towards the analyzed forms of informing and promotion,
- The frequency of purchase following the informing/promotion conducted in the analyzed manner.

The comparison of the results on technology tools used for promotional purposes received from the performance of the above mentioned tasks creates the conditions for achieving the aims of this paper.

The main hypothesis of this paper is:

- The websites and social networks stand out from other modern types of promotion based on the usage frequency, positive attitudes and influences on decision making about purchase among the young.

The supporting hypothesis is:

- The Internet is the main media where the young usually look for information.

The main contribution of this paper is reflected in information gathering about the attitude of the young people from the city of Čačak territory (Moravica District, the Republic of Serbia) towards the usage of the analysed technological tools for promotional purposes (both online as well as offline), which will enable the adjustment of the additional marketers' activities to the characteristics of this consumer market segment in the field of marketing.

MARKETING PROMOTION

Company's business orientation based on consumers, also well-known as marketing concept, represents one of the main characteristics that lead to business success in modern world. The variety of marketers' promotional activities offers a lot of opportunities to create the appropriate access to the target market by choosing certain activities or their mutual combination. The

inclusion of modern IT is increasingly present nowadays in these processes, therefore becoming an essential part of the marketing concept itself.

Within the marketing mix, the promotion represents an element directly connected to and based on communication as a set of activities. Marketing Communications (MarCom) are coordinated promotional messages and related media used to communicate with a market. Marketing communications messages are delivered through one or more channels such as print, radio, television, direct mail, and personal selling. (American Marketing Association, <https://www.ama.org/resources/Pages/Dictionary.aspx?dLetter=O>, 10th April, 2018.). On the other hand, Perreault and McCarthy state that “promotion is communicating information between seller and potential buyer or others in the channel to influence attitudes and behaviour” (Perrault, McCarthy, 2002, p. 392).

The diversity that distinguishes promotion leaves a lot of opportunities for designing and application of numerous creative strategies in the field of promotion. They are based on the forms that imply direct contact with the buyers, as well as the approach to the large public, so called mass promotion. If we start from the classic forms of communication defined by Kotler and Armstrong (2012, p. 408) (advertising, sales promotion, personal selling, public relations, direct marketing) or Perrault and McCarthy (2002, p. 393) (personal selling, mass selling – advertising and publicity, and sales promotion), over new, improved forms and criteria for classification, promotion has always been and it still remains the element of the marketing mix which largely influences the perception of the target market, and the perception is everything in marketing.

Garabinovic and Nikitovic (2017, pp. 81-102) conducted the research on the sample of 171 respondent (employed people, managers, owners/founders) on the use of marketing mix tools in business entities in the Moravica District in the Republic of Serbia (the same area used for the research in this paper), where, among other things, the forms of promotional activities were analyzed. The results showed that in case of micro enterprises personal selling was most often represented (89.66%), followed by direct marketing (20.69%), advertising (2.30%), public relations and publicity (1.15%), no answer (6.90%). Personal selling was also in the first place in case of small enterprises (75. 93%), followed by advertising (33.33%), direct marketing (25.93%), selling improvement (18.52%), events and experiences (7.41%), public relations and publicity (3.70%), no answer (3.70%). Personal selling is also well-positioned among the respondents from medium enterprises (55.00%), but there is an important application of advertising (50.00%), selling improvement (40.00%), direct marketing (30.00%), while events and experiences (5.00%) are least represented. Personal selling is also most often represented among the respondents from large enterprises (66.67%), while advertising is present among the third (33.33%). As we can see, personal selling is in the first position among

the respondents from all business entities regardless of the size (micro, small, medium or large) with over 50% share, regardless of the fact whether we speak of classical or the type adapted to the new technology usage.

Sheth and Sisodia describe a new concept called 4A: “The 4A framework is a tool that helps marketers align their actions with the four essential values sought by customers. These values can be summarized as: Acceptability, Affordability, Accessibility and Awareness” (Sheth, Sisodia, 2012, p. 14).

The integration of the Internet in the above mentioned activities, as one of the most prominent representatives of the information and communication technologies, leads to the creation of a new, improved marketing communication mix.

INTERNET MARKETING AND ITS TYPES

The Internet represents one of the key factors in all types of promotion, including marketing as a whole, but it is also considered as a separate part in the set of all marketing activities due to its great importance which is distinguished primarily through the constant changes it has caused or it will cause in the future. This is the way to create a new marketing model also known as Internet, online, digital or electronic marketing.

Online or Internet marketing is a ‘term referring to the Internet and e-mail based aspects of a marketing campaign. It can incorporate banner ads, e-mail marketing, search engine optimization, e-commerce and other tools’ (American Marketing Association, <https://www.ama.org/resources/Pages/Dictionary.aspx?dLetter=O>, 10th April, 2018). Constantinides analyses Web-marketing mix which, unlike the classic 4P also includes 4S, and they are:

- Scope (strategic issues),
- Site (operational issues),
- Synergy (integration into the physical processes) and
- System (technical issues) (Constantinides, 2002, pp. 57-79).

Kotler et al (2017, p. 50) speak of the following when they compare traditional and digital marketing “the concept of marketing mix has evolved to accommodate more customer participation. Marketing mix (the four Ps) should be redefined as the four Cs (co-creation, currency, communal activation, and conversation)”. The relationship between traditional and digital marketing can be seen in the following picture 1.



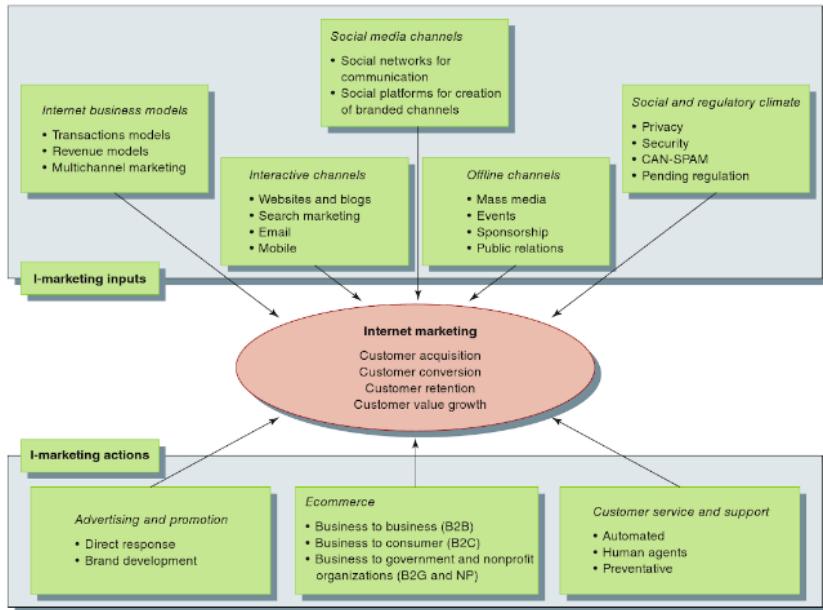
Picture 1. The Interchanging Roles of Traditional and Digital marketing

Source: Kotler et al, 2017, p. 52

Various types are included within the online marketing, most often connected to Search Engine Optimization (SEO), social media usage, e-mail marketing, Websites, internet advertising, as well as, according to (Fáilte Ireland, National Tourism Development Authority, 2012, p. 20) increasingly present other types, Location Based Check-ins and Mobile Marketing included. Živadinović, Medić and Radovanović (2015, p. 185) point out online marketing communication, online advertising (banners) and electronic mail as the methods most often used in advertising on the Internet (Web). According to Jevremović, Šrbac Savić and Staletić (2017, pp. 185-192), digital marketing includes:

- The application of digital technologies which create online channels in the market: web, e-mail, database, mobile telephony and digital television.
- Marketing activities support, with the aim of achieving a profitable customer acquisition and retention, within a multicultural process of purchase and users' lifecycle.
- Marketing tactics realization through the application of digital technologies with the aim of reaching, transfer and retention of customers in online services, through electronic and traditional communication (Jevremović, Vasić, Šrbac Savić, Staletić, 2017, pp. 185-192).

The Internet marketing scope display with its inputs and actions can be seen in the following Picture (picture 2).



Picture 2. The Internet Marketing Paradigm

Source: Roberts, Zahay, 2013, p. 11, © Cengage Learning 2013

Conducting marketing activities on the Internet brings along a lot of new opportunities that could not have been imagined before the appearance of this communication media. The usage of the Internet creates a new basis for the access to almost limitless public, the market which represents the whole world. Everyone with the access to the Internet represents a potential individual the promotional message can be directed to, regardless of the type of connection. This is the situation where the strict division into local and globally present companies ceases to exist so the key issue becomes who and to what extent people use the Internet, or who does not do that at all. We could say that the usage of both classic and new types of marketing is the best solution, targeting the entire target market in this way, regardless of the fact whether it is inclined or not to modern technology usage.

The usage of online marketing could be far more acceptable way for consumers to inform themselves if compared to the other types (phone calls, personal selling, TV, radio and newspaper advertising, etc.), especially for the reason of it being conducted at the most suitable moment for the individual consumer. The absence of persuasion on behalf of the salespeople, as well as the need for some purchase, e. g. newspapers, is also a good side of this type of promotion. To put it briefly, constant availability and fast communication make it easier to establish the contacts between a marketer and a consumer.

Database marketing in the Internet technology age has become an inevitable part of the entire business activities. Easier data collecting and processing create the conditions where it is possible to choose the message recipients with the best characteristics, as well as adjust the existing according to the preferences of certain groups, or even individuals. The involvement of consumers in the processes of product creation and other marketing mix elements through the new technologies is becoming increasingly represented, thus emphasizing the growing importance of the consumers' role in the "company's life" through so called consumer concept. The presence of the consumer relations marketing as well as marketing permits is also increasing.

The absence of the physical contact is often stated as one of the main negative aspects of online marketing. Despite the fact that it is possible to establish the direct communication and individual focus through modern technologies, face-to-face communication will never completely disappear. It is the essential part of human personality. We can make a comparison here between these in the field of online education. Namely, Bester and Brand (2013, pp. 1-15) state that no technology is able to replace the teacher in the classroom. On the other hand, Randelović, Papić and Blagojević (2017, pp. 229-238) state that "technology, however, can be successfully integrated into lessons which could maximize the learning experience since technology has become an integral part of the life world of today's learners". In this respect, the analysis by Garabinović and Marković Blagojević (2016, pp. 94-95) state that computer, multimedia resources and other ICT tools usage is one of the main characteristics of the modern system of education as opposed to the traditional one, but through the realization of the interactive communication between the teachers and their students.

On the basis of its global character and a large amount of information it possesses, the Internet can sometimes be very confusing and "heavy" for its users. The appropriate information should be chosen from the abundance, and danger lurks around every corner. The issue of safety is therefore one of the key issues that still represents the main obstacle in its wider usage, in addition to the existence of a certain number of the Internet non-users.

WEBSITE PROMOTION

Websites are very important for promotion, and they are some of the key elements of online marketing. Kotler and Keller (2006, p. 613) think that the website quality evaluation should be primarily based on (1) easy usage (easy loading, understandable homepage, easy transfer to other pages and their fast loading), and (2) physical attraction (each page is clear and it is not "overloaded" with various content, font size and type make it easy to read the text, the colours are consistent, as well as the sound). Rayport and Jaworski (2001, p. 116) think that there are 7 elements that form the basis of the website effectiveness, and their common feature is C as the first letter. Based on the

above, website 7Cs are: context, content, community, customization, communication, connection, commerce. Tedeschi (2002, p. C8), as well as Kotler and Keller (2006), also states an addition to the above mentioned 7 elements which is extremely important in the modern condition of doing business, and that is constant change.

Šarac, Jevremović and Radovanović (2015, pp. 129-131) emphasize the usage of discussion groups, e-mail communication (newsletters), surveys, polls and loyalty programs as the techniques of visitor (consumer) retention. They are very important if there is a desire to keep the contact with the consumers because it is more important to know how to keep your consumers than how to encourage them to make just one purchase. There is a need of trying to establish the long-term relationships with the consumers because they lead to loyalty.

Blogs are distinguished as a specific type of websites. A blog is “a website comprising blog posts, or content written by the blogger, which are typically organized into categories and sorted in reverse chronological order”, while bog posts are “the individual items posted to the blog (using blogware) by the blogger” (Wright, 2006, p. 7). There is often a possibility to comment in blogs, which leaves a possibility to gain feedback from the visitors (readers). Živadinović, Medić and Radovanović (2015, p. 189) state the basic reasons for every company to have its blog:

- Blog directs the turnover towards the company's main pages;
- Blog provides a better product sale or service placement;
- Blog enables the achievement of the additional income from advertising;
- Blog helps the organization to approach the target audience and understand the users' needs in a better way. (Živadinović, Medić, Radovanović, 2015, p. 189).

Wright (2006, pp. 71-72) states the ways of blog usage based on the answers to Arieanna Foley of Blogaholics, considering them as external (communication, marketing, e-mail newsletter support, FAQ section, industry news opinion, service updates, public feedback, customer service, public relations, viral marketing, community building, sales mechanism, brand loyalty – a human face, buying behaviour, etc.) and internal (knowledge management and sharing, administrative tool, internal document review, collaboration, idea archiving, internal dialogue, etc.). As we can see, blogs represent one of the tools for desired consumer category targeting, but the question remains to what extent they really read the blogs.

Šarac, Jevremović and Radovanović (2015, p. 72) think that the benefits of using blogs as an integral part of Internet marketing include the following:

- Easy information distribution
- Connections with the users
- Establishing a higher level of consumers' trust
- Official company follow-up

- Possibility of attracting the users with a lack of trust
- Improved communication with the users, easier market research
- Increased visibility and interest
- Market pulse tracking
- Increased visibility and flow
- Contextual communication

The same authors emphasize the traps of blog usage in marketing activities on the Internet, and they are:

- Insincere and marketing blog usage
- False statements
- Fake blogs
- False transparency and comments
- Irregular updates, information posts, replies to comments
- Variability of article, text and research quality
- Hasty actions
- Representative individuals (Šarac, Jevremović, Radovanović, 2015, pp. 72-73).

As we can see, blogs represent one of the ways for marketers to follow in their Internet marketing strategy design, while the positive and negative sides inherent to blogs should be taken into consideration, observed together with the characteristics of the audience for which the appropriate message is desired to be sent in this way.

E-MAIL MARKETING

E-mail marketing is, in fact, a modern way of mail usage in order to reach the potential consumers. It includes e-mail usage as an Internet service, with the aim of marketing promotion for the users who own their email addresses. According to Kotler and Keller (2006, p. 607), if we consider email as an integral part of direct mail marketing, it is possible to connect it to the phases that direct mail undergoes, increasing gradually the answer probability: intensive bombardment, database marketing, interactive marketing, personalized marketing in real time and life values marketing. Based on that, an increasing number of marketers advocate the point of view known as permission marketing in order to increase the probability of the message being read and replied to, not understood as a spam. “Permission marketing - an interactive marketing technique which uses e-mail to advertise and sell to individuals, but only with their express permission” (Yadin, 2002, p. 282). E-mail newsletter registration has thus become a way of delivering latest information on company's business and products/services it offers to the interested parties in a timely manner. That could also be a good way of staying in touch with the consumers through reminders, as well as encouraging them to visit the seller in a store or on a website.

Mullen and Daniels (2014, pp. 6-14) analyze five types of e-mails which can be used in a promotional campaign: awareness, consideration, conversion, usage and loyalty, also stating these five critical elements of every email – creating brand impact, adding intelligence to your design, driving the purchase, creating transactional/service messages, and adding viral marketing elements (Mullen, Daniels, 2014, pp. 17-37).

Some of the functions e-mail marketing tools can provide (and this is not an exhaustive list) include:

- Easy-to-use tools that let you create and work from e-mail templates without having to be a technical expert;
- Testing tools that allow you to check that your message will make it past major spam filters;
- Tracking tools that show how many people have ignored, opened or responded to your email (more about this is mentioned in detail towards the end of the chapter);
- Personalization tools that let you modify the content dynamically to individuals or specific target profiles on your list (Ryan & Jones, 2009, p. 135).

SOCIAL NETWORK MARKETING

One of the most important parts of online marketing is certainly social network marketing. Social networks represent one of the basic ways of communication among people, especially when we consider younger generations, but by itself, they are nothing new, only a way of information exchange that has always existed improved by the Internet technologies. Social network advertising is very common and often used, especially because of the possibility to specifically determinate the characteristics of users to whom the information will be sent/displayed. There is also a possibility to enable direct message sending from a company to the interested users, based on their registration as followers, thus making them a part of the company's "family". Gambhir makes a difference between the traditional, digital and social media marketing, where, among other things, he states that in case of social media, marketing mix 4P has a different meaning:

- People
- Platform
- Participation
- Promotion (Gambhir, 2011).

Some of the differences between the traditional and multimedia communications could be seen in the following table 1.

Table 1. Differences between traditional and multimedia communications

Traditional	Multimedia
One-way communication	Two-way communication
Focus on fixed media	Focus on flow – the clickstream
Producer initiates	User initiates
Channel costs high	Bandwidth costs high
Appeals to customer self-image	Customer as part of community
'Tell/sell'	'Link/think'
Large companies	All sizes

Source: Stone, Desmond, 2007, p. 381

Tomše and Snoj (2014, pp. 131-138) emphasize the role of social networks as one of the most important elements of online marketing, considering the most significant differences between the traditional means of communication and their modern forms on social networks with the focus on the times of crises. They state lower costs as one of the main positive characteristics of this type of promotion as the advantages of social network marketing usage. Social networks also offer various options of advertising as a paid form of communication (such as banners, sponsored links, etc.), but most of them offer completely free options, for example, Facebook and Twitter profiles, blog writing and/or taking part in other authors' blogs, taking part in forums, posting videos on YouTube, etc. The possibilities of complete viral marketing strength usage and its global orientation are just some of the conveniences of this form of communication (Tomše, Snoj, 2014, pp. 131-138).

Jevremović, Vasić, Šrbac Savić and Staletić (2017, pp. 185-192) conducted a research of the Internet usage level as an important prerequisite for digital marketing usage, the Internet usage thorough portable devices, as well as the level of social network usage on a sample of 156 individuals aged 15-21 in the form of a questionnaire for the analysis of digital marketing influence through social media. For 98% of respondents aged between 15 and 21 regardless of gender, everyday usage of the Internet represents the satisfaction of the basic needs and largely facilitates performing everyday life activities. A very high percentage of the respondents use the Internet on portable devices every day or almost every day (63.71%). The research also shows that the respondents of this age group use social networks on daily basis or almost every day in a large number (85.90%), Facebook being the most often used (82.05%), far more than all the other analyzed, so Facebook and all social networks represent a strong marketing resource of digital marketing for this age group.

Marić, Kovač Žnideršić, Paskaš, Jevtić and Kanjuga (2017, pp. 147-154) deal with the analysis of the modern consumer and electronic interpersonal communication he is exposed to, especially emphasizing his place in the virtual space, as well as the general characteristics of electric interpersonal

communication and its state in the Republic of Serbia. In their analysis of social networks, they emphasize that the key motive for joining social networks is that they offer the possibility of social influence on others, as well as the wish to belong to a certain group of people (social group). The technological dimension, personalized through the creation of so called electronic environment, represents one of the great changes which influences companies as well as the change in the consumer's role within his environment. They draw the conclusion that "we could say that the phenomenon of virtual social networks and communities is becoming more dominant pattern in consumer behavior, and a type of the obsession in the current information and social environment which equally causes delight as well as worries about the above mentioned" (Marić, Kovač Žnideršić, Paskaš, Jevtić, Kanjuga, 2017, pp. 147-154).

It is undeniable that social networks have become a part of man's everyday life (especially for younger generations), and they have therefore become suitable for the selected target market. The real and virtual world are interlacing increasingly, so making boundaries between them is also more difficult. In such conditions, there is a question for marketers – why not use the conveniences offered by the social networks, which makes them a part of the promotional activity mix.

INTERNET FORUMS

Forums (so-called Internet, Web forums) or discussion groups appear as one form of interactive communication between individuals (consumers, as well as salespeople and consumers) and they represent a modern form of viral and by word of mouth marketing (especially if they are independent – not connected to the salesperson). Simple usage without leaving true identities and cost creation make some of the reasons to access the forums. They can also be a component of a Website, which additionally completes its contents and the possibility to communicate with consumers.

Morzy (2013, pp. 615-630) offers the analysis of online forum communities' evolution from the interpretation of its meaning to the introduction of the micro-community model for measuring the evolution of Internet forum communities over time, identification of key features that can be used to characterize an Internet forum community, and validation of the presented model using hierarchical clustering algorithm on a set of Internet forums.

MOBILE INTERNET MARKETING

The increasing application of portable devices and their increasing connectivity to the Internet leads to the creation of the basis for the adaptation of the classic form of communication to the demands in modern business and life in general. This is the way to create marketing adapted to the portable, mobile devices, mostly well-known as mobile marketing. Over 4, 946, 000 individuals

in Serbia use mobile phones. Mobile phones are mostly used by men aged 16-24 (98.6%), followed by men aged 25-54 (97.3%) and 55-74 (84.2%). The situation among women is as follows: 25-54 years old (98.4%), 16-24 (97.2%) and 55-74 (81.2%), (the Statistical Office of the Republic of Serbia, 2017, p. 22). Among portable devices used for Internet access outside home or work, more than a half respondents use mobile phones (a smart phone) with 73.7%, mobile phones using wireless (Wi-Fi) with 61.6% and mobile phones using GPRS or 3G network with 54.5% (the Statistical Office of the Republic of Serbia, 2017, p. 27).

According to the Mobile Marketing Association, n. d., there are especially important examples in mobile marketing: mobile video, display or audio ads, mobile websites, mobile applications (mobile apps), response codes, Mobile Search Marketing, SMS and MMS, Location-Based Marketing (LBM) and Near Field Communication (NFC). Hopkins and Turner (2012) also analyse nine ways of using mobile marketing in business, and they are: Short Message Service (SMS), Multimedia Messaging Service (MMS), Near Field Communication (NFC) and Bluetooth, Mobile Websites, Mobile Display Advertising and Paid Search, Location-Based Marketing, Mobile Apps, QR Codes/2D Codes, and Tablet Computing.

In addition to accessing Web as the key activity among the smart phone users, Pasqua and Elkin (2013, pp. 23-24) point to the existence of the key mobile activities including text messaging, social networking, search, shopping and entertainment.

Mobile applications are special software types adapted to a certain portable device category (e. g. Android), and they are useful as a possibility to improve business directing the users with the information they need, chosen by the marketers. Under such circumstances, from consumers' point of view, a company may seem as an organization trying to additionally improve its relationships with clients which also improves its image, certainly if the application is well-designed from the consumers' standpoint, in terms of functionality and good design.

Websites for portable devices target the adaptation of classic Websites according to the characteristics of the devices they are displayed on, in terms of compatibility and in order to create a transparent, well-designed display with all necessary information that the classic Website display also contains.

QR Codes (Quick Response Codes) are becoming more popular as a possibility of fast and easy routing for the interesting parties towards certain Internet location, but in addition, Microsoft Tags, as well as many other similar response code types are represented to a significant extent.

“Mobile video: Delivered via the mobile network; can be streaming or downloaded video.” (Hopkins & Turner, 2012, p. 31).

Phone usage, regardless of whether we speak about landline, radio or wireless, satellite or Voice over Internet Protocol (VoIP) based phones, especially more recent “smart” versions, can also be considered as a part of modern communication technologies. Smart phones often include Internet usage, e-mail, voice and video calls via Internet and social networks are adapted to these devices, etc. SMS, as a text message, and MMS, as a video/multimedia message are surely some of the oldest forms of marketers contact with consumers if we exclude the calls typical for landline phones as well. Although platform usage for communication based on the Internet technologies is becoming increasingly present, the above mentioned forms of contact still exist, and they are far from extinction. According to Hopkins and Turner (2012, p. 44), SMS creates many advantages, and some of them are: ubiquity, compatibility, personable, environment friendly, cost effective.

One of the possibilities offered online, but also if we consider it in a narrow sense of mobile marketing is the adaptation of marketers' promotional activities on the basis of movement or current location of the (potential) consumer. According to Hopkins and Turner (2012), “location-based marketing also provides the marketer with an opportunity to target engaged consumers in the moment when they are much more likely to make a purchase” and “once you have been able to draw likely customers to your doorstep, there are many ways to enhance the customer experience, increase your potential for generating revenue and encourage repeat business, including:

- Promotional discount and give ways for initial check-in and repeat visits
- Ongoing promotions where incremental discounts and special prizes are awarded based on the number of customer check-ins
- Targeted promotions through social network sites such as Twitter or Facebook” (Hopkins, Turner, 2012).

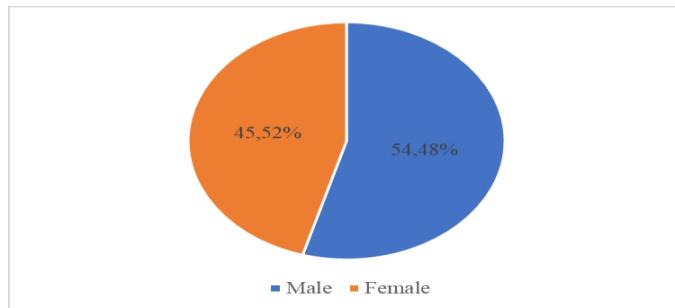
Hopkins and Turner (2012) state 17 Rs of Mobile Marketing as 17 important goals which should be considered constantly in the course of mobile marketing campaign management, and they are: review, relevant, request, recruit, registering, rate, regional, reminders, respect, return, respond, record, responsible, referral, rely, reality and rapid.

According to Bernard (2018), six trends to direct the mobile marketing development in 2018 are: “the Amazon Effect” will challenge the duopoly, programmatic direct will surge, omnichannel will continue to drive consumer narratives, emerging user interfaces will put pressure on mobile definitions, single-vendor data partnerships will intensify market-share competition and IT budgets will shift to marketing as advertiser CMOs protect media spending.

The analysis of mobile marketing in terms of this paper is very important because of the increasing Internet usage on portable devices, and therefore the usage of these devices for information/promotion purposes.

METHODOLOGY

The research was conducted in the period from February to April 2018, applying an anonymous, closed type survey, especially created for this research. The sample consisted of 145 respondents from city of Čačak territory (Moravica District, the Republic of Serbia). There were 79 men (54.48%) and 66 women (45.52%) among the respondents (picture 3). The average age was about 22.11.



Picture 3. Gender structure of respondents

The questions were offered in the form of multiple choice answers. The first question related to the media that the respondents usually used for information on products or services in order to establish the representation share of radio, TV, press and the Internet, and then establish whether there was any media that was specifically singled out in this domain.

Next, there were questions about modern technologies embodied in using a phone for promotion purposes, and they are as follows:

- Phone calls, and
- Phone messages.

Within the above mentioned, the questions relate to:

- The frequency of contact between the marketers and the respondents in the course of the previous year,
- The attitude towards the analyzed form of informing and promoting, and
- The frequency of purchase following the informing/promoting conducted in the analyzed way.

When the Internet technologies and their position in promotional activities are concerned, the questions are divided into the following fields:

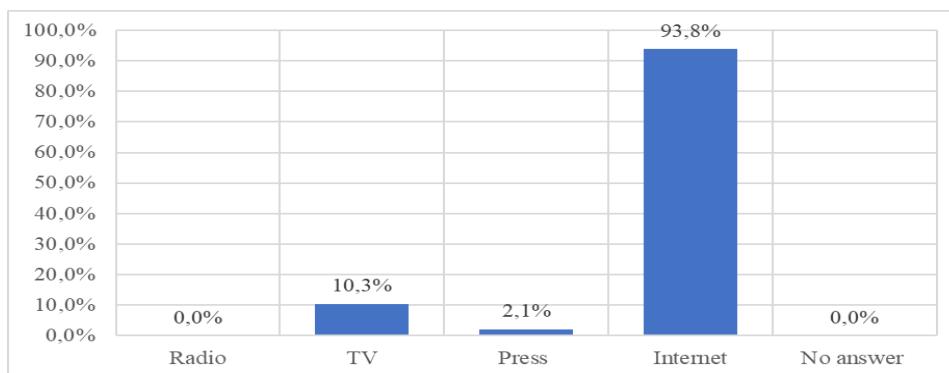
- Websites,
- Blogs,
- Social networks and
- Mailing lists.

In addition to the above mentioned fields, the questions are also related to the frequency of customers using the analyzed technology type for information about the existing or new products/services (all fields).

There is also an additional part consisting of two questions related to the frequency of forums and discussion group usage for information about the existing or new product/service, as well as the frequency of purchase following the information/promotion in this way. The attitudes for these two questions were not separately analyzed.

RESULTS AND DISCUSSION

If we consider the respondents as a group, when it comes to advertising, **the media** they often use for information on products or services, for most of them is the Internet (136; 93.8%). The other media are television (15; 10.3%) and press (3; 2.1%), while radio was not specified by any of the respondents (picture 4). Although the task was to single out a media as the main one, 9 respondents still specified two, which was also taken into account. It is interesting that all of them chose the Internet usage as an answer. Therefore, the Internet is the key source of information among the young, which should not come as a surprise if we consider speaking about the generation that grew up in the times of rapid development of this technology and its increasingly wider availability. Communication without limits, multimedia, information comparison possibilities, the integration of the “traditional” media with the new technologies and their increasing availability, etc., together with the dynamics which reflects the dynamism of their lifestyles, brings the Internet closer to the young as the main bearers of changes in the modern world.



Picture 4. The media respondents often use for information on products or services

Source: Authors

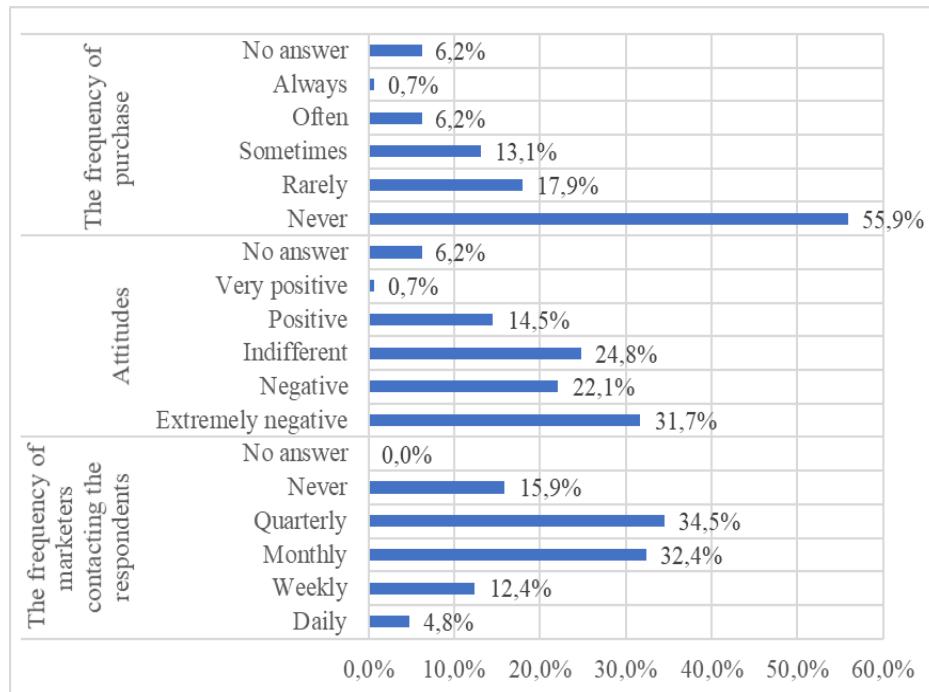
The frequency of marketers contacting the respondents via **phone calls** is represented quarterly for the third of them (50; 34.5%) or monthly (47; 32.4%). Of course, there are other answers: never (23; 15.9%), weekly (18; 12.4%) and daily (7; 4.8%).

The attitude to phone calls as a form of promotion is extremely negative (46; 31.7%), indifferent (36; 24.8%) or negative (32; 22.1%), and positive (21; 14.5%) or very positive (1; 0.7%) to a lesser extent. Nine respondents (6.2%) did not give any answer.

The influence of phone calls as a form of direct marketing does not exist for most of the respondents (81; 55.9%), while the other answers are: rarely (26; 17.9%), sometimes (19; 13.1%), often and no answer (9; 6.2% each) and always (1; 9.7%).

On the basis of the above mentioned data, it is clear that the phone calls as a form of promotion have influence on less than a half of respondents.

The graphic analysis of the phone calls as a resource for information and promotion can be seen in the following graph (picture 5).



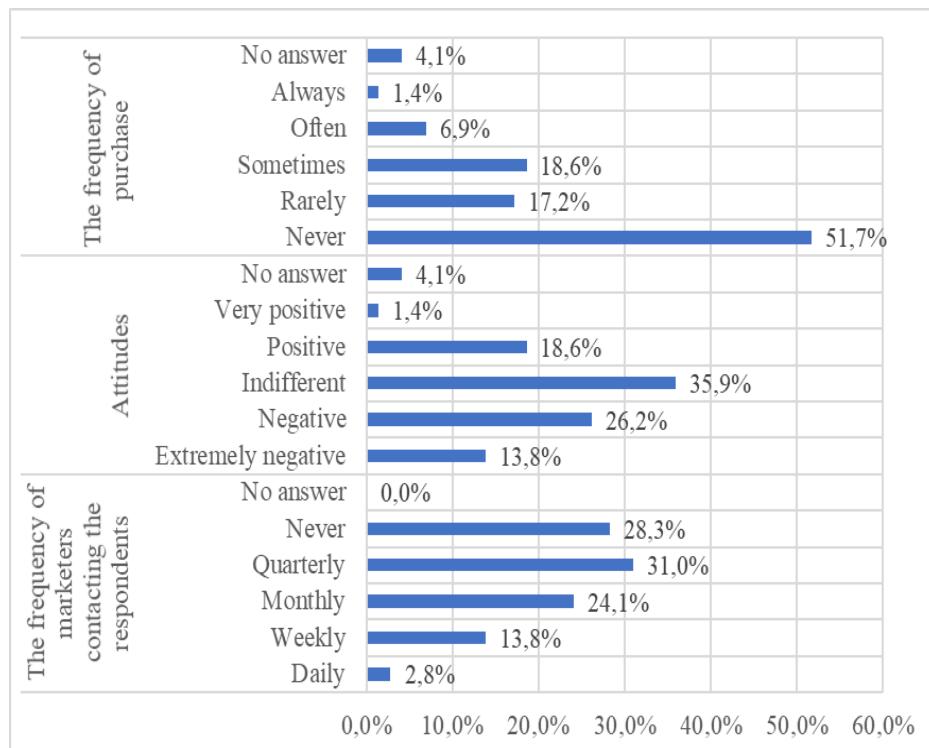
Picture 5. Phone (calls)

Source: Authors

Receiving text messages (SMS) is a way of promotion realization for the people who took part in the survey by frequency: quarterly (45; 31.0%), never (41; 28.3%), monthly (35; 24.1%), weekly (20; 13.8%) and daily (4; 2.8%).

The attitude to SMS promotion as a form of telemarketing, that is direct marketing in a wider sense, is indifferent for a little over a third of respondents (52; 35.9%), negative for a little over a fourth (38; 26.2%), positive for a little under a fifth (27; 18.6%), extremely negative (20; 13.8%) and very positive (2; 1.4%). Six respondents did not answer (4.1%).

There was no purchase following the promotion based on text messages for most of the respondents (75; 51.7%). All the other answers appeared in a much lesser degree: sometimes (27; 18.6%), rarely (25; 17.2%), often (10; 6.9%), no answer (6; 4.1%) and always (2; 1.4%). The graphic analysis of the phone calls as a form of information and promotion can be seen in the following graph (picture 6).



Picture 6. Phone (SMS)

Source: Authors

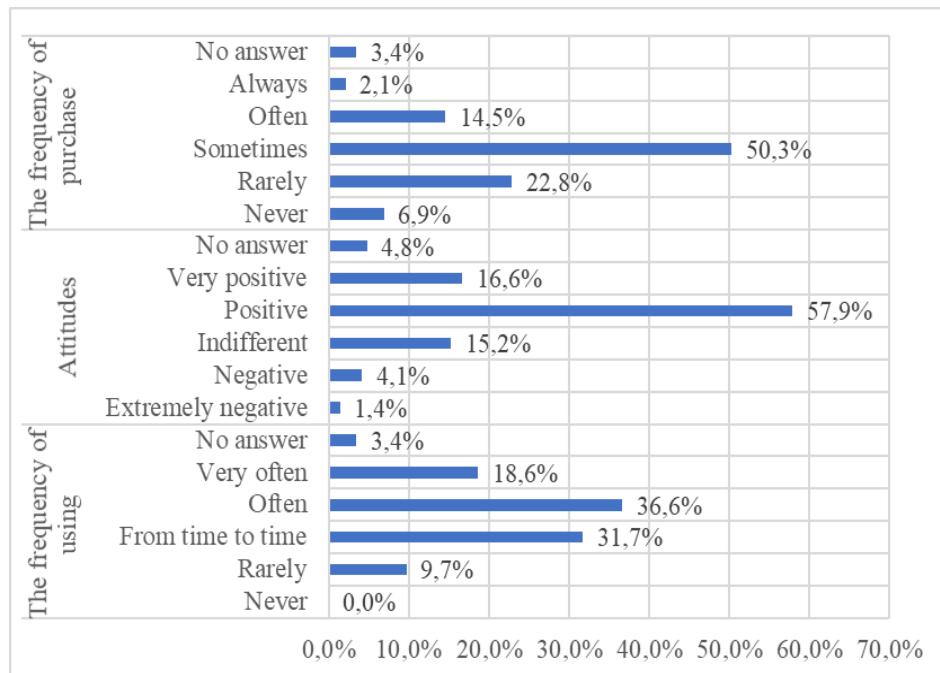
Websites are often used by a large number of respondents for information on the existing or new products/services (53; 36.6%), followed by from time to

time (46; 31.7%), then a much lower percentage of very often (27; 18.6%) and rarely (14; 9.7%). The answer “never” does not exist, while 5 respondents did not give any answer.

When we speak about the attitude on Website usage for information and promotion, more than a half of respondents have a positive attitude (84; 57.9%), while the other answers are represented in a much smaller percentage: very positive (24; 16.6%), indifferent (22; 15.2%), no answer (7; 4.8%), negative (6; 4.1%) and extremely negative (2; 1.4%).

The frequency of purchase following the information obtained via Websites is sometimes (73; 50.3%), and only some of the answers are present in a larger percentage: rarely (33; 22.8%) and often (21; 14.5%), followed by never (10; 6.9%), no answer (5; 3.4%) and always (3; 2.1%).

The graphic analysis of the websites as a resource of information and promotion can be seen in the following graph (picture 7).



Picture 7. Websites

Source: Authors

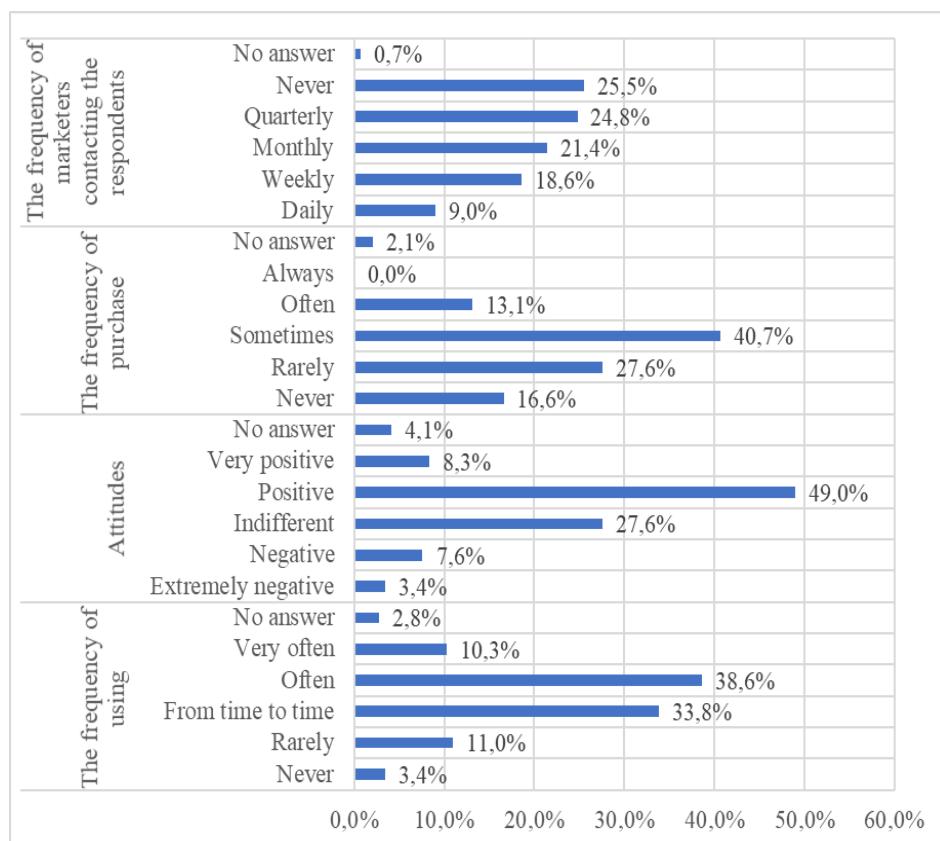
Observing the frequency of **social networks** usage for information about the existing or new products/services, we received the following answers: often (56; 38.6%), from time to time (49; 33.8%), rarely (16; 11.0%), very often (15; 10.3%), never (5; 3.4%) and no answer (4; 2.8%).

Marketers' contact with the responders via social networks cannot be exclusively related to just one answer by frequency: never (37; 25.5%), quarterly (36; 24.8%), monthly (31; 21.4%), weekly (27; 18.6%), daily (13; 9.0%) and no answer (1; 0.7%).

Positive attitude about social networks usage as a form of information and promotion dominates among almost a half of respondents (71; 49.90%). Only indifferent attitude is very common (40; 27.6%), followed by the rest of the answers: very positive (12; 8.3%), negative (11; 7.6%). No answer (6; 4.1%) and extremely negative (3.4%).

The frequency of purchase following the information/promotion via social networks is mainly occasional (59; 40.7%). The other answers are: rarely (40; 27.6%), never (24; 16.6%), often (19; 13.1%), no answer (3; 2.1%). None of the respondents gave the answer "always".

The graphic display of the social networks as the information/promotion resource analysis can be seen in the following graph (picture 8).



Picture 8. Social networks

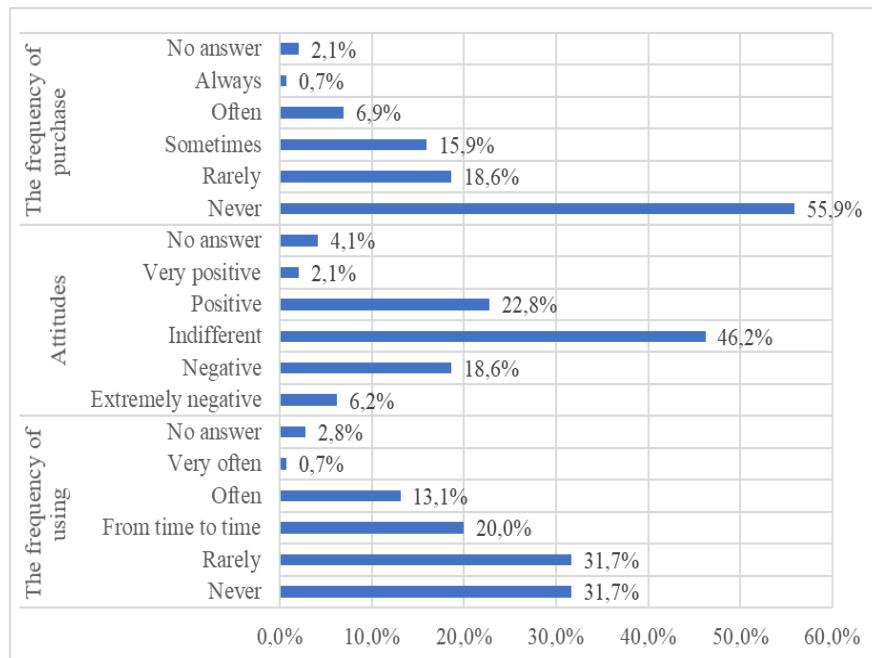
Source: Authors

The frequency of **blog** usage for information about the existing or new products/services is mainly rarely or never (46; 31.7% each), but the following answers are also present: from time to time (29; 20.0%), often (19; 13.1%), no answer (4; 2.8%) and very often (1; 0.7%).

A little under a half of the respondents have indifferent attitude to blogs as a type of information and promotion (67; 46.2%). The other answers are: positive (33; 22.8%), negative (27; 18.6%), extremely negative (9; 6.2%), no answer (6; 4.1%) and very positive (3; 2.1%).

There is no purchase following information/promotion via blogs among most of the respondents (81; 55.9%), but there are also other answers: rarely (27; 18.6%), sometimes (23; 15.9%), often (10; 6.9%), no answer (3; 2.1%) and always (1; 0.7%).

The graphic analysis of blogs as a resource of information and promotion can be seen in the following graph (picture 9).



Picture 9. Blogs

Source: Authors

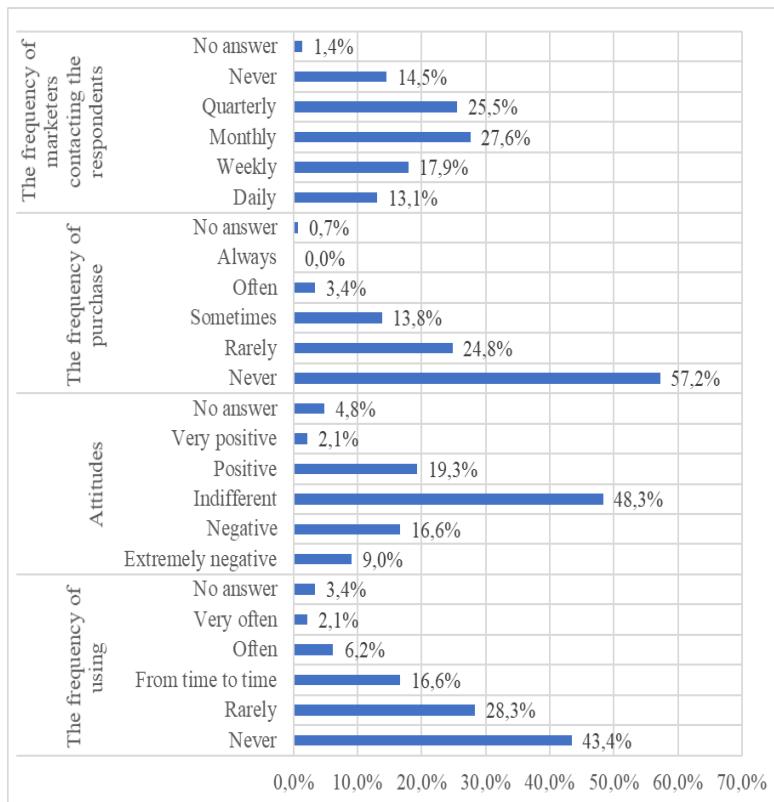
The usage of registration to **mailing lists** in order to get information about products is not present among a large number of respondents (63; 43.4%), but there are some who use this possibility: rarely (41; 28.3%), from time to time (24; 16.6%), often (9; 6.2%), no answer (5; 3.4%) and very often (3; 2.1%).

The frequency of marketers' contacts with the respondents via e-mail within the previous year is not represented in only one dominant answer, but several of them: monthly (40; 27.6%), quarterly (37; 25.5%), weekly (26; 17.9%), never (21; 14.5%), daily (19; 13.1%) and no answer (2; 1.4%).

Almost a half of the respondents have indifferent attitude to registering to mailing lists (70; 48.3%), and the other answers are: positive (28; 19.3%), negative (24; 16.6%), extremely negative (13; 9.0%), no answer (7; 4.8%) and very positive (3; 2.1%).

The purchase that follows the information/promotion based on e-mails is not present among most of the respondents (83; 57.2%), while there are the other answers as well: rarely (36; 24.8%), sometimes (20; 13.8%), often (5; 3.4%) and no answer (1; 0.7%). None of the respondents gave the answer "always".

The graphic display of mailing list registration analysis as a resource of information and promotion can be seen in the following graph (picture 10).



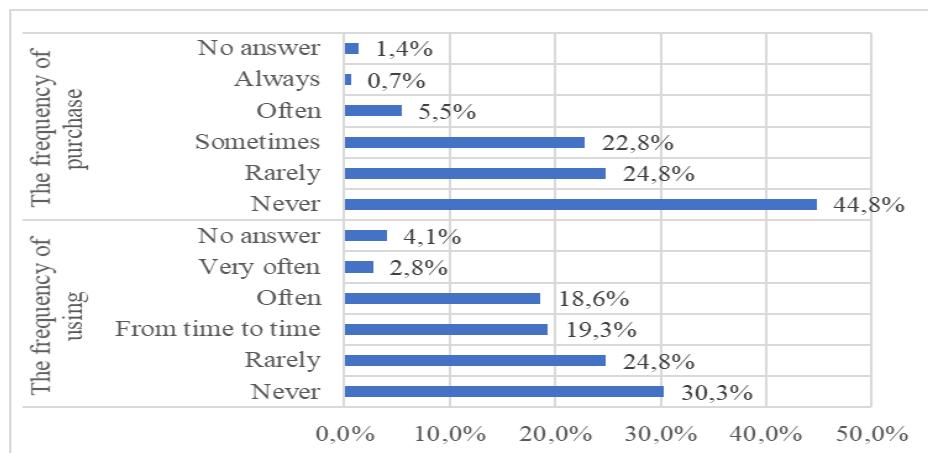
Picture 10. Registration to mailing lists

Source: Authors

The frequency of visits to **forums and discussion groups** for information about products/services is represented in the following way: never (44; 30.3%), rarely (36; 24.8%), from time to time (28; 19.3%), often (27; 18.6%), no answer (6; 4.1%) and very often (4; 2.8%).

The purchase following the information using forums and discussion groups is most often non-existent (65; 44.8%), or it exists rarely (36; 24.8%) or sometimes (33; 22.8%). The answers such as often (8; 5.5%) and always (1; 0.7%) are very rare, but there are also some respondents who gave no answer (2; 1.4%).

The graphic analysis of forums and discussion groups as resources of information and promotion can be seen in the following graph (picture 11).



Picture 11. Forums and discussion groups

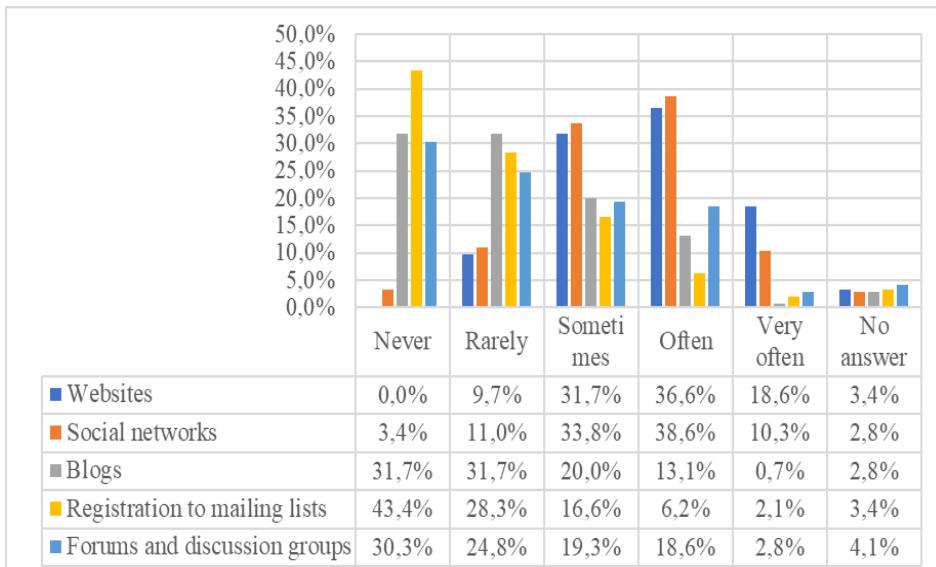
Source: Authors

If we apply comparative observation on the modern forms of ICT analysed in the preceding paragraphs from the aspect of the frequency usage for information about the existing or new products/services among the young (picture 12), we can reach the following conclusion:

- Websites (there is no individual who does not use them, only 9.7% use them rarely) and social networks (only 3.4% do not use them, 11.9% use them rarely) are most often used;
- A large percentage of the respondents do not use registration to mailing lists (43.4%), and also almost a fourth of the respondents do it extremely rarely (24.8%), which makes the total of 71.7%; in addition to the poorest results in frequency “from time to time” and “often” (as well as in the situation when often and very often are considered as a whole 8.3%), we

can draw a conclusion that this is the least used analyzed modern technology resource;

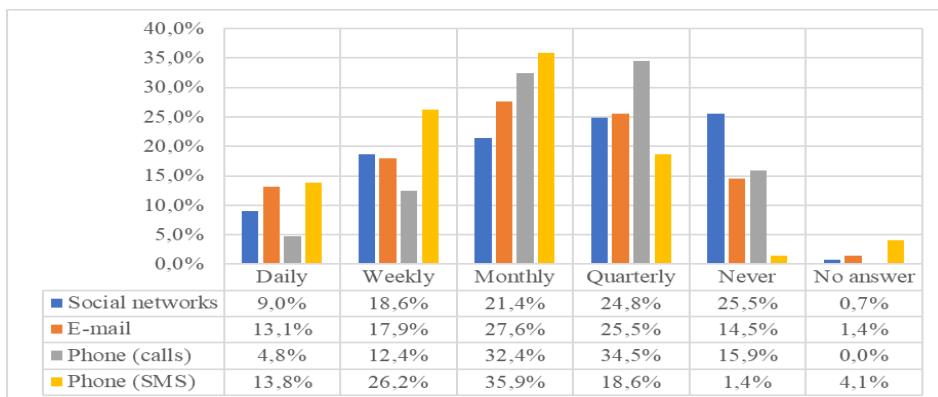
- Besides the registration to mailing lists, only forums and discussion groups show the declining tendency of usage frequency;
- Blogs are the second least used technology resource if we consider the share in the answer “never” (31.7%), and there is a large percentage of rare usage (31.7% - first place), which makes a total of 63.4% of the respondents who do not use blogs or use them very rarely.



Picture 12. Comparative observation on the modern forms of ICT from the aspect of the frequency usage for information about the existing or new products/services

Source: Authors

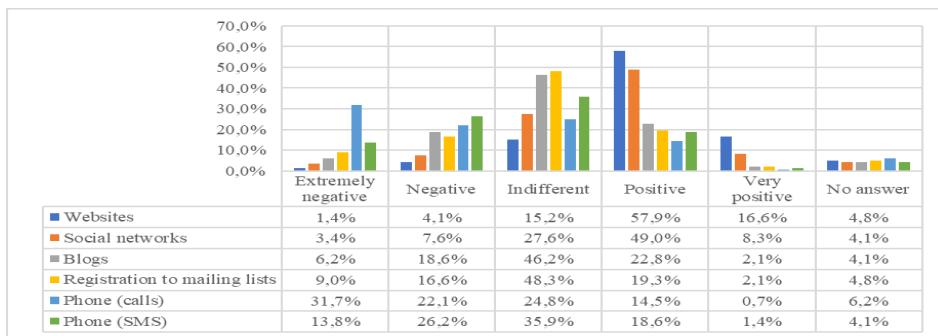
Through the comparative analysis of the frequency describing marketers' contacts with the respondents via social networks, emails, phone calls and text messages (picture 13), we can reach the conclusion that the most often used way to contact is SMS – the largest percentage on daily, weekly and monthly basis, and the smallest percentage of the answer “never”.



Picture 13. Comparative observation of the frequency marketers' contacts with the respondents via social networks, emails, phone calls and text messages (SMS)

If we analyse the comparative attitudes about modern ICT usage for promotional purposes, grouping them into negative, indifferent and positive separately (picture 14), we can reach the following conclusions:

- The respondents have the best opinion about Websites as a form of promotion/information: positive 74.5% (the best positioned in case of both positive and very positive attitude), indifferent 15.2% and negative 5.5% (the least present in case of both extremely negative and negative attitudes);
- Besides Websites, social networks also have an excellent position in respondents' minds: positive 57.3%, indifferent 27.6% and negative 11.0%;
- Blogs and mailing list registration share similar positions, but with a small advantage for blogs;
- Phone calls are the worst positioned, considering the fact that they convincingly take the first place in “extremely negative attitude” category (31.7%), the second place in “negative attitude” category (22.1%), and the last place in very positive (0.7%) and positive attitudes (14.5%). The total of negative attitudes is about 53.8%, while, on the other hand, it is only 15.2% for positive attitudes.
- After the phone calls, SMS is the next worst positioned means of communication (the second place for extremely negative 13.8%, the first place for negative 26.2%, and next-to-last place for very positive 1.4% and positive 18.6%), since the total negative attitude is about 40%, while the total positive attitude is about 20%.

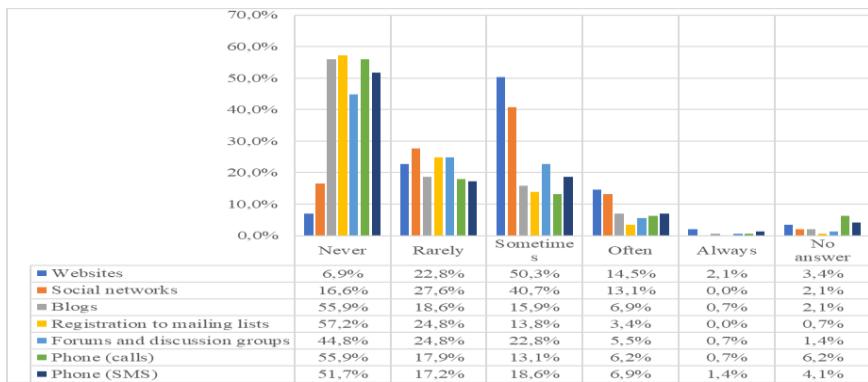


Picture 14. Comparative observation of attitudes about using ICT

Source: Authors

If we consider modern technology means of information and promotion in comparison to their influence on purchase (picture 15), we can reach the following conclusion:

- Websites have the largest influence on purchase, since they do not influence only 6.9% of the respondents, and they take the first place according to other positive criteria (always, often and sometimes) before social networks.
- Blogs, mailing list registration, phone calls, forums and discussion groups show a negative tendency of influence on purchase (from “never” to “always”), but the mailing list registration holds the worst position among them.
- Generally speaking, the influence of websites and social networks is “sometimes” present (more than 40%), while it is mainly negative in case of blogs, mailing list registration, phone calls, text messages, forums and discussion groups (44.8% for forums, more than 50% for others).



Picture 15. Comparative observation of ICT impact on purchasing decision

Source: Authors

The good position for websites can most likely be justified by their unobtrusive position. There is no contact and disturbance by the marketers. They exist, and if there is someone interested in their visit, they will do that at the most convenient moment. Likewise, websites can seem like serious indicators of a company's image, since they can be experienced as the only official Internet presentation containing the most accurate information with possible additional content (free contacts, forums, online shops, etc). Website design can also be adjusted to marketer company's characteristics and its target market which leaves a lot of space for differentiation on this basis, while the other analysed means of communication do not offer it sufficiently.

Besides websites, social networks show good results among the young. The reason lies probably in the fact that they are the best reflection of their way of life because of their dynamics and interactivity, and they are created just for them in most of the cases. As a means of modern communication, social networks satisfy primal human need for connection and belonging to certain social groups, only transferring it to the virtual world. It is necessary to point out that about a fourth of the respondents has never been directly contacted by the marketers in this way, and as many of them have been contacted quarterly and even less often (graph), which also has a positive influence on their views about promotion/information via social networks.

A bad position of phone calls as a resource of information and promotion is the result of its being an "outdated" model of communication traditionally connected to them. This is mainly true about the calls by telemarketers, which, apart from being least used to contact consumers on a daily and weekly basis, are increasingly experienced as harassment and privacy violation, as well as a waste of time and needless persuasion that can only make things worse in certain cases in relations between the consumer and the company or product. Also, there is a question of how much young people use phone calls at all, as well as classic text messages, in conditions of increasing Internet usage and their turning to more convenient means of communication, although the marketers still do not give up on phone calls as a means of communication, as we can see in the research data (text messages are most often used, the graph). This often contact initiative is one of the reasons for a bad position of telemarketing (especially when we speak of text messages).

When we speak of mailing list registration, the key fact is that it is the type of Internet based modern technologies least used by the respondents. The reason for that is probably the time necessary for finding the mailing list registration option on a website; in certain cases, it demands additional data in order to become a part of the company's family. On the other hand, all news are mainly published on social networks as well, therefore their users will have a chance to see marketers' new offer; in case they are interested, they can get additional information on the website (for example, current catalogue download). There is a possibility of receiving a large quantities of "useless" mails (only 4.5% never

receives marketers' mails, 13.1% daily), or, in contrast, rarely receives the notifications after the mailing list registration (monthly 27.6%, quarterly 25.5%). This type of promotion is endangered by the reception of other companies' mails that the respondent is not interested in (spam). Despite this fact, mailing list registration is not a form of promotion with the worst position when we speak of consumers' attitudes.

On the basis of all the above mentioned, the main conclusion is that it is best for marketers to use websites and social networks if they want to reach and influence the consumers of younger generation in the city of Čačak territory.

CONCLUSION

Technology development trends have led to great changes in all areas of human life, as well as in organization functioning. Marketing, as one of the key business functions, is their essential part. It is mainly evident in marketers` activities in terms of using various technological solutions with the aim of achieving desired results. However, there are changes in theoretical part as well, where the authors rely on the improved concept of marketing based on the consumers` behavior, as well as the concept of consumers as business philosophy of new age (4A). New views of marketing mix appear, noticing new elements such as 4P – people, platform, participation, promotion, or 4S – scope, site, synergy, system, etc., neglecting the traditional 4P model at the same time. All of this is based on the greater role of technology in all areas of marketing, thus creating its new form – Internet, digital or online marketing, changing the promotion as its component. New models of communication are mostly adapted to the opportunities offered by ICT, especially the Internet, so new models of mobile phones are constantly being developed (smart phones, tablets, laptops, etc) as the answer to man`s increasing need for speed, flexibility and availability. In addition to the classic SMS and MMS messages and calls, mobile marketing is considered as a part of online marketing for all the above mentioned reasons, since most of the activities are performed on the Internet, and the promotion on the basis of the location of the user himself (Location Based Marketing – LBM).

As we can see in this paper, there is a large percentage of individuals with a mobile phone, computer and Internet connection in Serbia, with the purpose of searching as one of the favourite activities of the population in free time. These facts leave enough space for conducting promotional activities via the Internet usage, and therefore the research was conducted among the young from the city of Čačak territory on information and promotion via modern ICT. The results obtained in the research show that the young from the city of Čačak territory state that the Internet is most often used (in more than 90% of the cases) among the media observed (radio, television, press, the Internet) - the supporting hypothesis is proven. The young use websites more than any other source of information, they have the best opinion of them, and websites also influence the

decision about the purchase the most. Apart from websites, social networks also show excellent characteristics, while the position of mailing lists, blogs, forums and discussion groups, as well as phone calls and text messages is a lot worse, but not completely negligible. It follows that the main hypothesis of this paper is proved.

When we speak about the frequency of the marketers contacting the respondents (social networks, emails, phone calls and text messages), we can reach the conclusion that SMS is most often used for that purpose.

The main conclusion is that one of the main ways for marketers to communicate with their target market is to conduct the promotional activities based on the opportunities offered by the Internet, with the constant development of the devices contributing to its usage, especially with the appropriate usage of websites and social network marketing.

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MULTI-CRITERIA ANALYSIS IN ICT IMPLEMENTATION FOR SMART CITIES

Mimica Milosevic⁷

Violeta Dimic⁸

ABSTRACT

Cities have the potential for the smart modern digital technologies that provide better services to the citizens, greater resource efficiency and less harmful impact on the environment. They are based on the use of smart grids, the introduction of information and communication technologies, the internet connectivity of all facilities and the environment protection. It involves the introduction of intelligent transport systems, increase in energy efficiency through the implementation of smart metering and the introduction of innovative solutions in the construction industry. Each city is a unique system, where different actors, the city administration, municipal enterprises and citizens, are taking a number of activities, creating complex interactions and interdependences. Defining of the smart city is most commonly linked with the application of information and communication technology ICT. Companies, citizens, universities or scientific institutions, management bodies, non-governmental organizations and private investors – they all have a different view of the city and its future development. Despite the different visions, a sustainable city is a common goal of its citizens in the future. It is important to establish a methodology that will help to find the optimal path to the final goal-sustainable and smart city. The concept of the smart city is the result of ideas for using advanced technologies (ICT) to improve the life of people in the city and imposes as a solution to the challenges posed by the process of urbanization. Our research is aimed at developing a strategy for the smart city concept from the point of view of the integration of information and communication technologies. An integrated approach is based on the mathematical method of Analytical hierarchy process. It classifies the system through different criteria and sub-criteria in which the significant role of ICT, taking into consideration the opinions of experts, is emphasized. The proposed method performs the ranking criteria, with the aim of finding an optimal approach in the implementation of ICT in making the concept of smart city stressing indicators with dominant importance.

Key words: Information-Communication Technology, Smart City, Analytical Hierarchy Process

JEL Classification: C16

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INTRODUCTION

Attempts to achieve sustainable urban development have become the latest in recent years within the framework of the smart city concept (Batty, M 2013; Deakin, M. 2014). Smart City occurs as an idea for using advanced technology to improve the life of people in the city and imposes as a solution to the challenges posed by the process of urbanization. Development of information and communication technologies (ICT) on a massive scale has already improved the lives of people and changed the way they work, educate themselves, buy and spend their free time. The use of computers, the Internet, smartphones and applications enables citizens to obtain the desired information and to communicate with others in an easy and quick way. The concept of a smart city stems from striving for implementing ICT in all components of the city such as transport, energy, infrastructure and facilities, culture, entertainment, in order to improve quality, to respond to changes more quickly and overcome problems. Smart City is a vision of the future of urban development that every city is developing for itself. Cities like Paris, Copenhagen, Berlin, Amsterdam, London and Barcelona are actively applying smart technological solutions to improve public and social services.

For cities, in this day and age, the trend of urbanization represents a completely new challenge in approaching sustainable development (European Commission, Brussels 2012). Cities are at the heart of all sustainable urban development strategies. In cities, new job opportunities are created and innovative technologies are developed. They are drivers of economic development, centers of culture, science and education. More than half the world's population today lives in cities, and researches predict that by 2050, urban areas will be occupied by 70% of the population (Alkandari et al, 2012; Golej, 2014). Through a continuous process of evaluation of indicators of sustainable development, of economic social, political-social and environmental development, the essence of each city, which wants to become "smart" lies in the interaction of all the available information and services at the local level which should be manifested as a local, regional or national indicator for raising the degree of sustainable development. There are no smart cities in Serbia in the true sense of the word, and there are only suggestions for the possibility of smart development through the national action plan (Đukić & Antonić, 2016). Despite the different visions, the common goal is for cities to be sustainable and smart (Giffinger, 2007).

The paper deals with the issue of multi-criteria decision making in the process of creating the smart city concept implementation from the point of view of ICT and the selection of key indicators. In regard to the number of criteria that need to be observed, the aim of the study is to draw attention to the importance of the use of multi-criteria optimization in moments of making complex and important decisions (Dimić et al, 2018).

The research is based on the alternative ranking by applying mathematical method the Analytic hierarchy process (AHP). Since the need for standardization is particularly valuable and clear management in connection with projects regarding this concept is necessary, the research relies on components defined in 2007, when six criteria were specified for the smart city concept: smart governance, smart citizens, smart economy, smart mobility, smart living and smart environment (Albino, Berardi & Dangelico, 2015) The aim is to rank the key indicators by applying the AHP mathematical method and to examine their significance and contribution to urban development in the future, as well as to provide measures for the development of a smart and sustainable city with ICT implementation aspect.

Within each group the specified criteria are indicators that most commonly occur in similar analyses of the concept of Smart city as in Picture 1. Smart Cities: Definitions, Dimensions, Performance, and Initiatives. Serbia has a need to develop the concept of a Smart City in accordance with developed countries.

SMART GOVERNANCE	SMART CITIZENS	SMART LIVING
<ul style="list-style-type: none"> •strategies and perspectives •citizens participation •services accessse and e-governance •transparency and open-data 	<ul style="list-style-type: none"> •community participation •awareness •high degree of qualification •e-learning and life-long learning •creativity,flexibility, openness •social and ethnic diversity 	<ul style="list-style-type: none"> •safety •affordable housing •utilities, infrastructure •health services •education and training •social integration and recreation •culture and tourism
SMART MOBILITY	SMART ENVIRONMENT	SMART ECONOMY
<ul style="list-style-type: none"> •Integration of ICT Infrastructure •innovative transport system •local and international accessibility 	<ul style="list-style-type: none"> •urban planning •pollution control and environmental protection •efficient use of water •use of renewable energy •smart buildings construction •management of natural resources •attractiveness of natural environment 	<ul style="list-style-type: none"> •Entrepreneurship, star-up •innovation and strategic investment •economic opportunities for citizens •productivity •transformation capacity and market flexibility •economy promotion and competitiveness •e-business, e-commerce •integration with national and international market

Picture 1. Smart City concept

Source: Authors adapted from Albino, Berardi & Dangelico, 2015

ICT IMPLEMENTATION FOR SMART CITIES

The information-communication technologies improve urban infrastructure, including setting up sensors to collect data in order to provide real-time information for resource management and control of public safety. The use of large amounts of data, i.e. big data allows us to focus on all aspects to solve a

complex problem. By applying crowdsourcing and Internet of Things (IoT) of open platform today it is possible to look at the existing problem from more than one perspective and to integrate their reach settlement (Giovannella, Dascalu & Scaccia, 2014; Golej, 2014; Glasmeier & Christopherson, 2015; Hernández-Moreno & De Hoyos-Martínez, 2010). The trends assessed as most relevant are the Internet of Things (IoT), 5G, big data and cloud services. The smart city concept is the result of ideas for using advanced information and communication technologies (ICT) to improve the life of people in the city and imposes as a solution to the challenges posed by the process of urbanization (Monzon, 2015). Based on the literature, studies and expert papers (Meeus, Delarue & Glachant, 2011; Lovehagen & Bondesson, 2013; Rezultati istraživanja i predlog prakticne politike, Beograd 2011; Capehart, Turner & Kennedy, Guide to energy management 2012; Energy 2020 European Commission, 2011), which dealt with the "Smart City" model, we showed that the methodology must lead to the impact assessment of the viability of the various IoT solutions to be used in city as in Picture 2.

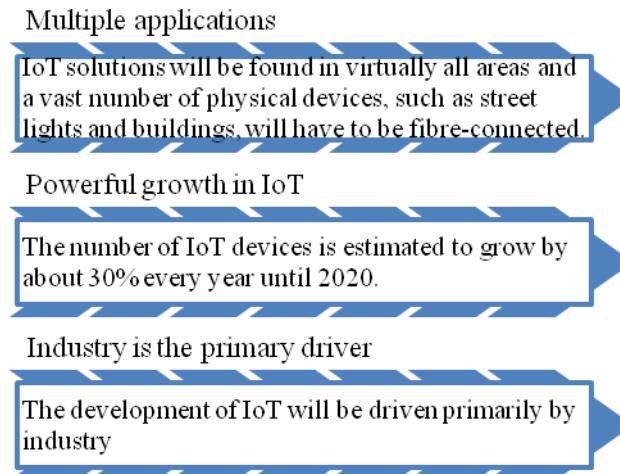


Picture 2. IoT Smart Cities

Source: <http://vtaraenergygroup.com/index.php/portfolio/iot-smart-cities/>

IoT refers to the use of sensors – small devices that can record various types of data, such as heat, light, speed and weight – and wireless communication in various types of physical products on a large scale, where devices are connected to the internet and work without human interaction. When many sensors are connected, this creates big data, allowing the physical world to be analyzed in detail and, in many cases, in real time. The information can be used for a lot of purposes including optimizing a city's infrastructure and using its resources more efficiently. Some IoT services put demands on capacity, others on access, and it is, therefore, important to have an infrastructure that can

manage both parts. There are several general trends in the IoT area that put demands on the infrastructure of a smart city shown in Picture 3 (Deloitte report, 2017).



Picture 3. Several trends in the IoT area

Source: Authors (adopted from Deloitte report, 2017)

IoT data comes from different sources, passive or active involvement of citizens, in a place where you store, analyze and process, forming the appropriate information, which later affects the actual processes in the city. So residents are the ones who provide a steady flow of information, as one of the most important resources of smart cities. The development of cloud computing in recent years enables the virtual store and transfers large amounts of data.

The use of sensors is widely prevalent in the cities to which we bind the epithet smart, and the application of ICTS is particularly expressed in the traffic and transport of passengers. The mobile applications often track the movement of people in order to establish the pedestrian routes, attractive sites and traffic between certain parts of the city, which is especially important for the sector of urban planning. Technology in transport is used for informing the passengers of the bus via information board or text messages or for electronic payment of tolls. Urban sensors are increasingly applied to monitor the free parking spaces in order to reduce congestion and delays. Smart parking lots have already been developed in Berlin, Split, Dubrovnik and other European cities. In London, on the other hand, the mobile application City mapper was developed, and it indicates the best route for getting through the crowd for motorists, and something similar is applied by the 40-odd cities around the world. ICT also enables citizens to interact with city institutions and provision of services in real time via electronic management and linking to the shared IP network. Access to

the public service today is done via the internet and mobile applications which avoid congestion on the lines of identification documents.

Cities are increasingly seeking and opening free wi-fi networks to provide seamless communication between all parts of the world. In New York City smart phone booth was developed, where computers and links are set up to access the wi-fi network. ICT is increasingly implemented in the area of health enabling monitoring of patients' health status by GPS and the ID bracelet. Because of the applied smart technologies within the objects we often talk about designing intelligent buildings that via sensors simply regulate heating, cooling, ventilation, natural and artificial lighting. Bearing in mind that people don't use appliances in the household in a smart way, over time, they developed the smart meter devices too that measure consumption of electricity in houses, and provide citizens with advice on energy savings against their consumption with the consumption of other people or neighbors.

The key role of information and communication technology is an activator of sustainable and efficient city services. Cities offer their citizens a variety of services including the supply of water and energy, traffic management, waste management, health services, education and security. The efficiency of these services can be significantly improved with the application of ICT technology, creating a new set of smart services that lead to improved effectiveness and sustainability of all participants in the process of transforming cities into sustainable smart cities. Each community should assess different services that the city provides. Experience shows that the application of ICT can help in many cases to improve some important services in a relatively short period of time. The possibility of improving the services should be used for contributing to the efficiency of city services.

Smart water-management systems enable a sustainable water management (water delivery and water distribution, wastewater treatment and other utilities) integrated management through ICT infrastructure to maximize socioeconomic welfare of the society without compromising the environment.

Smart energy management systems: use sensors, advanced measurement devices, digital controls and analytic tools for automation, monitoring and control of bidirectional power flows, improve the operation of the network-in order to ensure the reliability, interactivity, compatibility, energy saving, safety and optimal use of energy from renewable sources with minimal emission of carbon dioxide. For example, in a project, a conventional smart electricity meter has been combined with a smartphone in order to visualize electricity consumption to increase energy transparency. Based on these ideas and the infrastructure developed in these projects, we are currently exploring a new set of smart meter services connecting every-day devices, sensors and actuators in the home to achieve the energy savings and efficiency gains needed for the upcoming energy transition.

Traffic congestion became a major problem in urban cities worldwide. Traffic congestion not only wastes time of motorists and passengers and causes unnecessary stress, but also reduces regional economic growth, increases fuel wastage, air pollution and carbon dioxide emission, which is directly proportional to the greenhouse effect. Smart traffic management systems allow the movement of people and goods in an efficient, financially profitable, safe and environmentally sustainable manner. Some additional benefits of these systems have the ability to locate and identify vehicles and monitor and control the roads. This can reduce travel time and shorten processes of insight into car accidents. Development of smart vehicles began with electronic fuel injection, power distribution control for each wheel, computer diagnostics, advanced air-bag systems and satellite navigation to the message center, the possibility of autonomous parking (without driver), etc. Future solutions will be based on applying better and healthier ecological vehicles and their connecting infrastructure facilities, such as gas stations, parking lots, garages, etc. Wider application of advanced information technologies, except the communication of vehicles with infrastructure, will also allow vehicles communication (auto-maintaining minimum distances in order to avoid collisions). Examples of the implementation of intelligent transport systems are traffic control system integration: management of traffic flows, traffic lights management, variable traffic messages, control access to the highway, checking the speed of movement, parking management, etc. Modern information systems are delivered (vehicle tracking, navigation, e-payment of tolls, etc.). They are normally transmitted via 3G or 4G cellular networks or other communication systems. One of the ICT services is monitoring traffic in real time; it is normally implemented as part of the system for locating and navigating vehicles. GIS-based maps and visualization can greatly assist in understanding real scenario on site and improve communication. This allows better response to traffic incidents, and as a result, traffic management can be performed efficiently. In addition to that, local and international accessibility of the city is important (Batagan, 2011; Okuda et al, 2012).

Smart waste management systems strengthen the implementation of the monitoring and waste collection and disposal. They follow the movement of different types of waste, optimize transportation route, connecting different systems of smart waste management, use of technology for collecting and sharing data from sources of waste, optimize management and sorting. To update all the necessary data obtained in real time, through constant monitoring of the use of ICT systems, a city can mitigate global pollution.

Smart systems for health are improving health services to citizens, primarily in the context of the communication and the exchange of information and direct assistance especially to elderly people and disadvantaged groups. Examples of intelligent health care systems include the availability and improvement of remote diagnosis, remote medical treatment, online medical help and remote patient monitoring system. It is necessary to support an

effective process management and management of all business processes in the conduct of electronic health records, interoperability standards of personal data on health, use of health service portal and e-health and establishment of a system of linked electronic health documentation.

Smart systems for education of children and adults are probably the most important long-term service of smart city. The application of ICT can improve education by providing students the personalized learning, learning from home for the sick and those living in remote locations.

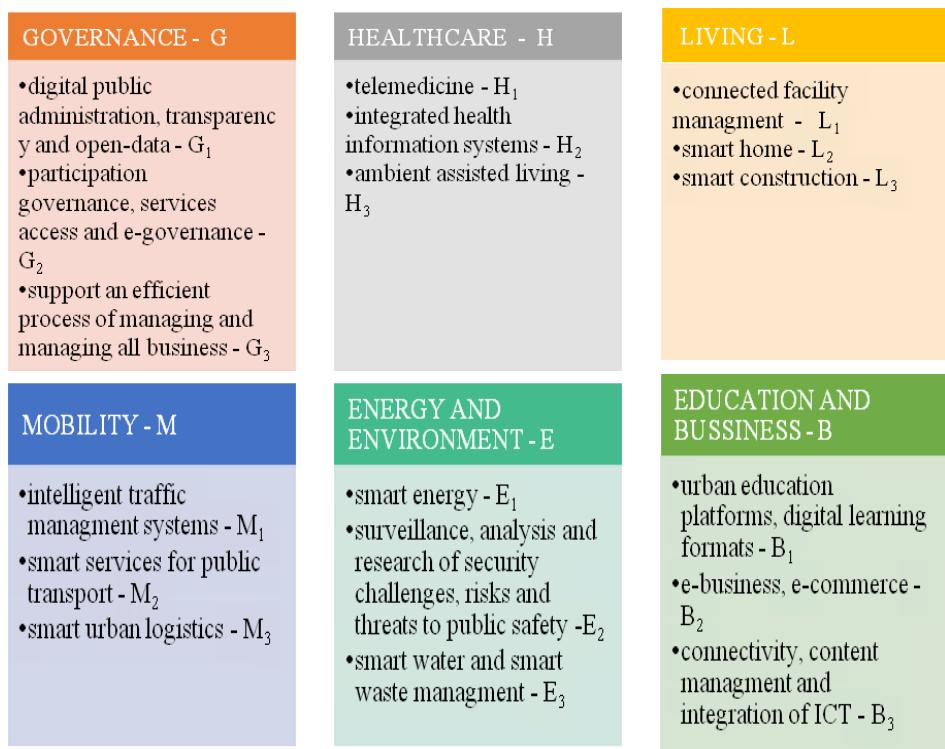
Smart security systems such as security, physical security and protection of citizens today are one of the most important components of the smart sustainable city. The application of ICT helps to resolve the critical situations such as natural disasters or terrorist attacks, accidents, identification of offenders, conduct of predictive analysis and identification of criminal patterns in order to improve the security of citizens.

Smart building technologies systems use sensors and statistical data for building automation, improve energy efficiency, reduce losses and optimize water consumption, while significantly improving the quality of life of the residents.

A smart city is constantly influenced by new trends. As a result, the city must be flexible and adaptable in order to keep up with rapid developments. The trends also have direct impact on specific areas within a smart city, where larger amounts of data, for example, impose higher demands on data storage and the underlying communications infrastructure.

AHP METHOD RANKING

For the purpose of ranking the Analytic hierarchy process was applied in the study. The method of Analytical hierarchy process (AHP) was created to provide assistance in resolving the complex problems of decision making. The area of application methods is multi-criteria analysis, where it is based on a defined set of criteria and attribute values for each alternative selects the most acceptable solution, that is, the full schedule of the importance of alternatives to the model. In order to find the key strategy for the application of ICT in the development of the smart city concept, the opinions of experts in the application of the AHP method were taken into account. An increasingly complex environment of rapid development of technological fields, market models and applications is generating a need to create an overall view and the capacity to conceptually structure of the various components that together create efficient solutions for the cities.



Picture 4. ICT in the smart city concept

Source: Authors

Given the preceding analysis, the concept of this work done is the ranking of the six basic groups of criteria that need to be taken into account in the implementation of the smart city concept through a strategy of implementing ICT solutions: governance – G, health – H, living – L, mobility – M, energy and environment – E, education and business – B (Picture 4) (Smart Cities, Vienna UT 2007).

METHODOLOGICAL BASIS OF THE AHP METHOD

Analytic Hierarchy Process (the AHP) belongs to a class method of "soft" optimization. Firstly, the AHP enables the interactive creation of hierarchy problems as the preparation of decision-making scenarios, and then the evaluation in pairs of the hierarchy elements (objectives, criteria, sub-criteria and alternatives) in the top-down direction. In the end, the synthesis of all evaluations is done, and under strict determined mathematical model the weight

coefficients of all the elements of the hierarchy are established. Since its discovery the AHP has been applied in a variety of decision-making scenarios: selection of one alternative from a set of alternatives; determining the relative merit of a set of alternatives; finding best combination of alternatives subject to a variety of constraints; benchmarking – of processes or systems with other, known processes or systems; quality management. The AHP organizes feelings, intuition, and logic in a structured approach to decision making. The method is based on the fact that even the most complex problem can be decomposed into a hierarchy in such a way that in the further analysis it includes both qualitative and quantitative aspects of the problem. AHP keeps all parts of the hierarchy in a relationship, so that it is easy to see how changes in one factor affect other factors. The complexity of the problem increases with the number of criteria and alternatives. The experts group is agreed on the obtained estimation in the selected. AHP method is based on the following axioms:

Reciprocity axiom: If the element A is n times more significant than the element B, then element B is 1/n times more significant than the element A;

Homogeneity axiom: Comparison only makes sense if the elements are comparable;

Dependency axiom: Allows the comparison among the group of elements of one level in relation to the element of a higher level, i.e. comparisons at lower levels depend on the elements of a higher level; Axiom of expectations: Any change in the structure of the hierarchy requires recalculating priorities in the new hierarchy.

The problem structure consists of disassembling particular complex decision problems into a series of hierarchy, where each level represents smaller number of the managed attributes. Decision maker assigns relative marks to couples of attributes of one hierarchical level, and that for all levels of the entire hierarchy. Thereby, the presented evaluation scale is used. The result is a corresponding matrix of pairwise comparisons that are appropriate for each level of the hierarchy. Any comparison between two elements (models) of hierarchy is made using Saaty's Scale (Saaty, 2001, Saaty, 2008).

$$S = \left\{ \frac{1}{9}, \frac{1}{8}, \frac{1}{7}, \frac{1}{6}, \frac{1}{5}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, 1, 2, 3, 4, 5, 6, 7, 8, 9 \right\}$$

(1)

The priority, which one alternative has in relation to other, is expressed with descriptive values in Table 1.

Table 1. AHP pairwise comparison scale

Intensity of importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
3	Moderate importance	Experience and judgment slightly favor one activity over another
5	Strong importance	Experience and judgment strongly favor one activity over another
7	Very strong or demonstrated importance	An activity is favored very strongly over another, its dominance demonstrated in practice
9	Extreme importance	The evidence favoring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values	Requires compromise or further division
Reciprocals of above	If factor i has one of the above numbers assigned to it when compared to factor j , then j has the reciprocal value when compared with i	A reasonable assumption

Source: Authors (adopted from Saaty 1982)

AHP method belongs to the group of popular methods, because it has the capability to identify and analyze the consistency of decision-makers in the process of comparing elements of the hierarchy. Since the comparison of alternatives is based on a subjective assessment by the decision makers, there is need for constant monitoring, in order to provide the necessary accuracy (Gass & Rapcsák, 2004). Based on the comparison in pairs of hierarchy elements, the appropriate matrix of criteria comparison is formed. The AHP method allows monitoring the consistency of the estimates at any time in the process of comparing the pairs of alternatives by using the indexes:

$$CI = \frac{\lambda_{\max} - n}{n-1}, CR = CI/RI \quad (2)$$

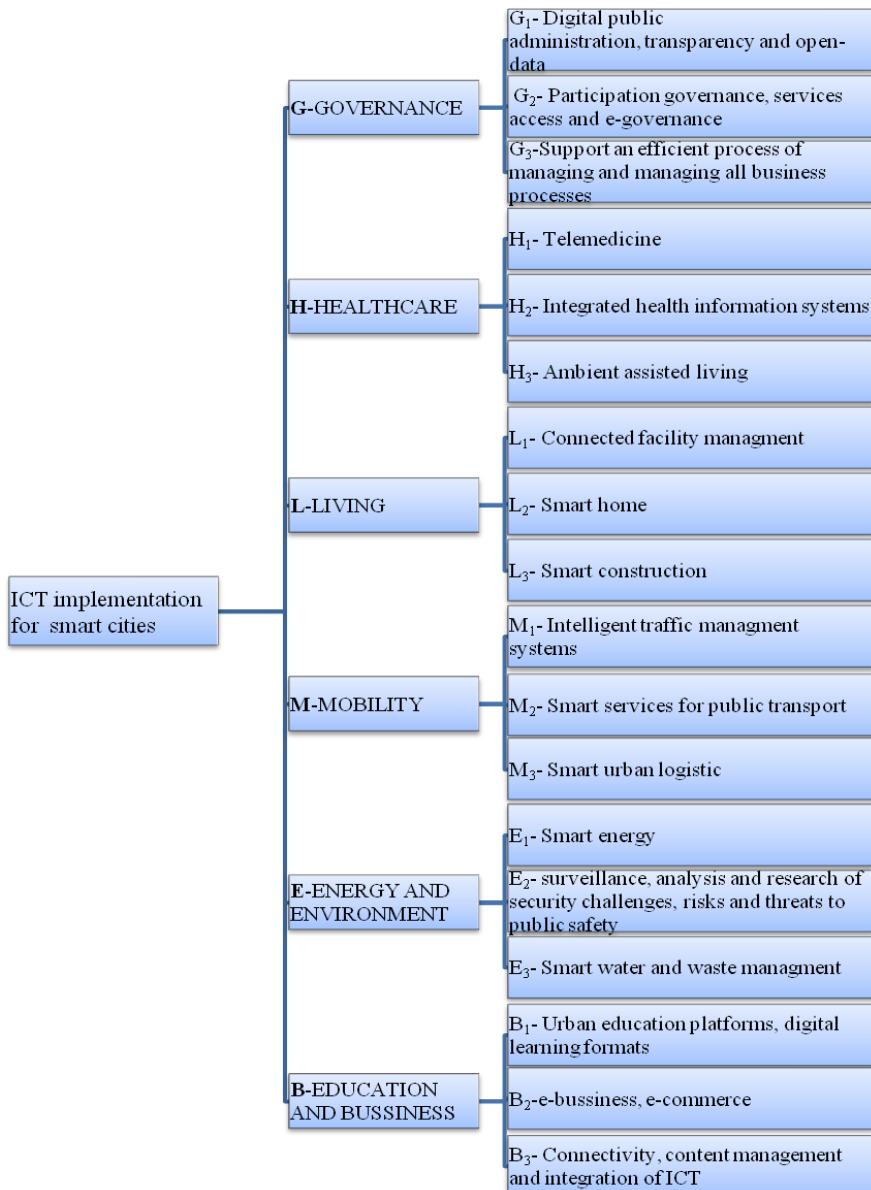
where: CI is the index of consistency, CR is the ratio of consistency, RI is a random index (consistency index of the matrix), n is the dimension of comparison matrix, λ_{\max} is the maximum eigenvalue of the matrix. If the comparison matrix applies to the CR < 0.10 alternatives priorities are counted as acceptable. Otherwise, the reasons for that unacceptably high inconsistency assessment need to be found.

Table 2. Random index for each matrix size

Matrix size (n)	1	2	3	4	5	6	7	8	9	10	11
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49	1.51

Source: Authors (adopted from Saaty 1982)

The following set of 6 (six) criteria has been accepted and grouped into 18 (eighteen) categories, in Hierarchy of Criteria as shown on the Picture 5. Criteria were evaluated based on expert assessment in Serbia.



Picture 5. The hierarchical structure of the AHP

Source: Authors

In the Table 3. the interdependence of the estimates of six basic groups of criteria is given and the matrix of comparisons based on (1) and (2) is formed (Tahir, Z., Malek, 2016). It represents a comparison of criteria at the first level. Since $CI=0.0028$; $CR=0.0022 < 0.10$ matrix is consistent. The table contain appropriate weight coefficients W_c .

Table 3. Comparison matrix in relation to the criterion groups on the first level (decision criteria)

	G	E	M	B	H	L	W_c
G	1	1	2	3	3	3	0.283207
E	1	1	2	3	3	3	0.283207
M	1/2	1/2	1	2	2	2	0.164016
B	1/3	1/3	1/2	1	1	1	0.0898568
H	1/3	1/3	1/2	1	1	1	0.0898568
L	1/3	1/3	1/2	1	1	1	0.0898568

Source: Authors

Table 4. presents the matrix of sub-criterion comparison relating to the attribute governance and the corresponding weight coefficients (W_{sc}). Since $CI=0.005$; $CR=0.008 < 0.10$ the matrix is consistent. Thus, for example, participation governance, services access and e-governance are more important than the efficient process of managing and managing all business processes with the relevant importance 3.

Table 4. Matrix of relevant importance of alternatives in relation to the attribute governance

	G_2	G_1	G_3	W_{sc}
G_2	1	2	3	0.539615
G_1	1/2	1	2	0.296961
G_3	1/3	1/2	1	0.163424

Source: Authors

Table 5. presents a matrix of sub-criteria comparison relating to the attribute energy and environment, and the weight coefficients (W_{sc}) are calculated within it. Thus, the smart energyis more important than the

surveillance, analysis and research of security, risks and threats to public safety with the relevant importance 2. Since $CI=0$; $CR=0<0.10$ the matrix of comparison is consistent.

Table 5. Comparison matrix of alternatives in relation to the attribute energy and environment

	E ₁	E ₂	E ₃	W _{SC}
E ₁	1	2	2	0.5
E ₂	1/2	1	1	0.25
E ₃	1/2	1	1	0.25

Source: Authors

Table 6. shows a comparison of the sub-criteria related to the mobility. Intelligent traffic management sistem is of greater importance than the smart urban logistic with the relevant importance 3. Since $CI=0.019$; $CR=0.033 <0.10$ the matrix of comparison is consistent.

Table 6. Comparison matrix of alternatives in relation to the mobility

	M ₁	M ₃	M ₂	W _{SC}
M ₁	1	3	5	0.636986
M ₃	1/3	1	3	0.258285
M ₂	1/5	1/3	1	0.104729

Source: Authors

In Table 7. the sub-criteria comparison matrix is related to the education and business, as well as corresponding weight coefficients are given. Since $CI=0.005$; $CR=0.008 <0.10$ the matrix of the comparison is consistent.

Table 7. Comparison matrix of alternative in relation education and bussines

	B ₁	B ₃	B ₂	W _{SC}
B ₁	1	2	3	0.539615
B ₃	1/2	1	2	0.296961
B ₂	1/3	1/2	1	0.163424

Source: Authors

Table 8. presents the matrix of sub-criteria comparison relating to the application of health. Table 9. provides a matrix for the comparison of sub-criteria related to the living . The both of the tables contain appropriate weight coefficients W_{SC} . Since $CI=0.019$; $CR=0.033<0.10$ both matrices of the comparison are consistent. Connected facility management is of greater importance than the smart construction with the relevant importance 5.

Table 8. Comparison matrix of alternatives in relation to the health

	H_2	H_3	H_1	W_{SC}
H_2	1	3	5	0.636986
H_3	1/3	1	3	0.258285
H_1	1/5	1/2	1	0.104729

Source: Authors

Table 9. Comparison matrix of alternatives in relation to the living

	L_1	L_2	L_3	W_{SC}
L_1	1	3	5	0.636986
L_2	1/3	1	3	0.258285
L_3	1/5	1/2	1	0.104729

Source: Authors

The proposed method performs the ranking criteria, using all available information with the aim of finding an optimal approach in drafting the smart city concept from the point of view of the role of ICT. The precise implementation is realized in actions applying the AHP method of ranking indicators with the suggestion of dominant importance. The results of ranking indicators are shown in Table 10.

Table 10: The ranking of indicators

INDICATORS	W_C	W_{SC}	$W=W_C \cdot W_{SC}$
Participation governance, services access and e-governance - G_2	0.2832	0.5396	0.1528
Smart energy - E_1	0.2832	0.5000	0.1416
Intelligent traffic management systems – M_1	0.1640	0.6370	0.1045
Digital public administration, transparency and	0.2832	0.2970	0.0841

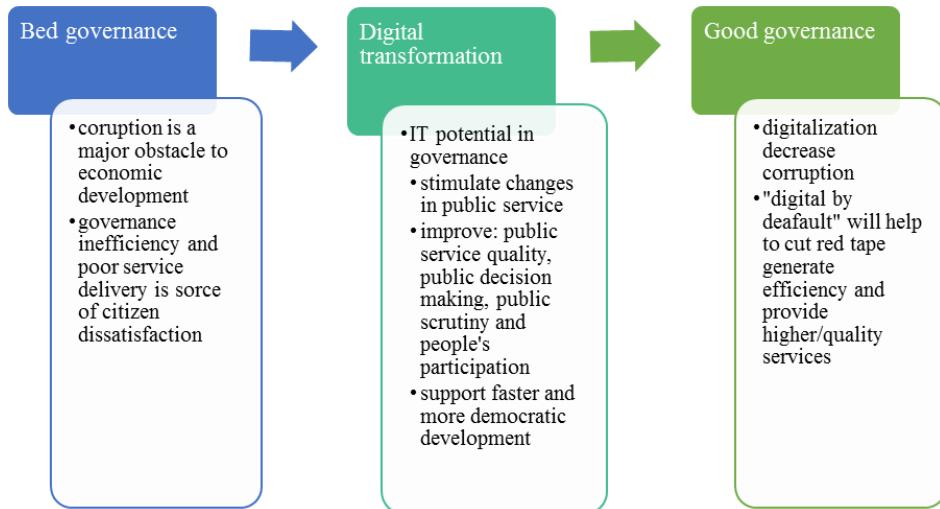
open-data – G ₁			
Surveillance, analysis and research of security, risks and threats to public safety – E ₂	0.2832	0.2500	0.0708
Smart water and smart waste management – E ₃	0.2832	0.2500	0.0708
Integrated health information systems – H ₂	0.0899	0.6370	0.0572
Connected facility management - L ₁	0.0899	0.6370	0.0572
Urban education platforms and digital learning formats – B ₁	0.0899	0.5396	0.0485
Support an efficient process of managing and managing all business processes – G ₃	0.2832	0.1634	0.0463
Smart urban logistic – M ₃	0.1640	0.2583	0.0424
Connectivity content management and integration of ICT- B ₃	0.0899	0.2970	0.0267
Ambient assisted living – H ₃	0.0899	0.2583	0.0232
Smart home - L ₂	0.0899	0.2583	0.0232
Smart services for public transport – M ₂	0.1640	0.1047	0.0172
E-business, e-commerce – B ₂	0.0899	0.1634	0.0147
Telemedicine – H ₁	0.0899	0.1047	0.0094
Smart construction – L ₃	0.0899	0.1047	0.0094

Source: The authors based on data obtained from software package Mathematics

TRENDS AFFECTING ICT FOR THE SMART CITY DEVELOPMENT

Indicator ranking uses the AHP method indicating a dominant role in participation governance, services access and e-governance. Good governance entails the sound public sector management (efficiency, effectiveness and economy), accountability, exchange and free flow of information (transparency), and a legal framework for development (justice, respect for human rights and liberties (World Bank). E-government should facilitate the transition from traditional performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing

governance administration activities. Picture 6. gives an overview smart governance and digital transformation.



Picture 6. Smart governance (about digital transformation)

Source: Authors

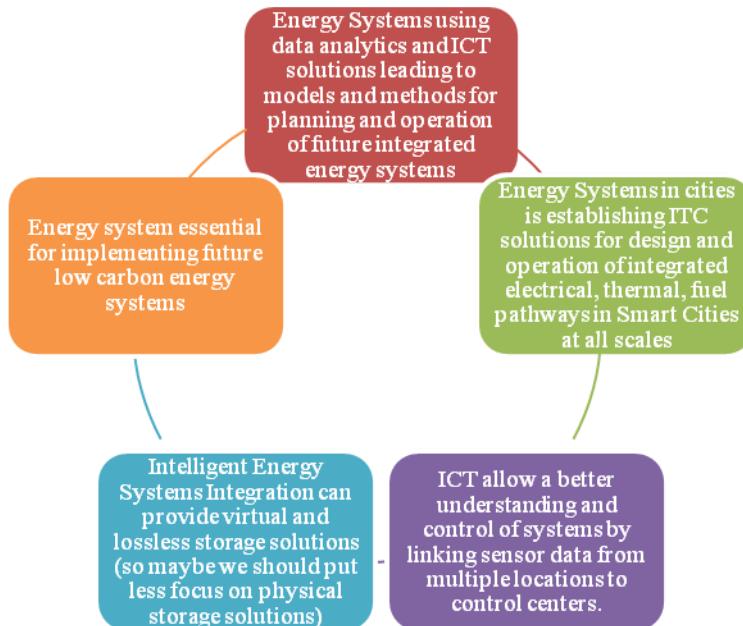
One more dominant factor that points to the role of ICT in the smart city concept is smart energy. New energy society will require new technology to balance the supply of and demand for energy. There should be a technical potential for the realization of the goal of smart energy-such as reducing or shifting demand for energy. The city has to be able to capture, manage and analyze data and deploy smart it in the public interest. A sustainable business model for delivering smart energy solutions is required. National policies, regulations and market rules should enable action at the level of the whole country. It is necessary to involve public and business engagement and participation. A new system of governance must be flexible so that it combines the top-down approach with bottom-up strategies or centrally defined rules with the proposals and actions of citizens (Glasmeier, & Christopherson, 2015; Mellouli, Luna-Reyes & Zhang, 2014).

Transitioning the conventional electricity grid to a smart grid with a high degree of renewable energy sources requires the substantial research in electricity generation, distribution, and consumption. In particular, on the side of the consumers, information and communication technologies (ICT) can play an important role to increase transparency, optimize energy efficiency and leverage sensing and actuation capabilities for a large variety of energy-related applications. Every day more and more electricity sensors (smart meters) are being deployed in private households, providing a vast amount of data that can

be stored, analyzed, and combined with other information sources such as smartphones or Web-enabled devices

Smart meter is an advanced energy meter that identifies consumption of electricity with more details and parameters compared to the conventional meter and can communicate this data with a utility company. Smart meter manages and controls energy from the grid, all the co-generation units and household appliances. Emerging software technologies can be used to program the smart meters to control and manage all the components according to the load demand. The adoption of smart meters will enable customers to find the quantity and cost of energy that is being consumed at that point of time. Picture 7. represents the Smart Energy City (SEC) scheme.

The city should select Key Performance Indicators (KPI) based on its own individual vision, goals, possibilities, and challenges etc. Key elements of the overall SEC definition are the following: resource system integration, strategic physical and digital planning. It will look across resource flows to determine optimal energy and resource efficiency throughout city systems. The integration should cover physical, organizational and social aspects: access to energy services, resilience, energy efficiency, renewable energy and active and engaged people.

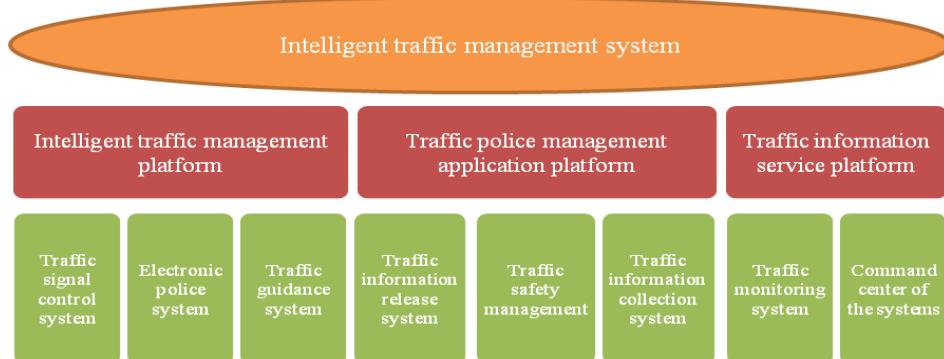


Picture 7. Smart Energy City - SEC

Source: Authors

The next key indicator is intelligent traffic management systems. Traffic management is a major challenge due to the growing number of vehicles and

multimodal transport. The demand for safety, operational performance, and transport efficiency is driving the demand for ITS market. The system improves the transport efficiency by offering features like traffic prediction, traveler information, advisory services, analytics and decision support, ticketing and fare collection, roadside sensors, global positioning systems, and radio frequency tags. Intelligent Transport System (ITS) is being adopted worldwide to build improved transport strategies, thereby marching towards smart transportation. The system is not just a software solution but is indeed a much wider concept. The data collected by the deployment of ITS can be a major asset for the auto manufacturers, which enables them to get a detailed insight into their vehicle performance in various environments. Not only automotive, ITS provides a broad scope of its data usage by other industries as well, such as Airline, Retail, and healthcare etc. Making the automotive industry ‘smarter’, ITS market is all set to experience a remarkable rise in the coming years. Picture 8. shows the structure of Intelligent traffic management systems and services. The market for intelligent transportation systems and services is growing steadily with rising need to reduce traffic congestions particularly in metropolitan cities across the world. In addition, intelligent transportation systems offer benefits such as reduced fuel consumption, travelling delays and environment protection.



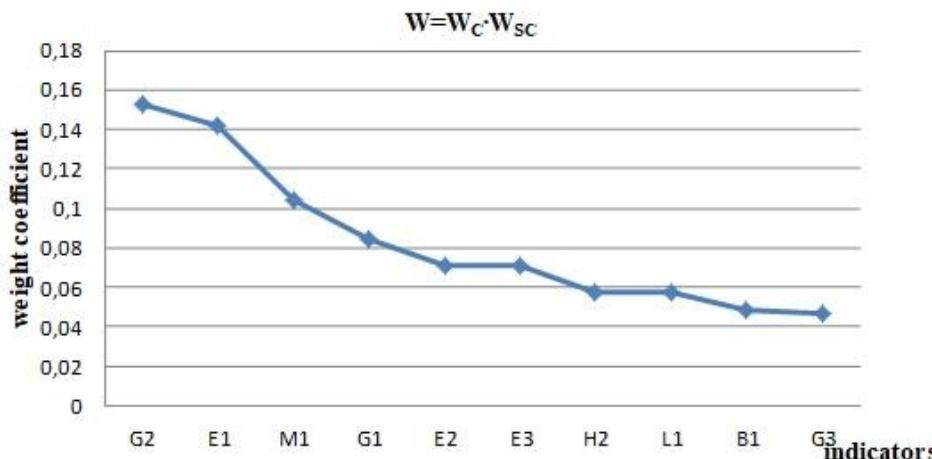
Picture 8. Schematic presentation: Intelligent traffic management systems and services

Source: Authors

CONCLUSION

Many cities extend beyond their infrastructure resources, and enlarged flow of population disables efficient city administration. City Governance can facilitate access to administration through a clear and compact access to e-business. The search for new channels of communication and good governance

are aspects of "smart administration.". Certain steps have been taken in Serbia, although the implementation of these steps is certainly late in relation to the developed countries of Europe. Establishing a methodology that will help us to find the optimal way to sustainable and smart city in Serbia, our research is an attempt of modeling the concept of smart city from the point of view of the role of ICT. In this paper, we have conducted a survey about site ranking of key indicators regarding the concept of Smart City using the Analytical hierarchy process, bearing in mind that a large number of factors have influence on defining the concept, with ranking six groups of criteria and eighteen sub-criteria were considered. As the dominant measures, the following measures stand out: participation governance, services access and e-governance. In addition to developing transparent governance and the use of open data, it is necessary to promote long learning and e-learning. The conclusion that for developing the appropriate strategy affordable services and the development of e-administration are necessary. Higher investment in education and retraining indicates that we have recognized ICT as an important segment of the future development of cities. Developing the Smart Energy concept is a further prerequisite for creating the desired strategy with Intelligent traffic management systems. Open-data lead to a more transparent, interactive digital public administration. By examining the role of ICT in the development of the smart city concept, we examined the key indicators and outlined the measures for the successful creation of such a concept. The starting point for the smart cities is in a few key indicators: Participation governance, services access and e-governance, Smart energy, Intelligent traffic management systems, Digital public administration, transparency and open-data as shown in Picture 9.



Picture 9. Key indicator ranking

Source: Authors

Innovation and inventiveness are necessary in the implementation of the concept of smart city for the introduction of systemic integration of ICT at all levels of local government as the bearer of sustainable development of the urban environment. Through the reduction of energy losses, a more humane attitude towards the environment, and especially through the integration of ICT, we need to enable a constant evaluation of all the systems that need to be integrated into the unique global concept of the smart city. Developing the concept of Smart energy future is a prerequisite for creating the desired strategy with the National action plan

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INTERNET AND INTERNET LAW

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ABSTRACT

Internet is today a generator of social development with a very high potential, but at the same time it is a phenomenon that could possibly lead to great dangers, especially in the last few years in which it has expanded. Being a communication system of interconnected computer networks, it is used for communication and exchange of all kinds of information. It is often called “the network of all networks”, since it integrates thousands of different computer networks all over the world and those networks use the same technical standards in interconnection. It is the latest and most powerful communication system. It is becoming the primary source of information and an ideal communication channel for all generations. The influence of internet on individuals and the entire nations and international communities in general is growing day by day. It has its very good sides and many positive examples of its use, but if we do not use it appropriately it can cause great damage. Whether it will be of good use or not depends solely on how we use it. Internet development brings about a great deal of legal issues, such as the right to intellectual property, copyrights, the right to secrecy, security, privacy, and confidentiality of data. Then we have topical issues like spreading slanders and rumours, encouraging hatred, pornography and many other problematic issues. Internet network is informal and has no legal regulations yet. What exists are only recommendations, and recommendations are not legally binding. This paper aims at pointing out to the fact that the legal basis of the media is inseparable from the state of law and ethics of the communities in which the media are used and that “legal and ethical chaos” has less in common with the technology itself, but rather with the state of ethics and legal regulative in societies in which those media exist.

Key words: *Internet, Network, LA, Ethics*

JEL Classification: *D80, I21*

INTRODUCTION

One of the phenomena that shapes and characterizes modern era is internet. Billions of people all over the world share a very versatile spectrum of fascinating, relevant, funny, irrelevant, truthful and important contents (Van E,

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L., and Marincola, F. M. 2011). Online tools and contents are emerging and spreading around in an enormous speed.

Development of a society in which free information access significantly determines our culture, human relations and knowledge also brings about a series of problems on a global level. Despite all advantages and relieves internet progress and development offer, we have also gotten a series of disadvantages, some of which can be easily solved and some are very alarming in regards to legality of them. Copyrights and intellectual property right impose an issue of responsibilities when it comes to any internet content, regardless of whether we are its users at home or our work place.

Internet users are often not sure what the code of conduct in public space of the global interactive and decentralized network is. It seems there is no order on network, because internet is a space without a legal authority, where chaos prevails and we are the ones who set the rules. Digital information transformation, as well as their use and organization make up digital culture which is determined by the regulations referring to copyrights.

National and international legal norms would have to offer clear code of conduct to participants in the cyber space and cover as many situations that occur on the network. In that way, users would be provided with the highest level of legal protection. Cyber space which has no clear physical boundaries since it is a virtual space, keeps making troubles for legal entities all over the world.

Thanks to internet, media have entered all spheres of our everyday lives and we do not use them only occasionally any more. They have outgrown all information systems, so they are now involved in our social activities, learning, upbringing, work, vacations, etc. Media create new needs, new way of life and affect how we shape new culture. These changes do not only interfere with the way we communicate today, but also with the way we interpret our own lives.

Internet makes us question what certain categories like personality, identity, society and time mean. We are revising the meaning of human freedom, ethical norms, social presence, space and communications. Technical progress has not only enabled a more modern way of communicating through an integration of different media, but it has also led to the occurrence of a new culture, hence new ways of expressing oneself, learning, solidarity and making connections. This can be easily noticed in newly occurred changes. Reversal in the field of social informing implies something more than a mere technical revolution; it implies a thorough transformation of elements by which the man interprets the surrounding world.

Scientists are also not immune to the attractiveness that comes with the use of virtual space and social networks. Social networks are the ones that enable scientists to quickly and efficiently communicate and inform their colleagues and wider public all over the world about their research activities (Van E, L., and Marincola, F. M., 2011). Modern information technologies and ways of

communicating makes the process of learning and acquiring new skills easier (Radovic-Markovic, M., Markovic, D., et al, 2017).

Their task is to create international conventions and national regulations in order to help in the solving of numerous piled up conflict situations on the network. Access to computers and computer networks is often denied, computer sabotages and frauds are more common, theft of copyright works, spreading of computer viruses, taking over virtual identities and control over other people's computers, changing, deleting or uploading incorrect data in databases and data storages, control over electronic communication, intrusions into protected networks and banking systems, spreading pornographic contents, spreading racial, religious and national hatred. Then we have numerous "stores" of illegal substances, as well as other illegal online stores. Management and control over cyber space, protection and safety of electronic contracts and electronic signatures, solving jurisdiction conflicts in court procedures, collecting valid electronic proofs in court and other procedures, as well as many other topical issues today represent a great challenge (Dragan P., Marko R., et al, 2012).

Information and communication technologies (ICT) have led us from the industrial to information era of social development by relying on the information on which our civilization developed alongside technology by which those information are processed. Manuel Castells, in the epilogue of his book Pekka Himanen, says that the information era is defined as a technological paradigm that refers to technology and not to social organization or institutions. Information era is the foundation for one type of social structure that we call a wired or networked society (Castells Manuel., 2002).

Manuel Castells points out that all societies so far have, in their essence, been information societies because they founded their development on knowledge gained via information, but what makes the wired society different from others is the technological paradigm brought by the revolution of information technology.

DEFINITIONS

Internet can be defined as a global information network composed of a large number of mutually connected computer networks that enables information transfer between the connected computers. Hence, internet could be defined as a network that was created by connecting all networks. This literally means that the global network that connects millions of computers, local (LAN) and international (WAN) networks, into one common network is the Internet. Computers and some of its networks are connected to the network in a different way, so we can distinguish several different types of internet connections.

Cyber space has dimensionality, continuity, density and limits. It has its geography, physics and nature. Human laws rule in that space. In cyber space a regular man can indirectly look for, create or control a piece of information. He can have fun or make progress, be alone or look for company, gain or lose

power, etc. Cyber space is a life lived and re-lived in virtual texts. It is a world and a professional space for work and fun, both real and virtual. It is an area of power or as Benedict claims “it is a constantly re-designed public sphere of social, political, economic and cultural interaction” (Benedict, 2001).

Virtual space is a “wired world” that connects millions of computers and data bases. Virtual space is also an information space in which data are organized in such a way to give an illusion of control, mobility and accessibility of information, wherein it is possible to, via networked simulation with an enormous number of users, get the “feeling” of getting feedback and experience a real simulation of the world. (Horrocks, 2001).

Basically, a regular user in most parts of the world is connected to internet by a modem. On the other hand, there are connections by which computers are connected and that we call servers, hosts or nodes. These computers are especially powerful and capable of processing an enormous quantity of data and through them individuals are connected to internet by a modem.

Servers are most commonly connected by satellite and radio connections, optical and telephone cables. Those computers are then connected with special computers that we call routers. Routers monitor where those data that we send via internet go, and they decide their direction.

By comparing internet to traditional data transfer media, such as radio or television, we can see that internet is a type of network that has no central spot from which it is controlled. It is a decentralized global network. Data travel through the network divided into smaller packages. Each of these packages contains data about where the data came from and where it is headed. This is why it is not important what route these data take, as long as they reach their destination , which means it is not important what paths the message takes because it will eventually find its destination.

Right message path and its arrival on the destination is in the hands of TCP/IP protocol whose task is to make sure that the message reaches its destination in the form in which it is sent. There is a client-server architecture on internet, i.e. client-server relation between computers. In the client-server architecture, some computers act as servers or data senders, and other computers act as clients or data receivers in a way that enables a client computer to access many different servers and the individual server can be accessed from different client computers.

When the client computer establishes a connection with the server containing the needed information, the server sends them to the client in form of a file. There is computer program that we call a browser that enables the user to search the document.

Internet is much more than a computer network and that is why, when we talk about its wider influence on information systems and its use in general, we use the term “Internet technologies”.

RESEARCH METHODS

Internet technologies change the time and space relations between people and occurrences, research demands the use of methodology and methodological approaches to researching. Along the way, methodological combinations of quantitative and qualitative technique and procedures are used. Potential research access to data and methods are presented and they can be used in internet research.

By adding elements of one methodology to another, we improve the sophistication of the quality and profiling of our research, and by integrating research methods, we adjust and complement disadvantages of certain methods. However, in real empirical research, qualitative and quantitative still differ significantly, so in the orientation of this approach, it was clearer to affirm such methodological definitions.

It is especially important for the development of the sociological approach and methodology, as well as of other relevant methodologies in the field of social sciences and humanities. It can be concluded that the perspectives of internet as a research subject are a great challenge, but they are also very complex and unpredictable.

RESEARCH SUBJECT

The multimedia network we call internet, has grown into a global, planetary network whose influence is so big that in 1991 it was pronounced the “common good of mankind”, like water, air, forests, etc. Likewise, internet is considered the latest step in conquering the space of human freedoms. False appearances that internet creates are, at least from this perspective, almost entirely complete, man really acts in an unreal situation, he interactively communicates with abstract correspondents, pays goods or services with virtual money, buys material goods by ordering and paying for the illusion of it, participates at a conference with other participants who have got no clue who the other person is and who are scattered all over the world.

It is possible to search the virtual space in two ways, as a step towards the spirituality of the real world we live in or a step towards the creation of the world we fantasize about, a world of abstraction, memories and knowledge. However, human interaction carried out face to face will probably not be replaced with the virtual space which could, on the other hand, solve or affect social problems that stem from the lack of communication. Researchers could explore the processes behind the expansion of the freedom of association regardless of time and space distance. In a sociological sense, this is the way to advance traditional understanding of a community as a closed, unchangeable, monolith and homogenous organization. Virtual community is real because it speaks to people who do not have the right to vote, and would like to be a part of a community. They are places where communities are built and maintained.

Since the development of a virtual community is relatively short, if uncertainties and problems occur, it is easier to step away from that kind of a community than from any other physical community.

Time and space distances do not exist in the virtual world. When rules of digital communications and virtual spaces kick in, everything happens here and now. With the use of internet, all planetary occurrences become closer to all of us. Spatial distances, time and speed are no longer considered competitive advantages. Today's advantages stem from knowledge, creativity, skills and will to initiate something new. The virtual reality paradigm and "the internet way of life", as called by Bill Gates, bring strong and complex social changes.

Without a doubt, internet is a good influence on the overall level of the quality of living, it liberates people from numerous physical and other unpredictable problems. On the other hand, we can see some negative tendencies today, such as an intense alienation of people due to a reduced need to move around in real space, hence a massive increase in the range and modality of cybercrime. Individual's privacy is in greater danger, which can seem a bit paradoxical at first. People are locking themselves in virtual worlds in which you can enter only as an intruder without welcome or support.

Information transfer speed, which strives towards the speed of light, as well as the technology of 3D computer graphics, animations and simulations make the users believe the space in which they can act is limitless. This all leads to the development of a new and different way of life in real reality which we are inspired to explore so as to understand and explain it better. Development of the virtual world in which cultural changes are getting bigger and bigger, e.g. transfer to the internet way of life, is happening. Complete potential of this new technology will be shown to us by young people growing up with this technology and see it as an integral part of their environment. Students develop their internet skills very quickly and they will definitely help them learn new things throughout their lives. Their approach to internet tells us how the virtual world will be used in the days to come, claims Bill Gates.

KEY FINDINGS

More than half of the world population is now online, and the latest data show that almost $\frac{1}{4}$ of a billion new users joined the internet in 2017. Africa reported the fastest growth rate of internet users, i.e. 20% more than in the previous year.

More than 200 million people got their first mobile device in 2017, and $\frac{2}{3}$ of the total world population, which is around 7.6 billion people, now own a mobile phone. More than half the phones used today are "smart" devices, so people find it easier to enjoy reach internet experiences wherever they are.

Use of social media is still growing rapidly. More than 3 billion people around the world are today using social media every month, and 9 out of 10 users access their social platforms via mobile devices.

Key finding from this year's reports in a detailed analysis of the digital growth in 2018 are:

- The number of global network users in 2018 is 4.021 billion, which is 7% more than last year,
- The number of social media users in 2018 is 3.196 billion, which is 13% more than last years,
- Mobile phones are in 2018 used by 5.135 billion people, which is 4% more than last year.

The number of internet users is not the only thing that has increased this year. People spend much more time online than they had in the previous 12 months. The latest data show that the average internet user spends around 6 hours a day using devices and internet services – it is approximately one $\frac{1}{4}$ of their lives.

In 2018, internet access is not yet equally distribute around the world, but things are beginning to change. Internet growth rate can still be low in most of the Central Africa and South Asia, but these regions also have the fastest growth in internet technology adoption and implementation.

The number of users in Africa has increased for more than 20%. With the increase in the number of users in Mali, internet was used 6 times more than in January 2017. The number of users in Sierra Leone, Nigeria and Mozambique has more than doubled since last year.

More than half of the world population has a mobile phone today, and the majority of people use smart phones. The number of mobile phone users around the world has increased by more than 4% annually, smart phones are the most desirable choice on the Internet. The latest data show that people today spend 7 time more time using mobile apps in comparison to mobile web browsers which shows us that the share of mobile devices on the internet is bigger and bigger. The latest data from Facebook confirm the conclusion that only 5% of global user population do not access their platform via mobile devices.

Almost one million people has, on a daily basis, used social media more often than they did the previous year, which is 11 new users every second. Total number of people who use social media has increased by 13% in the last 12 months, while Central and South Asia reported highest increase, by 90% and 33% respectively.

Saudi Arabia has reported the highest growth rate of individual countries in 40 monitored economies with 32%, where only India lags behind with 31% of annual user growth rate. We can see an increasing percent of older users joining social media. On Facebook, the number of users over 65 years of age has increased by almost 20% in the last 12 months. The number of teenagers using Facebook has also increased, but the number of users between 13 and 17 years of age has increased by only 5% since January last year. The latest Facebook

data show that women are still insufficiently present in most of Central Africa, Middle East and South Asia which is an alarming fact for this region.

Third year in a row, the Filipinos spend the most time on social media, and an average user in the country spends almost 4 hours on social media every day.

2017 was another successful year showing an impressive user growth for all Facebook platforms. The basic Facebook platform still dominates and at the beginning of 2018 it has reached almost 2.7 billion users.

WhatsApp and Facebook Messenger have grown twice as much, as well as the basic Facebook platform. The number of people using all messenger apps has increased by 30% this year. Both apps have a similar number of users, but the latest data show that WhatsApp has a more powerful geographic position. WhatsApp is the biggest app so far which is being used in 128 world countries in comparison to 72 countries in which Facebook Messenger is being used.

Data transfer for mobile devices is becoming faster all over the world. Reports show us that more than 60% of mobile networks today can be classified as “broadband network”. However, there are significant differences in the speed of mobile networks between countries. Mobile users in Norway enjoy the average speed of 60 Mbps which is almost three times greater speed than the global average. Mobile users in more than 6 countries including Singapore, the Netherlands and UAE are today enjoying an average of 50 Mbps. On the other side of the spectrum, mobile users in 18 countries including India and Indonesia still have to put up with an average speed of 10 Mbps.

However, there is good news, average mobile connection speed increased by more than 30% during last year. This is not good news only for the impatient ones. Faster connections can also help in stress reduction. Research show that only a few minutes delay while waiting for a video to get loaded causes the same amount of anxiety as when watching a horror movie or when attempting to solve a complex mathematical problem.

Thanks to these relatively greater transfer speeds, an average smart phone user across the world spend almost 3 GB of data every month – which is a 50% increase in comparison to previous times.

The latest data show that the total e-trading market value of consumer goods has increased by 16%. Total annual consumption in 2017 reached almost 1.5 trillion dollars and fashion products are the largest individual category. All over the world, the number of people using e-trading platforms for purchasing consumer goods (e.g. fashion, food, electronics and toys) has increased by 8% and almost 1.8 billion people all over the world buy online (<https://digitalreport.wearesocial.com/>).

Almost 45% of all internet users are today using e-commerce websites, but the share amongst countries keeps fluctuating. Likewise, the amount every person spends on e-commerce is growing, with an average income per user of 833 dollars. The British are the greatest e-commerce consumers and the annual

spending in Great Britain is now more than 2000 dollars per user. It is important to emphasize these are data about consumer goods only. If we add consumption of other categories, such as traveling, digital content and mobile apps, total global e-commerce value will probably be closer to 2 billion dollars.

IT LAW

IT law as one the most topical and youngest fields in law is developing out of the need to expand and improve the existing legal framework and to create a new one and to establish legal safety and greater security for all users. Cyber law or IT law implies regulation of complex network relations, freedom of speech, right to privacy, intellectual property, internet safety, database safety and copyrights on computer programs, criminal acts that stemmed from internet activities, online exchange of goods and services, as well as online gambling.

IT law, in its broader meaning, covers all legal areas and segments of the legal system that concern internet and it provides protection for internet users.

Due to a sensitive relationship between users and internet providers, collection of data on certain individuals, right to privacy, abuse of e-commerce, protection of data on banking accounts and pay cards are most definitely some of the greatest problems internet users are faced with today. This is why business systems, which collect the necessary data, are expected to do everything in their power to prevent hacker attacks and other illegal activities.

On the other hand, there are legal activities providers perform when collecting data on individuals on the network and which they, alongside a formal consent, use to increase profit and value of their own companies. One more problem is when official state institutions and the government keep track of users' activities.

Likewise, there are a lot of problems concerning internet safety in the protection of copyrights and intellectual property rights for which there is no 100% protection, and the easiness of violating these rights is an additional problem.

a. Criminal acts related to Internet and Internet security

Criminal law is one of the most important areas covered by the IT law in the protection of legal and physical entities using internet for private or business purposes.

Alongside repressive activity, by defining legal norms for the performance of lawfully defined acts, IT law studies the weaknesses in network work and its constant improvement which helps significantly in the prevention of criminal acts in cyber space.

In almost every more developed country in the world, there are specially trained and skilled departments within the police force and prosecution which aim at solving these cases.

Even though state authorities are in charge of protecting internet users, many things can be prevented by informing the citizens, i.e. company employees, on all important aspects of preventive behaviour and protection.

This is why it is important to stay updated because technology is developing very fast, so the ones who use it to perform criminal acts, advance and improve really fast too. These kinds of criminal acts have the highest growth rate in the world. Internet enables us to act outside of our national borders, so these problems are no longer a segment of the national legislation only. They are a problem in all world countries and we need to work on them with joint forces.

b. Internet law and intellectual property

When internet came, the intellectual property rights faced many temptations, so it is necessary to have a specific approach to intellectual property protection when talking about the cyber space. Being the most present and the most important segment of intellectual property, copyrights are the most vulnerable. Trademarks are today used to mark products and services that are offered to us virtually, as well as different website platforms and not only traditional kinds of goods and services.

Violation of trademark rights is a common example of rights violation when a domain on the network that consists someone else's trademark is falsely registered. The practice of buying internet domains that are cheaper in order to sell them has caused the expansion of the use of this regulative in practice and in our country. This kind of domain name abuse is known as "*Cybersquatting*".

More known frauds related to internet domains are "*Typo-squatting*" that happens when a domain that is registered is similar to the original domain and through a paid search it confuses the user and makes him believe he is on the right address; and "*Pagejacking*" when copied content of the original webpage is published on another website which is fake and is made to look original, but most commonly with changes in the banking account number and payment instructions. Internet frauds use this method for the so-called "*phishing*".

That is why the Internet Corporation for Assigned Names and Numbers (ICANN) brought the Domain Name Dispute Resolution Policy (UCRP) for a faster and more efficient dispute-solving, without having to go to traditional courts. When it comes to the .RS domain of the Republic of Serbia, a special commission for solving all disputes regarding the national internet domain was formed within the Chamber of Commerce of Serbia with the authorization of the ICANN foundation.

c. Cyber space contracts

Even though the majority of internet users think the contractual right cannot be applied on the internet, it is a wrong opinion. Almost all information exchanges, i.e. buying of goods or services on any more professional platform

demands of us to agree with the Terms and Conditions. It is actually an acceptance of the offer for the conclusion of the agreement.

THE RIGHT TO PRIVACY AND THE PROTECTION OF PERSONAL DATA

Control and regulation of personal data that are collected by certain individuals called the processors is today a massive problem, and it will be an even greater one, both for the individual and the entire civilization. Personal data have, with the occurrence of new technologies, become a product. For now, only for the purposes of marketing, offer personalization and artificial intelligence.

Even though all states put a limit on how long they keep these data, you can never be sure about where the data are and how long they will be kept. This is why it is important to involve prominent state institutions in the solving of this problem.

Not all legal systems have the same level of protection and approach to privacy which goes from the level of subjective rights whose realization is a personal matter of all individuals to the level of basic human rights, i.e. protection of personal data, as proclaimed by the EU regulative. The General Domain Name Dispute Resolution Policy (GDPR) completely changed our approach to the collection and processing of personal data, inside and outside the EU borders.

a. Spam mails as the problem of IT law

Spam is not specifically regulated by law in our country, but its ban can be derived from a number of other regulations governing advertising, consumer protection and Internet security.

Considering that over 80% of all emails sent to the United States are spam emails, and about 20% of users have at least once bought some goods through spam, it is quite clear why this type of aggressive advertising is so present in the world. It is a type of Internet crime that makes it very difficult to be traced back to spammers because it is of an international character.

The most effective form of protection in these circumstances is precaution. So you should never respond to spam, nor start any communication, you should not even post your email to a website, but rather some kind of protected contact form. Also, before leaving the data, you should carefully read the terms of website use, you should use the spam filter and create and leave another email address for sharing information on public Internet platforms.

Internet law differs from the IT law that regulates the flow of digital information and digital money, software, and the legal side of encryption and cryptography.

b. Intellectual property and copyrights on the Internet

Internet space currently has the largest amount of information in the world. Many Internet users, due to insufficient knowledge of rights, believe that they can use everything on the internet in any way they wish, so they often cross the red line and violate copyrights.

Many are even quite wrongly convinced that copyrights are not protected in cyberspace. A large number of Internet users think that if there is no record of copying in digital form, i.e. protected copyrights, they can be freely used and that the work does not have copyright protection.

These are misconceptions that can cost internet users a lot, since every copyright work on the Internet is actually protected by copyright under the Berne Convention and the State's internal copyright law, regardless of whether it is indicated or not on the work itself.

Of course, there are a lot of authorial works on the Internet, whose use is allowed to everyone, but this must be explicitly indicated on the author's part. There is a possibility for authors to renounce part of the copyright in the interest of users in cyberspace, but this must be explicitly indicated. Works whose copyrights expire, due to the flow of time, fall into the public domain, or become a public good.

Can internet users copy or distribute authorial works in cyberspace without the knowledge of the author? What would be the "fair use" of the copyright work? What are the responsibilities and conditions that need to be met in order for an individual or legal person to be responsible for copyright infringement? These and many other issues are present today and will be present in the future as dilemmas of exceptional importance.

The development of the Internet and information and communication technologies has led to a large increase in various forms of endangering intellectual property in the virtual space. An almost unlimited access to a large number of authorial works, scientific works, literary works, musical works, video works, and other works in digital form, has shaken the concept of traditional copyright.

INTELLECTUAL PROPERTY AND COPYRIGHTS

The development of information and communication technologies, networks, new digital world, and the openness of Internet space have led to many challenges in many areas of the classical concept of law, particularly in the field of copyright and intellectual property rights.

The concept of "Intellectual Property" was defined in the Convention of the World Intellectual Property Organization, adopted in 1967 and subsequently put into effect in 1979. In the second article of this Convention, the definition of intellectual property rights is given:

1. literary, scientific and artistic works,

2. interpretations of artists and performers, radio and TV shows and phonograms,
3. inventions which belong to all areas of human activity,
4. scientific discoveries,
5. industrial design,
6. factory, service and trade marks, as well as trade names,
7. protection against unfair matches,
8. other rights related to intellectual activities in
 - a. scientific field,
 - b. industrial field,
 - c. literary field and
 - d. artistic field.

The term *intellectual property* denotes the creativity of the mind, i.e. this concept primarily covers new inventions, symbols, works of art and literature, images and names used in trade. Intellectual property does not constitute a concrete, material property of some objects, but rather constitutes a set of powers, that is, a right recognized by the legal order of a country to an individual who is a holder of intellectual property rights. These rights are given to inventors, authors and all other intellectual property rights creators.

Intellectual property is a result of personal innovation and creativity and it is unique. It can be from any area and any activity: from any technical field, the product under which the name is offered or sold, product or service, film, picture, song, etc. In almost each individual case, intellectual property by its creation stimulates progress, transforms society, and adds value to our lives. (*Law on Copyright and Related Rights*)

Intellectual property is divided into two areas: industrial property and copyrights.

Industrial property includes patents for inventions, trademarks, industrial designs and designations of origin, and geographical indications and topography of integrated circuits.

As a concept, copyright was created in the 18th century, whose basic idea was to protect the rights of the author, since books were printed without the author's permission and without payment to the authors. The copyright was firstly protected in the printing industry, and only later it expanded to other author's works.

Certain authors specifically distinguish databases and data warehouses in the field of intellectual property as a unique area in terms of intellectual property.

The term copyright today encompasses, in fact, two notions, the concept of related rights and copyrights.

Under the copyright law, the law in Serbia includes: the right of a film producer, the right of interpreters, the rights of the producer of the show, the right of the phonogram producers, the right to develop a database, and the right of the publisher. The right of the publisher includes:

1. The right for the first publisher, the printing of a free work, the work that has not been previously issued and which belongs to the public domain, and
2. The right of publishers to issue works to a special fee. (*Law on Copyright and Related Rights*)

Today human creations depend on copyrights and related rights, i.e. rights that provide the authors with a certain kind of incentive in form of money fees and acknowledgements and a certain kind of safety that their work can be distributed without being wrongfully copied and even if it happens, they have copyright insurance.

The copyright owner has the exclusive right to reproduce copyrighted work, to process it and create a new copyright work, to distribute copies of the copyright work, to perform it, or to represent it in public. Any person who uses one of these rights without the permission of the author infringes the copyright of the author, except in cases where the copyright has expired.

Copyright expires 70 years after the author's death, regardless of when the work is published. The copyright of the anonymous author's work and the work that is published under the pseudonym expires 70 years after the publishing date.

a. *Copyrights in cyber space and its use*

Google has organized a digital library containing a large number of books that have been digitized. Since the company did not have the approval of most authors to digitize their books, Google had to reimburse the costs to the authors which was decided in a dispute that happened between the publishers and Google in 2011.

File sharing in cyberspace today is the most common form of copyright infringement. Well known is the Napster case that happened in 2000. Napster, as a "peer to peer" music files sharing service, enabled millions of users to share mostly copyrighted music files, which caused a large number of litigation. In the meantime, "Napster" bankrupted but the number of such services in the virtual space has risen to unprecedented proportions. Such services on the Internet do not offer music files only, but they also offer a lot of other types of

files, from video files, movies, music tracks, computer programs, or software, etc.

DIGITAL RIGHTS MANAGEMENT

Digital rights management (DRM) is a term that denotes technologies that can control access to all kinds of digitized information in the virtual world, from copyright owners to publishers, in order to limit the use of digital content. This is just one of the ways to protect copyright and constitute a digital lock of intellectual property in order to prevent theft.

A typical practical example is Apple's iTunes, Digital Rights Management. This type of digital content management is supported by a series of international legal acts. In terms of technology, digital rights management provides control over the use of digital media by restricting access, copying or conversion to other formats by the final user.

Opponents of this digital rights management system in cyberspace claim that in this way digital controlling prevents users from doing something that is completely in line with the law: to copy CDs or DVDs for their own needs, to use necessary research records and free access to all works that are in the public domain for educational purposes in accordance with fair use. These arguments defend the thesis that the management of digital rights is in violation of applicable copyright laws.

It is important to highlight the difference between analogue and digital recordings. Analogue audio or video recordings on records, magnetic tapes, audio or video cassettes store the signal as a continuous wave as opposed to a digital signal that is now used, and which consists of data in form of a combination of numbers: 0 and 1.

When it comes to analogue recordings on the data carrier, the recording is physical. In case of digital recordings on the other hand, we record data, i.e. enter data into a computer system. By copying it and simply using it, analogue media lose their quality while digital recordings remain completely the same without the quality loss. Analogue recordings can be converted into digital recordings.

The most commonly used digital rights management technologies are in the entertainment industry, music, computer games, e-books, radio and TV broadcasting, etc. This technology is based on special contracts that users agree to in order to be able to access targeted websites or download required software. These technologies control the access and reproduction of online information, even their copying for personal use.

PUBLIC DOMAIN

Public ownership, or problems related to public domain, is one of the most commonly discussed issues in relation to intellectual property.

Online public domain today denotes intellectual property as *public property*. It represents the legal institute of Anglo-Saxon law and signifies knowledge and innovations in relation to which no person or other legal entity cannot or does not wish to establish or maintain ownership interests, and such innovations and works of authorship make up the intellectual heritage which in principle anyone can use or exploit.

Historically, the public domain preceded the protection of intellectual property. In the beginning, all scientific and cultural works were an integral part of the public domain, only later in the development of the market and the printing industry, the regulations protecting copyright were passed. The notion of a public domain was shaped at the end of the 19th century. Victor Hugo, a French writer, determined two main features of the public domain in 1878:

- a. First, after the author publishes his/her work, it no longer belongs solely to him/her, but it belongs to the human spirit in general and becomes a public good, and
- b. Second, fate of any work is to one day become a public good.

No license is required to copy or distribute, or use material belonging to the public domain, regardless of its purpose, both private and commercial. You can do it all for free, without paying the right to use it, permanent or temporary lease of the license, and so on.

The public domain can also be defined as the opposite of various forms of intellectual property protection, the public domain stands opposite the protected brands, the term "trademark" is accepted in our country, and so on. Any material under "public ownership" is not legally protected from being used by the members of a society. We can say that the material that is in public property serves as *the starting point for creating a new creative work*.

When we define the concept of public property or public ownership, we can say that this is what belongs to all of us. When we use the work belonging to the public domain, we do not have the obligation to refer to the actual author, although this is considered to be a fair relationship. However, it should be borne in mind that although creative use of publicly owned works is permitted, as well as its alteration, promotion and incorporation into other works, it does not mean that the new work that was then created is public property. It can belong to the domain of copyright protection, that is, it can be in the property of the creator, unless it is specifically stated that the author also puts this newly created work into public ownership.

Copyrights should achieve a fair balance between the right of the author to control the spread of his work and the public interest to make the work as spread out as possible and available to as many people as possible.

Public good is generally defined as a material that is not subject to copyright protection or the material for which copyrights have expired. Public ownership points to the complete lack of copyright protection.

Material that is declared a property of the public domain can be considered a part of the "public cultural heritage", all members of society should be encouraged to use it at all times, including modifying, copying, improving, and it can even be used for commercial purposes.

a. *Innovations and authorial works can be found in the public domain*

1. *Absence of legal protection because they are,*

Creative works that were created before the adoption of legislation in this area, the most famous works of Beethoven, Shakespeare, Archimedes' inventions, etc., then works of folk creations, traditional folklore, works for which the author is unknown, then works that, due to lack of creativity are not subject to the protection of copyright laws, such as court decisions, mathematical formulas, intuitively organized databases, search results, etc.

2. *Expiration of legal protection due to deadlines,*

Most copyrights have a shelf life and with the expiration of that deadline, a patent or work is transferred to the public good. Shelf life for patents is usually 20 years, and several preconditions need to be fulfilled for copyrights:

- a. a work needs to be published before 1 January 1923 or at least 95 years before 1 January of the current year,
- b. owner of the copyright is supposed to be deceased for 70 years before 1 January of the current year,
- c. neither of the states that signed the Bern Convention for Copyrights has given permanent copyright to any piece of work,
- d. EU and USA have not brought the legal act to extend the duration of copyrights.

3. *Waiver of legal protection*

All works created by the US government were put in public ownership by its copyright law. Authors and individual institutions can transfer their deeds to public ownership and waive legal protection with licenses for free documentation, free software licenses, "copyleft" licenses, and "Creative Common 0" licenses. When the author voluntarily and irrevocably puts his work in public ownership, thereby giving up all the rights that he had previously had on the work, he can no longer revoke, or restore the rights over that work later on.

b. *Protection of copyrights on the Internet, national and international rules*

This matter has been regulated internationally, by the Berne Convention on the Protection of Artistic and Literary Works (the Convention has 164

signatories) ever since 1886. In 1896, changes were made in Paris, in Berlin in 1908. It was completed in Bern in 1914, and in 1928 the convention was revised in Rome. In Brussels in 1948, in Stockholm in 1967 and in Paris in 1971, it was amended in 1979.

Also important in this area is the Geneva Convention for the Protection of Producers of Phonograms from Unauthorized Duplication from the year 1971 on the Treatment of Copyright and their Protection in the Field of Sound Recordings. This Convention allows and gives authorization to take necessary measures against imports of piracy in the form of unauthorized music recordings as well as persons distributing and reselling them. WIPO administers 24 Conventions, Protocols and Agreements, Serbia is a signatory of them all.

c. Data protection in computer systems and networks

Simply put, the Internet functions as a large (world) computer network. Hence, the general rules on data protection that apply in every other computer network can be applied to the Internet's rules of conduct, but always having in mind the specifics of Internet use. Data protection can be directed to a functional character, such as:

- a. Certain data types have accessibility limitations,
- b. Obligation of non-state entities to give information to state authorities and organizations; and informing citizens about the data collected about it and for what purpose (Prlja D., Reljanovic M., 2015).

Data protection thus includes a situation in which information that belongs to citizens, state and non-state institutions, services and bodies is exchanged in a certain way, or simply made available to certain or all Internet users.

Broadly speaking, the study of data protection on the Internet may include legal solutions concerning the existence of certain bodies that ensure the application of data protection rules. These data can refer to the work and functioning of legal entities, institutions, state bodies, as well as personal data, and the protection itself implies two activities:

- a. First, data must not be made public if not stipulated by regulations;
- b. And secondly, the problem of ensuring the integrity of computer systems and networks in which data is stored on the Internet and are in some restrictive form, with a strictly defined number of users who have access and are at their disposal further on.

Measures aimed at securing the system are applied to achieve different goals of security and safety of computerized information systems, and are of different types, such as:

- a) measures for the protection and security of integrity of computer hardware, that is, equipment, terminals, communication channels and the like,

- b) measures for the protection and security of integrity of software, that is, program components of systems, programs, files, databases, etc.,
- c) measures of physical security of premises, buildings, vehicles and the like, from accidental or deliberate damage,
- d) measures that contribute to the professional training of employees, maintenance and improvement of propagated standards,
- e) standards for maintenance and improvement of standards "fall under regular procedures", etc.

Since the legislative principles that protect data in cyberspace differ, there is a difference in the bodies and institutions that are legally designated for the implementation of this legislation. Although, specific bodies that would have this competence are introduced, comparative legislation governs the diversity of their organization, powers, and composition.

"In some countries, data protection authorities are organized as an individual body with different names. For example, in Canada it is called the individual data protection authority; in Germany it is called the "Personal Data Protection Officer"; in England "Data Protection Registrar", etc. In federal states, say in Germany, in addition to "Federal Data Protection Commissioner", there are also appropriate "Land Data Protection Trusts" in certain federal states.

In contrast to this solution, other countries that have formed a special body that takes care of data protection have formed it in a collegial form. These collegial bodies, which are entrusted with the protection of personal data, differ in both their names and their structure, as well as their competencies and authorizations.

c. Misuses arising from Internet use

The most drastic form of privacy violation by using electronic communications is identity theft, in order to gain material or some other advantage (phishing). This happens when we carelessly use our data, credit card number, ID number, pin codes and other passwords that can be used to access our private information. Once our private data is compromised and becomes accessible to the person who has no authority to access them, it is possible to use them for various illegal purposes. The person who has received private data presents themselves as a person whose data was illegally obtained and, for example, purchases in online stores, transfers money from a credit card, concludes electronic contracts, and so on.

It is possible to imagine other forms of privacy violation of persons, which in most cases are not defined as punishable, such as the use of alien data or a person where there is no intention to take over the identity of a person, the use of data that a person leaves on the Internet for advertising purposes. All these procedures are in violation of the right to privacy of persons, as well as other personal rights.

It should be noted that they are, however, significantly different than classical criminal acts in the way they are executed, what they result in, as well as in the social danger they carry. How, for example, should we characterize representation under someone else's name? This is an issue that has not been resolved in the legislation so far, both in Serbia and in other countries.

It is obvious that the theft of data from someone else's identity does not entail consequences that would be socially dangerous, unless a person is using it to commit a criminal offense, such as paedophilia, by representing themselves as children in order to gain the trust of potential victims. However, taking other people's photos and making fictitious profiles in order to gain popularity in a particular social network is certainly a violation of the privacy of the person whose photos are used.

Electronic payment, e-shopping or visiting only specialized sites for marketing purposes may also be abused. Based on the data collected in this way, an individual allowed the reconstruction of his entire private life, his habits, his marital status, whether he has a pet, and so on. There are examples of people who bought certain products on the Internet, began to receive spam e-mails - advertisements for the same products.

Unfortunately, the terms of using various social networks and other services on the Internet, accepted by users without reading, always contain clauses on the use of personal data, which the user leaves on these sites for various purposes, most often just for modelling ads that will appear on the pages he reviews in accordance with his habits, experiences, education, interests, and so on. This is, formally and legally speaking, a progress in comparison to the previous situation that existed and which can often be experienced even today, especially in countries where the personal data protection culture is not sufficiently developed, and the necessary sanctions are generally absent.

d. Acts performed against digital data on the Internet, a part of the Republic of Serbia criminal law

The current Criminal Code of the Republic of Serbia, a section regulating criminal offenses that have been committed online or in the field of IC technology, is called Criminal offenses against the security of computer programs in the Republic of Serbia (Criminal Code "Official Gazette of RS", No. 85/2005, 88 / 2005).

Damage to computer data and programs, depending on the amount of damage caused, for which a five-year long imprisonment is possible.

Also, for the importation, destruction, alteration or concealment of a software or digital record, as well as a hardware information carrier which prevents its use, or significantly impedes the transmission or processing of data serving state authorities or institutions, - constitute offenses of computer sabotage, for which it is prescribed the same amount of punishment.

For the production and introduction of viruses in another computer system or computer, the sentence may be up to two years in prison, depending on whether the damage is caused or not.

Due to the importance of protecting the Internet from frauds, the legislator imposed a fine of up to 10 years in prison for fraud that makes a damage of more than 1,500,000 RSD.

For unauthorized access to a protected computer, a computer network and electronic data processing, a penalty of 6 months is prescribed, and if the information thus obtained is used, the sentence can reach 2 years in prison. And if there are severe consequences 3 years.

The law also prohibits the activities of preventing or restricting the use of information on the global computer network, or the use of another computer or network.

CONCLUSION

What is evident is that the new digital community continues to increase the number of internet users which resulted in an enormous growth of digital information. This occurrence has damaged all the traditional models in almost all areas of life resulting in the need to look for new solutions. Some of those areas are definitely intellectual property, copyrights, protection of personal data and privacy, electronic business and high-tech criminal.

A certain legal regulative inside our communities is inevitable and necessary, but the creation of legal and ethical dilemmas in the field of new media should be left to the ethical community and the common sense of all citizens, and not only to the legal regulative of the current government.

Unlimited access to scientific and other professional works, music and video works in the digital form has undoubtedly shaken the traditionally set concept of copyrights. The need to protect copyrights and publishers' wishes to protect digital works in a more efficient way is completely opposite to the desire of a great number of digital community members to freely exchange knowledge and all creative resources that are a part of the overall heritage of our civilization.

A series of attempts to find the right solution is offered as one of the possible solutions, the creation of open source licenses, which offers the authors the ability to decide for their works, i.e. to what extent they will make them available to interested users of the digital community. In this way, a huge treasure trove of knowledge would be available in digital form, which continues to grow more and more every day. But it has been clearly defined to what purposes an author's work could and could not be used. This eliminates dilemmas about the legal consequences that can occur through the use of an author's work.

In the cyber space today, there is an enormous amount of data created by

the citizens themselves, Internet users, state and non-state institutions. Their daily abuse must be subject to legal regulations. Data protection in digital form on the Internet could also be covered by legal solutions of certain authorities that ensure the application of regulations and data protection.

Today, successful and competitive business cannot be imagined without business activities performed in the cyber space. The highest growth has been recorded in the number of electronic transactions, electronic commerce in cyberspace, and business borders are rapidly expanding to goods and services that did not exist until the beginning of this type of business. The rapid development of e-commerce opens up a large number of new issues, which need to be regulated. The growing abuse of electronic data, phishing on the Internet, electronic fraud, electronic sabotage, virus entry into computer systems, linking materials without permission, unauthorized use of data, and many other illegal activities in cyberspace require that they be legally regulated.

Many people who use cyber space on a daily basis for business or personal use often do not have enough attention, time or will to protect themselves and learn about possible troubles that may befall them if they do not pay enough attention when initiating various types of transactions or communications.

The fact is that many classic crimes can be committed on the Internet, and that by obtaining information about users, it is possible to prepare or enable the commission of crimes, against physical integrity, copyrights, property, and many others. In addition to them, there are also criminal offenses whose development is exclusively related to the development of electronic communications and the Internet. There is a wide range of behaviours that can be harmless, but they can lead to the most severe crimes.

So, no matter how certain it is that information technology itself is not a major factor in immorality, it does not mean that its use, which leads to "legal chaos and chaos of immorality," should not be directed and prevented. It is very important to strengthen moral norms in communities and our society cannot afford itself the luxury to hesitate to consider legal and ethical issues, which are imposed with the rapid development of technology and the transmission of information, despite the pressure to transfer all responsibility to lawyers.

The protection of the rights and ethics of communication, through new media, is conditioned by the previously achieved results of efforts to defend the basic principles of sociality, hence the awareness to establish powerful social, legal and moral regulations that must lead to the reduction of legal and moral chaos in all forms of communication, and especially communication in the cyber space.

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CYBER CRIME AS A START OF THE JUVENILE CRIMINAL CAREER

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ABSTRACT

A number of researches, cases in practice, frequent journalistic reporting, numerous preventive campaigns testify to the actuality and negative consequences of computer network abuse. One of the more prevalent ways for minors to start a criminal career is computer crime. For these reasons, this problem should be approached from a theoretical point of view. The paper presents a proposal for the classification of juvenile offenders in the wider and broader sense, which had as a basis the relevant conceptual determinations of computer crime in the wider and wider sense. In terms of juvenile hackers, a point of view is pointed out that it is not justified to class them exclusively in the category of non-volatile people. It is taken into consideration that it is necessary to formulate the third category in the form of mixed actors, as demonstrated by the analysis of the case from practice, whereby attention has been paid to certain specificities of underage hackers. A lot of attention has been paid to the motivational-causal aspect of under-age internet pursuers and abusers, which also presented the criteria for the classification of these actors to whom the author was called. In addition, a criticism was expressed regarding the view that cyber persecution is a completely new form of deviant behavior and it is taken into account that the use of the Internet represents a modern means of committing the classical crime of persecution. Also, a four-part division of the types of juvenile Internet abusers is criticized, which takes the motive as a criterion, and the need for a five-part is highlighted through the separation of the "revenge nerd" into a separate category. It was also pointed to the inadequacy of the name of a "mean girls" labeling female violators and proposing to replace it with the name "mean children".

Key words: Computer Crime, Juvenile Offenders, Hackers, Cyberstalking, Internet Violence

JEL classification: K14

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INTRODUCTION

The danger of computer network abuse may be best illustrated by the comparison of a psychotherapist Zoran Milivojevic who was visiting a television show, saying that "putting a computer in a child's room and leaving it for free to the child to use it, is like putting the street in a child's room and letting the child to the dangers that lie on it." On this "street" they can become victims, but also perpetrators of crimes.

Many authors in research work investigate the criminality of adult persons related to computer network abuse. However, it seems that, with regard to juvenile offenders, certain specificities may be perceived that deserve additional attention. For example, hackers of this age, apart from varying to a certain extent in terms of motive, psychological profile and other characteristics of adolescents, are often different from most of their perpetrators of other offenses, in terms of questions relating to early start with criminal activities, predisposition of the victim, etc.

When it comes to violence among peers on the Internet, it should be noted that there is a thin line between the perpetrator and the victim. Sometimes it happens that the roles are replaced. In addition, certain parallels can be retrieved by looking at their relationship in the "real" and "virtual" world, a relationship that is inherently intricate and relative, since the consequences of their behavior in the virtual space can be both real and serious.

THE CONCEPT OF COMPUTER CRIMINALITY

The term computer crime is just one of many used in criminal law literature. In addition to the term "information crime", "internet crime", "e-crime" (Dimitrijevic, 2010, p. 296), mostly used are "high-tech crime", "computer crime", "digital crime", "network crime", "electronic communications crime", "information technology crime", "cyber crime" (Prlja, Korac, Diligenski, 2015, p. 351), etc.

Diversity is not only met in terms of terminology. It is also present in terms of how to define this kind of crime, but in this case it causes serious differences in science. However, all views, directly or indirectly, flow from cyber space as "an intangible, unlimited interactive space created from computer networks" (Miladinovic Bogavac, Rutovic, 2016, p. 69).

Some categories of authors cite two categories of definitions. Based on the first cyber crime category, it is defined as "any illegal behavior in cyberspace", while the other "serves as a method of listing work that is considered cyber crime" (Prlja, Korac, Diligenski, 2015, p. 351), such as conventional crime, cyber piracy, cyber manipulation, production and spread of harmful software, cyber scams, cyber bullying, cyber burglaries, cyber warfare, cyber terrorism, cyber sabotage, cyber vandalism. The above authors identify for the second

category due to the overwhelming and insufficiently precise first one. Ignjatovic also points out that "since it is a type of crime, all those definitions that in the categories classify all unethical, unauthorized and socially dangerous behaviors related to computer should be considered too broad, that if it is a crime, can only be those acts that are otherwise punishable by the provisions of criminal law (...)"(Ignjatovic, 1991, p. 141). On the other hand, the disadvantage of the method of enumeration of the work is the attempt to solve the problem of defining without taking into account the general concept.

In the broadest terms, it can be summarized that "computer crime is every illegal work that uses computer technology" (McEwen, 1989, p. 1). The solution given, although it also insists on "illegal work", makes a certain step forward because it narrows down the notion of this type of crime. However, it should be noted that the citation of the ability to have a good knowledge of computer technology is insufficient to determine the required definition.

Starting from the broadest possible solutions, one can not bypass the viewpoint, according to Parker (1973), one of the first and most important authors who dealt with this issue. He believes that "the abuse of computers is every event related to the use of computer technology, in which the victim suffers or could suffer loss, and the offender acts in the intention to obtain or benefit himself / herself (Matijasevic, 2013, p. 12). By defining computer crime in this way, the author looks at the given question much more precisely, putting into the foreground the motives of the perpetrator, that is, the consequences of the victims. However, due to the use of the syntagm "every event", this solution can not be considered as precise enough.

Bequai (1978) considers this type of crime to be "the commission of crimes in which a computer appears as a tool or as an object of protection, the use of computers in fraud, misrepresentation and misuse, the purpose of which is the appropriation of money or services, and in the conduct of political or business manipulation, including acts directed against the computer itself"(Ignjatovic, 1991, p. 138). He emphasizes, besides the motives of the perpetrator, also the role of the computer itself, which more closely examines this issue.

Rowland, Kohl and Charlesworth have a similar attitude. The authors state that "computer crime can be divided into three categories in which a computer appears as an object of a criminal offense, as a subject of a criminal offense or as an instrument of a criminal work" (Rowland, Kohl, Charlesworth, 2012, p. 103).

The largest number of authors attempts to determine the general notion of computer crime, which is not an easy task. However, such an effort is justified in view of, among other things, the shortcomings of the method of enumeration of the work. There are a large number of criteria and essential elements to which authors are called upon in defining this term. For this reason, it is not easy to give a general definition.

DEFINING COMPUTER CRIMINALITY IN A RESTRICTIVE SENSE

Vodinelic (1990) under this type of criminality, in the right or the narrow sense, states "computer fraud, sabotage and espionage" (Matijasevic, 2013, p. 14). However, it should be pointed out that this view relies on the method of enumeration of the work and that for this reason it is necessary to seek a second solution.

In the framework of material for a "workshop" of crime in the network of the Tenth United Nations Congress, computer criminality in a restrictive sense is defined as "any illegal behavior directed to electronic security operations of computer systems and data being processed" (Tanjovic, 2009, p. 158). Although this solution provides a general definition, it is insufficiently precise.

A view in the narrower sense that determines the general definition, links the essential elements of a given term, while not quoting inaccurate syntagms such as "illegal work", "illegal behavior", is Ignjatovic's view. The author points out that "computer crime is a special type of criminalized behavior in which the computer system (understood as the unity of hardware and software) appears either as a means of execution, or as an object of a criminal act, if the work in another way or another object is generally could not have performed or would have significantly different characteristics" (Ignjatovic, 1991, p. 142).

DEFINING COMPUTER CRIMINALITY IN EXTENSIVE SENSE

Apart from looking at computer criminality in a restrictive sense, Vodinelic does the same with regard to the extensive (inferior) aspect of this type of crime, under which he states "illegal possession of computers and its parts by stealing, embezzlement, as well as any criminal act in which the computer appears as a means of committing a criminal act" (Matijasevic, 2013, p. 14). It can be noticed that the author, as in the previous case, does not deviate from the method of enumeration, without taking into account all the basic elements.

Certain "consistency" in imprecision is also noticeable in determining computer crime in a wider sense in the material of the Tenth Congress of the United Nations. It is noted that this type of crime represents "any illegal behavior important for or against the computer system and the network, including such a crime as the illegal possession, supply and distribution of information through computer systems and networks" (Tanjovic, 2009, p. 158).

The definition in the broader sense in which to avoid the previous shortcomings of the extensive understanding of this term is that which Skulic points out. According to him, "computer crime is a form of criminal behavior in which the use of computer technology and information systems is used as a

means of committing a criminal offense, or the computer is used as a means or goal of execution, thus achieving a certain consequence in the criminal law" (Aleksic, Skulic, 2016, pp. 381-382). This view indicates that when defining it is necessary to take into account three basic elements: "the mode of execution (modus operandi), means of execution and the consequence of criminal activity" (Skulic, 1997, p. 46). Unlike the definition in the narrow sense, a broader viewpoint does not narrow down the notion of computer crime only to cases where this offense can not be performed in any other way, except using a computer. Therefore, according to this extensive understanding, certain traditional crimes can be committed.

JUVENILE COMPUTER CRIMINALS

Bearing in mind the definitions of computer criminality in the narrower and broader sense that appear to be acceptable, we consider that juvenile offenders can be divided into:

- actors of criminal acts that can be committed when a computer system can only appear as a means of execution or as an object of a criminal act - juvenile actors of computer crime in the strict sense;
- the actors of other crimes, in which the computer system appears as a means of execution or as an object of attack - juvenile actors of computer crime in the broader sense.

THE JUVENILE ACTORS OF COMPUTER CRIMINALITY IN THE NARROW SENSE

Computer criminality, in the narrow sense, refers to a group of criminal acts against the security of computer data that constitute criminal acts: damage to computer data and programs (Article 298), computer sabotage (Article 299), creation and introduction of computer viruses (Article 300), computer fraud (Article 301), unauthorized access to a protected computer, computer network and electronic data processing (Article 302), prevention and restriction of access to the public computer network (Article 303), unauthorized use of a computer or computer network (Article 304) and creating, procuring and providing means to others for the commission of criminal acts against the security of computer data (Article 304a) (Criminal Law, 2014).

The Law on Organization and Jurisdiction of State Authorities for Combating High-Tech Crime (2009) in Article 3 foresees, under certain conditions, its application, except for this group of criminal acts, and on another. However, if we strictly adhere to the stated attitude and classifications of the actors, only criminal acts against the security of computer data can be considered computer criminality in the narrow sense.

Ignjatovic points out that the data from the Interior Ministry on crimes committed against computer data and systems in 2006 show that their number "was six, which means that the rate of these crimes was 0 (zero) - ie, less than one part per 100 000 inhabitants". In addition, the author states that in the same year, out of the 26 countries he provided data, the rate of these crimes was "double digits only in Germany (66) and Belgium (53), in seven countries it was zero (0), and in six were one. The average was seven "(Ignjatovic, 2013, p. 44).

As criminals from this group, juveniles rarely appear. This can be determined on the basis of data from the Statistical Bulletin on the number of criminal sanctions imposed on juveniles in the Republic of Serbia in the period 2006-2015. For example in 2015. (1143), against public order and peace and legal traffic (263), against life and body (197), against human health (156), against public transport safety (29), against the freedoms and rights of man and citizen (29), against full freedom (12), against the economy (9), while for all other criminal acts, a total of 88 criminal sanctions were imposed (Republic Statistical Office, 2016, p. 45). Of course, we should bear in mind that these are official data and take into account the significant conditions of "dark numbers".

JUVENILE HACKER

Hacking can be defined as "accessing a computer system without a direct or indirect license of the owner of a computer system" (Naumovski, Popovic, 2012, p. 82). Unlike malignant computer criminals, "hackers are non-malignantactors who are not motivated by either gaining benefits or causing harmful consequences, but simply seeking pleasure in unauthorized penetration into a well-equipped information system" (Dimitrijevic, 2010, p. 304). However, Lloyd does not see the need for a conceptual distinction between hacking and hackers. He argues that "although hacking and hackers are terms that have a long and significant tradition in computer technology, they have become today mostly synonymous with unauthorized access to the computer system" (Lloyd, 2011, p. 215).

It is interesting that this group of actors denies the way many see them, attributing them, as they say, others' works characteristic of so-called. crackers, many of whom are "professional criminals involved in corporate or state espionage and related to organized crime" (Clarke, Clawson, Cordell, 2003, p. 3). "Hackers claim that crackers deal with security breaches, which they can do for the purpose of detecting and warning of certain security vulnerabilities - "white hat", or with the intention of damaging that system -"black hat" (Savic, Popovic, Scepanovic, 2012, p. 764). Over the last decades, these individuals have built up a special value system, i.e. hacker subculture. It is based on ethical principles, such as: information sharing, openness, decentralization, free access to computers, improvement of quality of life (Savic, Popovic, Scepanovic, 2012, p. 763). It may be questioned whether these principles are merely an excuse for

incriminating acts or simply confirming the saying that "the path to hell is paved with good intentions."

Hackers attach a lot of attention to gaining reputation. As some of them point out, "hacking can be useful in itself, but it can bring much more satisfaction in the form of recognition if the experience is shared with other hackers" (Jordan, Taylor, 1998, p. 764). So, the status motive, i.e. "the tendency to maintain the status of the environment in which it is moving" (Skulic, 2011, p. 61), as one motive typical of minors, can also be found in hackers of that age. In sharing experiences with others, elements of utilitarian-educational reasons for association can be recognized, since "group membership allows easier and more systematic adoption of certain criminal content, as well as the acquisition or improvement of certain modes of operand" (Skulic, 2003, pp. 72 -73).

Regardless of whether they are merely ordinary criminals or fighters for an open and more advanced society, there is, in theory, a majority view that, as a rule, it is about computer programmers, computer addicts, people of superior intelligence, eager challenges and proving.

It is not easy to determine their characteristics, since this is a heterogeneous group. Certain information nevertheless indicates that "the classic hacker is a white man between the ages of 12 and 40, belongs to the middle class, has problems during schooling (...), comes from a problematic family and as a rule is asocial and obscure" (Savic, Popovic, Scepanovic, 2012, p. 761). Data from the National Criminal Investigation Agency of Great Britain warn that the average age of persons suspected of cyber crime is getting smaller, more precisely in 2015, it was only 17, and in 2014, 24 years. (National Crime Agency, 2015).

Minors represent a specific category of person whose motives are sometimes not easy to establish in traditional criminal offenses. For this reason it seems that it would be unwise to classify them exclusively in non- malicious contributors, given their specific motivation beam. It is a concept that represents a "qualitative linking of a large number of motives that move personality in the same direction and towards the same goal" (Simonovic, Matijevic, 2007, p. 114). In addition, some authors, such as Fejes and Lajic, point out that the incidents are more often made by malicious perpetrators and as they actually represent in this case, the first phase of committing crimes such as data theft, computer sabotage and so on (Fejes, Lajic, 2014, p. 249). In many cases, hackers are guided by a combination of motives, which is why we consider that the aforementioned division of the perpetrators, especially when it comes to juveniles, should be supplemented by a third category, mixed actors.

One of the examples illustrating this need is the case of Jonathan James - Comrade. (Wired 2009). At the age of 16 in 1999. he fell into the US Department of Defense agency's computer and extracted employee passwords. In this case, it is confirmed that even if a well-regulated state entrusts the implementation of quality laws to incompetent clerks, great harm and shame

will arise in the state (Miladinovic, Spasojevic, 2015, p. 312). He also got into NASA computers where he took over the program to control the international space station. He was remembered as the first juvenile who was sentenced to six months home arrest for hacking activities. He committed suicide in his house in 2008, less than two months after the agents fell in the same because of his re-hacking.

The motives of his hacker activities are multiple, which makes him a mixed actor. As he pointed out, he did it for entertainment and curiosity, that is, for the purpose of upgrading the programming skills. The reasons for the attacks listed and the choice of computer systems are in line with those provided by Jordan and Taylor. They point out that "the ability to gain power over computer systems, such as NASA, Citybank or the CIA site, is an attraction" (Jordan, Taylor, 1998, p. 768). Although the material value of the program is enormous, it seems that this circumstance was not (the main) motive. However, there is no doubt that he succeeded in intent to cause harmful consequences, as there was a lot of financial damage due to temporarily disabled computer systems. In this case, great damage to property was caused by the state, which, according to Jovasevic, is a rare case, since "the harmful consequences of computer crimes are manifested in the occurrence of property damage to natural and legal persons (sometimes for the whole country)"(Jovasevic, 2014, p. 45). In this way he proved his claim that the government did not take enough measures to protect most of its computers.

It's interesting that this father, otherwise the developer, said he was "somewhat proud" of the hacking act of his son, with whom he was not in good relations. For this reason, the father was positively surprised by the invitation for dinner, which his son sent by e-mail several days before suicide. This relationship is in line with the claim that "many of the talented hackers in life had a lack of love and respect" (Savic, Popovic, Scepanovic, 2012, p. 761). As a possible motive it should not exclude his need for attention and respect of his father, even in this way.

The psychological profile of this minor hacker is complex. As Maric points out, "suicide as an element of autoaggressive syndrome is one of the psychopathological phenomena in adolescence" (Maric, Lukic, 2002, p. 166). In a farewell letter, he wrote that he was innocent, that he was certain that federal officials would make him a scapegoat and that he did not trust the justice system. He thinks his act will send a strong message to the public and, most interestingly, he loses control of the situation and that this is the only way to recover it. In addition to the severe need for control, which is often present in numerous cases of juvenile hacking, the young hacker can also notice insufficiently developed emotional intelligence. For this reason, it seems that there is a fairly inaccurate claim that, as a rule, they are very intelligent actors. It could possibly be noted that these are, as a rule, highly practical intelligence, having in mind the types of intelligence that Maric mentions, such as verbal,

manual, social, emotional, practical, etc. (Maric, Lukic, 2002, p. 41). However, such a statement is part of the stereotype of hackers, since there is no relevant evidence for it. Forester and Morrison state that "the greatest amount of hacking involves very little intellectual challenge or intellectual abilities" (Forester, Morrison, 2001, p. 392).

Like most underage hackers, he acquired knowledge and skills by dealing with computers from a hobby. In this is the basic difference in relation to the adult, who in most cases acquired the necessary expertise through dealing with a particular profession. As Lilic and Prlja point out "hackers, according to their professional orientation, are mostly computer programmers, operators, or highly educated informatics" (Lilic, Prlja, 2008, p. 87).

Lukic concludes that "the early commencement of criminal activities is linked to a higher frequency of criminal acts and, as a rule, causes a longer duration of criminal career, as well as committing more serious crimes" (Lukic, 2012, p. 290). Unlike most juvenile offenders, the fate of underage hackers is often an exception to this rule. Owen Walker, (Blic, 2015) is one of many examples. Namely, Walker ('89) works as an online security advisor in several companies. He ended his hacking career after he was just 17 years old, he stole from banks more than \$ 20 million, hacking 1.3 million computers, with only \$32,000 being paid to him from whom he wrote the program code. Although this causal link has not been proven in this case, it should not be ruled out that this hacker, like some of them, consciously contributed to being discovered, in order to "recommend himself" as an online security expert, in accordance with the more and more popular sentence, "bad advertisement - good advertisement". It is not rare that companies, and even countries as victims of hacking, are impressed by their abilities, become employers of them. With a certain amount of irony, it can be said that in this case, the Merit system is applied, i.e. a system of merit and abilities (Miladinovic, Spasojevic, 2015, p. 316). Such an approach seems justified given that his "qualities", in the form of knowledge of "professional techniques with a clear framework of independent action" (Miladinovic, Spasojevic, 2015, p. 316), are recognized by the aforementioned companies.

In addition to the need to formulate in the theory a special third category of mixed authors, through the above examples it is pointed out some of the most significant specificities of juvenile hacking.

THE JUVENILE ACTORS OF COMPUTER CRIMINALITY IN THE WIDER SENSE

A large number of crimes can be committed in the context of computer criminality in an extensive sense. Stevanovic, pointing to the correlation of the use of the Internet and social networks with crime, states that "all types of criminals, from spying, terrorism, sexual offenses, economic crime, to murder, can use and use the Internet as a tool in the commission of criminal

acts" (Stevanović, 2013, p. 72). These are just some of the harmful consequences of the global use of the Internet. The specifics of virtual space and their impact on social relations have created the need for the creation of new scientific branches. For example, Jaishankar (2007) Cyber Criminology, as a new branch of criminology, defined as "the study of the condition of crimes that take place in cyber space and their impact on physical space", stressing that it is a "multidisciplinary research field where criminology, victimology, sociology, science of the Internet and computer science meet" (Ignjatović, 2016, p. 95).

There are several ways in which computer networks can be abused as a tool to commit traditional crimes. The most common forms of abuse are: "harassment via the Internet, identity theft, Internet scams (eg "foreign lottery", "bribery of the bride", "business offer", "help to a friend in trouble", "purchase mistake", "Nigerian fraud", (Miladinovic Bogavac, 2017, p. 102), manipulation of personal data and the abuse of personal photographs, monitoring and downloading of e-mails, eavesdropping and recording of the talk rooms" (Vilic, 2013, p. 151). At this point, the emphasis is placed on the motives of minors who make Internet harassment, as it often involves other forms of abuse. Except for the purpose of persecution, juveniles increasingly use the Internet to express various forms of violence, directed primarily towards their peers.

CYBERSTALKING

Cyberstalking is a "set of procedures by which an individual, group or organization using information and communication technologies disturbs one person or more individuals" (Kovacevic Lepojevic, Lepojevic, 2009, p. 92). This term implies "the use of the Internet, e-mail or other means of electronic communication for hunting (stalking) to other persons, where stalking in the traditional sense means participating in repeated harassment or persistent behavior such as face-to-face, harassment by telephone, or sending threatening messages or objects that cause a reasonable fear for life or physical integrity in the victim" (Matijasevic, 2013, p. 47). Stojanovic, pointing out the problems of incriminating persecution, states that "most of these actions, if they are isolated, are not sufficiently harmful to deserve incrimination (for example, intrusive behavior), and for some of them it would be possible to claim even that they are socially adequate" (Stojanovic, Delic, 2017, p. 52).

One of the fundamental issues that arises is the question of the relationship between the crime of persecution and cyber persecution. Botheus, Griffiths and McFarlane believe that, although there are different opinions "(...) cyber persecution should be viewed as a whole new form of deviant behavior" (Bocij, Griffiths, McFarlane, 2002, p. 3). However, we consider that there is no need for "complete" separation in this way, since cyber persecution represents only an upgrade of the classical, as a consequence of technological development. In other words, the use of the Internet in this case is only a modern means of committing this crime. In stating the ways in which prosecution can be carried out, Skulic, among other things, states "creating false profiles on social

networks, publishing or sending disturbing photos or images where the victim is ruffled, sending messages," etc. (Politika, 2016). Due to the use of the said means of execution, it takes on the character of the distancing criminal act, since the action of execution is undertaken in one, and the consequence of the performance is another place (Stojanović, 2017, pp. 229-231).

As with minors hackers, there are more motives that run under age cyber persecutors. Taking motives as a criterion, Botheus and McFarlane distinguish several types: "vengeful, stalked (peaceful), intimate and collective Internet pursuers" (McFarlane, Bocij, 2003).

In the case of vengeful, the main motive is, as the name itself speaks, revenge. They are characterized by much more frequent and cruel threats compared to other types. Most often, it is a matter of minors who, for certain reasons, can not or do not want to oppose themselves in the real world, so they abused the cyber space for achieving their goals, relying on the "absence of physical proximity and anonymity" (Miladinovic, Petrovic, 2016, p. 230). However, there is also a view that this type of persecution has a tendency to "go into physical pursuit" (Vilic, 2013, p. 158). It's often done, especially when it comes to older minors, about people who are willing to sympathize with unwanted attention or former emotional partners. The targets of these pursuers may also be the former friends.

The basic intention of the stalked people is to "create a constant feeling of fear and insecurity in the victim" (Vilic, 2013, p. 158). Such an effect is achieved through threats, which are somewhat less frequent than in the previous type. Unlike vengeful ones, before Internet prosecution, as a rule, they do not contact the victim. Such an intention does not exist even after the threat, but it seeks to create "at least a belief that virtual persecution will become real" to the victim (PopovicCiric, 2009, p. 54).

The main goal of the intimate is to "be in intimate relationship with the victim, with whom he is obsessed" (Vilic, 2013, p. 158). At the victim's site, they can be found, as potentially new intimate partners, as well as those with whom the persecutor wants to restore a relationship. They most often use e-mails, web chat groups, and dating sites.

When it comes to collective, it exists if at least two persons are persecuting the same victim. It is difficult to determine the basic motives, although it is often not about motives characteristic of one of the above types, or even about their combination. Trafficking is usually made through numerous threats, spam, mailbombing, identity theft, etc., in order to upset the victim. A famous example of this is the case of Seattle girls aged 11 and 12 years accused of computer interference with property and cyber-harassment for commenting on a Facebook page and setting up sexually explicit photos of their schoolmate. (Huffington post, 2011) In addition, girls are charged with sending instant messages through which, using the victim's name, they contacted strangers for sex. The necessary

passwords came during the visit to the victim, while they were still in friendship relations.

CYBERBULLYING BETWEEN PEERS

Cyberbullying takes on a growing situation among minors. Although there has always been violence among them, social networks have created a suitable space for the manifestation of various forms of psychological violence.

Although some forms of this behavior are characteristic of persecution, in this case they occur in greater intensity, which can lead to more serious consequences for the victim. Therefore, the difference is primarily in the qualitative hearing, which reflects both the characteristics of the perpetrator and the victim. There are authors who go on to date and rightly claim that virtual violence can be even more dangerous than physical violence, as there are no limits for it. In addition, they state that victims who are exposed to virtual violence 24 hours a day can often have a permanently disturbed psychological health and self-esteem (Prlja, Korac, Diligenski, 2015, p. 360). In addition, the distinction is also due to the fact that it can result in a greater number of offenses from forms of violent behavior in the cyber world, some of which are crimes such as threats, blackmail, etc.

Matijevic, as the most represented form, lists (Matijevic, 2014, p. 44):

1. sending or publishing offensive, disturbing, malicious messages,
2. creating whole pages, blogs, forums aimed at mocking, harassing or spreading hatred for individuals or groups,
3. the publication of photographs of victims exposed to peer abuse,
4. the publication of pieces of personal messages for the purpose of mockery and embarrassment,
5. announcements of selfies sent by the victim to an individual who publishes them in open groups,
6. taking out personal data and details from the victim's life,
7. spreading rumors, gossiping,
8. theft of user data on social networks or other user accounts,
9. publishing false information, phishing, using someone else's photos, and recording as their own,
10. sending inappropriate content,
11. threats, blackmail,
12. child recruitment, sexual exploitation via webcam, online chats,
13. obtaining, distributing, displaying and accessing child pornography.

When it comes to form under seven, that is, "spreading rumors, gossiping", we think that the question may arise as to whether this vision is a place among forms of internet violence. Although in extreme cases, due to its high intensity and frequency, it can lead to severe consequences, especially in psychologically

ill-fated victims, it does not appear to exist as an independent form. It seems that it would be more acceptable to classify it with point three, i.e. with the "publication of pieces of personal messages for the purpose of mockery and shame".

Juvenile violators may differ in terms of motive and the reason for taking such behavior. One of the leading experts in cyber crime in the United States, Aftab (2014) lists four types (Stop cyberbullying, 2014):

1. vengeful angel,
2. power hungry and a nerd avenger,
3. mean girls,
4. inadvertent.

Vengeful angel does not perceive himself as a perpetrator, but as someone who seeks justice. He is convinced that he is acting properly, protecting himself or others from "bad people", who in his opinion deserve to be punished, thereby correcting the injustice. The most common are those who are "sacrificed by cyber or traditional violence, thus making themselves a violent person" (Stop cyberbullying, 2014), which can cause a "vicious circle" with serious consequences for all actors. Although usually acting independently, they sometimes associate with friends or other persons the victims of the person they intend to revenge.

Power-hungry, like his peers of abusers outside cyber space, strives to make others behave as he wants, or "to use control tactics, control, power and authority over others" (Popovic Cirim, 2009, p. 56). He often blackmails the victim in order to achieve his goals. As a rule, it is at the same time a traditional bully in the real world. It is very important that his activities are broadcast by the audience, usually made by his closest friends or school friends. Often boasting of their actions, especially if they are not posted in the desired way. Hence, he manifests elements of the narcissistic personality, since he "constantly seeks attention, praise and admiration" (Maric, Lukic, 2002, p. 87). It seems that this guy can also be called the internet despot, citing Aleksic, who states that "despot is terrorizing other children, has power over others, but soon it becomes unpopular because it does not manage to adapt to the demands of the community" (Aleksic, 1972, p. 37).

The nerd avenger wants to "establish power over others, not for the sake of control and authority itself, but for compensating for their own shortcomings" (Popovic Cirim, 2009, p. 57). This usually makes it conscientious by intimidating and humiliating the victim, which compensates for physical impotence in the real world, for which it often hides its identity. From the previous type of abuser, it differs in that it represents a victim of violence in the real world, such as a vindictive angel. The connection with this type is also reflected in the fact that sometimes they "begin as vengeance angels, but soon

motivation to do good and rectify injustices, replaces the excitement brought by the power and fear of the victims" (Popovic Ceric, 2009, p. 57).

One might ask why the author decided to combine the hunger power and the scum of the avengers into one category, as long as the other has more touch points with a vengeful angel. However, it seems that the most acceptable would be the classification of five types, bearing in mind the particularity of each.

Mean girls, according to Aftab, are a cyber bully who acts "out of boredom or for fun" and has a "highly expressed ego", but can be considered "the most infamous type" (Stop cyberbullying, 2014). It can be concluded that empathy is not developed for this type, since it sees primarily the entertainment in violence, not thinking about the consequences for the victim that they make fun of and humiliate. Other types, primarily a vengeful angel and a nerd avenger, they know the emotional state, opinion and behavior of the victim, abusing them from their own motives. Most often they commit violence in a group, which tends to become physically. Like the hungry power, it's about narcissus and ego-centers, since they "want to introduce themselves to other people and let them know that they have the power to commit violence." (Stop cyberbullying, 2014). This power, unlike other types, does not express exclusively towards peers, so companies, countries, etc. can appear as targets. This was the case in the Netherlands, in which a 14-year-old girl was threatened by American Airlines by Twitter. The content of the threat message was: "Hi, my name is Ibrahim and I am from Afghanistan. I am a member of Al Qaeda and I will do something great on June 1st" (Spiegel, 2014). Ruling, she stated that she was sorry, that her intentions were not serious and that it was just a joke. This case is an example of "crazy crime (from I. ludus - play) which includes acts that the perpetrator undertook in order to (first of all) make a fun" (Ignjatovic, 2016, p. 109).

The name of the "mean girl" appears to be inadequate, because it only labels female Internet sexually abusive girls as being mean. We should use the syntax of "mean children", since these characteristics can also refer to male males.

"Inadvertent become cyber bully, when they respond to negative communications received without thinking, or when they are introduced into indirect cyber violence by their negligence" (PopovicCeric, 2009, p. 58). With this type there are no specific motives and intentions for cyber violence, nor the intention to correct the injustice that is present in the vengeful angel. They often react impulsively, whether provocative content is addressed directly to them, or to others, and are unaware of the consequences of their actions. They can easily be abused by other perpetrators and unconsciously engage in violence.

CONCLUSION

Contribution to the scientific explanation of this phenomenon, the authors have tried to provide through analysis of several problems.

Although the above statistics indicate that juveniles do not often appear in the role of computer criminals in the narrow sense, this problem deserves special attention. Bearing in mind the worrying data of the National Criminal Investigation Agency of Great Britain on the lower average age of persons suspected of cyber crime, as well as the fact that life in various spheres is increasingly "moving" to the Internet, it seems justified to point out certain specificities of underage hackers (motives, the psychological profile, the way of acquiring the necessary knowledge and skills, certain deviations from other juvenile perpetrators regarding the beginning of a criminal career). In addition, it is pointed out that it is not justified to classify them exclusively in the category of non-volatile actors, but that it is necessary to formulate a third category in the form of mixed authors, as was shown, among other things, in the analysis of the known case of Jonatan James.

Although juveniles as computer criminals can be viewed from multiple angles, in the work as the basic are set motivation-causative aspect and the interdependence between the real and the virtual world.

As part of this interdependence, the relationship between the new criminal part of persecution and cyber persecution was pointed out, with the emphasis on the idea that the use of the Internet represents a modern means of committing the criminal act of persecution, and not a completely new form of deviant behavior.

Pointing to the connection between the real and the virtual world, a review was made of the division of juvenile abusers on the Internet according to the motive as a criterion. The motives of some of the perpetrators were at the same time an occasion for expressing critical thinking about the merging of certain separate types, essentially different into one.

Bearing in mind that cyberspace is of a dynamic character, since it is constantly evolving, it can be expected that juvenile criminals will monitor its progress in order to achieve the goals. Accordingly, these views may be of importance in order to act preventively, and it is necessary to check them and, if necessary, to align with the said development so as not to lose the purpose.

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INTERNET DEVELOPMENT AND ETHICS IN SERBIA

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ABSTRACT

The aim of this paper is to provide some basic insights into the specificities of Internet development in the Republic of Serbia as well as the complexity of the relationship between jobs, communication and ethics in “the internet era”. Internet, being the most modern and popular medium that is used in communication by the entire population, brings about numerous advantages in comparison to previous media: freedom in the choice of information sources and the content itself, ability to create new content and share it to other users, as well as unmistakable access to necessary information. Information technologies are today the driver of social development of exceptional possibilities, but at the same they are a special phenomenon with the potential of inestimable challenges and threats. Their appearance, dynamic development, but also possible negative consequences of that development, are most tightly related with global openness of communities and individuals for whom these media provide an independent, fast and interactive communication. Internet is a flexible and integrated global network of computer networks connected on voluntary basis. It spreads across the entire planet and serves millions of users. Global network established in such a way differs from conventional systems of media distribution, primarily because there is no central control over it and it is not under anyone's “ownership”. Users today have a direct access to communication channels, hence they have become the leading factor, not only in mass use, but also in the collection and distribution of information. Internet and all other newer media in modern environment contribute to new ethical challenges in business activities. It is clear that fast technological developments lead to new unethical behaviour in communication which imposes the need for special attention in this field in circumstances when all personal and other information can be collected and sent with great ease. This paper aims at pointing out that the ethical basis of newer media is inseparable from the state of moral of communities in which those media act on. Yes, “moral dilemmas” on the Internet have a lot more in common with the state of ethical norms in societies using them than with the development of new technologies.

Key words: Internet, Information Technologies, Ethics, Moral

JEL Classification: D80, I21

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INTRODUCTION

Looking back two decades ago and based on all available data, even from the perspective of a man born in time when the Internet appeared in our country, it can be seen that the Internet has grown quite a lot, hence being the newest medium, it is an unavoidable tool in communication and in the search for necessary information, goods and services.

Of course, the road to Internet as we know it today was not easy and it demanded a lot of enthusiasm and good will, even a certain amount of lucidity of a great number of people working with information technologies, to welcome Internet in our country.

Conditions in which the Internet was developing here were quite unbearable since, after the disintegration of Yugoslavia, here came sanctions and an embargo under which Federal Republic of Yugoslavia was back then, so there were little possibilities. Nevertheless, in that sense we didn't lag behind the world and despite all the problems, we kept track with the global trends and Internet progress.

Belgrade University professors made a decisive step thus initiating the entire sequence of events that resulted in the enhancement of the small potential internet had back then and which only included communication via electronic mail and a few additional functions. Since then, the Internet has been developing unbelievably fast and is in wide usage.

Possibilities of the Internet on a global level are increasing day by day, and Serbian internet maintains to keep up with the world by being at disposal of the entire Serbian territory.

Even more so, there are more a few types and ways of using the Internet, so the final user has a wide spectrum of possibilities.

In regards to that, law and legal systems with the use of internet enable a more efficient and faster problem-solving and in that way make legal transactions easier.

Cyberspace, being a virtual space without clear physical boundaries, makes troubles for a great number of legal entities all around the globe. Their task is to formulate international conventions and national regulations that would help in a great deal of disputable situations. Unauthorized access to computers and computer systems, computer frauds, sabotage, spread of computer viruses, theft of copyright works, stealing of a virtual identity, taking control over other people's computers, alterations, deletion of data or wrong data entry in databases, eavesdropping, disturbance and interception of electronic communications, virtual incursions into protected networks and banking systems, the dissemination of pornographic content, the spread of racial, religious and national hatred, and many other topical issues of cyber space present a major problem and a challenge for people today.

There are many misuses that come with the use of the Internet, so lately new legal segments and branches have been invented, e.g. Internet Law, and more and more Copyright Law, i.e. Law of Intellectual Property that deals with the safety of data and personal property online, as well as with safe ways of downloading documents in a legal manner, and primarily in a legitimate manner.

As far as legitimacy goes, we come to a special segment of this paper and that's ethics. Ethics as such studies how we should behave in accordance with unwritten social norms which exist more as a system of innate ideas and as such represent a universal norm one social group is led by. These are primarily moral principles we should be guided by, and sanctions are directed towards an internal thinking of an individual human being, i.e. rethinking about possibly wrong behaviours and conscience.

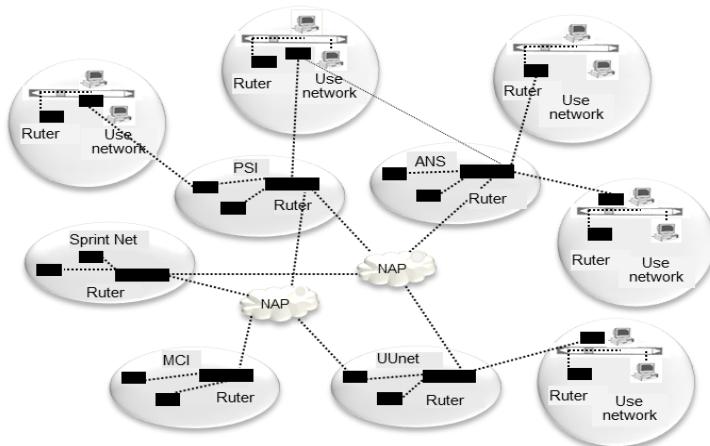
Presence of ethical principles on the Internet is there to remind us of its almost unlimited possibilities, but also to warn us that we cannot do whatever we think and want and that we need to ask around the Internet and hear what other people have to say. By this we mean various social networks, forums, websites and comments users leave and in that way help us to form an opinion, thus protecting ourselves and others by a modernized use of ethical principles in order to have an easier and faster information and document flow on the Internet.

As far as communication is concerned there are also certain rules. Even though it seems as a cold and indifferent, communication via e-mails or social networks is also something we need to pay attention to because all the traces we leave behind us can be easily found and later on misused. By this we mean that there are certain rules of communication, i.e. formal and informal communication that shall be further discussed further on in this paper.

DEFINITIONS

Internet is most commonly described as the network of all computer networks that primarily works on a global level. Even though this statement is not completely true, because there are computer networks not included in the Internet, the definition of the Internet as the “network of all networks” has been generally accepted (Turban E., Rainer P., 2005).

A more detailed description of Internet would be that it is a collection of mutually connected networks, providers (Internet intermediaries) and their users (Picture 1). Practically, Internet is a global computer network made up of several thousand interconnected networks that mutually communicate by using the internet protocol, known as (*IP – Protocol*), (Medic Z., Zivadinovic J., Skorup A., 2016).



Picture 1. Internet as a network of computer networks

Source: Authors

Internet is much more than a computer network and because of that, when we want to emphasize its wider influence on information systems and its application in general, we use the term “Internet technologies”.

1. Various hardware and software solutions of different equipment producers can be imbedded into Internet;
2. Network management is distributed and one organization doesn't have control over the entire Internet. Only the management of domain names (DNS) is a joint activity;
3. Unique address structure is used for all computers on the Internet;
4. Content of the messages travelling through the Internet is not checked and interpreted. Data interpretation happens only at network ends (at the sender's and receiver's address), which enables efficacy of the network;
5. Network technology and network serverss are separate entities, hence in order to make an application you don't need to know details about the configuration and working method of the network (Medic Z., Zivadinovic J., Skorup A., 2016).

RESEARCH METHODS

Expertise and scientific literature were used in the theoretical sections. The literature in question contains valid information obtained from a large number of various sources. Scientific method is a collection of different procedures the science uses for research activities in order to explore and display results of a

scientific research. We need to ensure: safe, well-arranged, systematic and exact knowledge. The following scientific-research methods shall be used here:

- Observation method that enables us to collect a sufficient quantity of data from the real system that shall be used as the entry data for this research in order to draw certain conclusions,
- Inductive and deductive method, as the basic logical methods that enable us to draw certain conclusions about the research subject,

For the purpose of comparative analysis and the formulation of individual opinions and conclusions, comparative method was used when gaining information with the use of classical processing.

RESEARCH SUBJECT

Internet offers and possibilities grow larger every day, thus making the Internet everyday necessity of an increasing number of people doing different jobs, having different interest and belonging to different cultures. Three people and one conference should be thanked for the development of the Internet concept. Vannevar Bush was one the founders of the ARPANET project. In July 1945 he published an article titled *As we may think* in which he talked about the use of information technology which he would use to create “memex” – a device on which an individual could save his books, notes and communication, pieces of furniture that could be accessed fast and flexibly from great distance. (Vannevar Bush, 1945).

Mathematician Norbert Wiener gave rise to a new research field – cybernetics. During the II World War, Norbert Wiener worked as a rocket scientist who did research on feedback-reaction in rockets, i.e. how electronics behaves during rocket flights, what happens with its position and flight direction. He established that feedback, a reaction in all living creatures, is the key mechanism, from the simplest to the most complex of plants and animals, and that it creates the possibility of reacting to a newly occurred change in the environment. He especially developed the principle of cybernetics - a combination of a human being and electronics - that he published in 1948 in the book titled *Cybernetics* (Norbert Wiener, 1948).

In 1956 in Vermont, at a famous “Dartmouth College”, the first international conference on artificial intelligence was held (*Dartmouth Artificial Intelligence Conference*). At the conference a great number of scientists took part in the discussion about the new topic – artificial intelligence.

It has been proven that the power of a computer doubles every eighteen months, and that the machine will become as intelligent as the human, it's only a matter of time, in what way and when this will happen.

At the beginning of 1960s Marshall McLuhan presented the concept of “the global village” connected with electronic wires. He was the first who, in his work, pointed out to the concept of “the global village” by having seen how the

world was becoming increasingly electronically connected, so an event at one place in real time could have an influence on another distant place, exactly like in a small village.

First Internet steps as we know it today, we encounter in the framework of the development of military industry – i.e. technology. During the Cold War and bloc politics, all parties wanted to strengthen its artillery with the aim to develop as larger and as destructive arsenal. Even though it's far from "common sense", they wanted to maintain peace by having strong artillery and threatening with "first strikes" or "reaction to first strike".

Interactive computer network has been more solidly developing in the last 50 years. Fifteen years ago, when the mass internet development began, probably no one could have imagined how far it would go. One of the popular internet names is cyberspace, which could be translated to virtual space. So, for some people Internet has become a parallel world. The best example of a parallel world is the so-called "second life" which the authors do not want to call a computer game. It is about activities in a parallel world in which it is a lot of what is possible, such as for example selling and buying services, selling and renting real estates, earning money on different bases. It is even possible to exchange money from the virtual world for real money in the real world. There are companies primarily dealing with selling services in the virtual world for real money. The boundary between the real and virtual world is becoming thinner and thinner.

In the beginning, Internet was only a place where you could easily find a great deal of information, be them textual or graphic. Internet today gives us much more than information. Servers for Internet search have attained great popularity, such as Google and Yahoo which today are corporations worth billions of dollars. We are witnesses of great popularity of Internet diaries (blogs) led by regular people. A lot of people have the need to keep a journal and share their thoughts with people they don't know. Last year it appeared that the sharing of amateur video clips and tapes was very popular. The most popular website that enables publishing and sharing of amateur videos is www.youtube.com. Let's just mention that Google bought YouTube for 1.65 billion dollars which is one of the highest amounts paid for an internet service provider so far.

Internet advertisement has become very important, even more important than advertisement in standard media (magazines, newspapers, radio, and television). So a large number of internet webpages is financed only through the sale of advertising space.

The share of trading through global network in comparison to traditional trading is becoming increasingly larger. Auction service providers, such as www.e-bay.com and others have made a massive contribution to the previously said.

Internet today serves as a transaction medium for the transaction of other

information. The most popular is the use of *Voice over Internet Protocol (VoIP)* – voice transmission over the Internet. This is a new technology that enables us to make telephone calls via Internet. Users who make mutual telephone calls find a local phone connection on the Internet and through it use the existing internet infrastructure for voice transmission. This service is especially useful in intercontinental phone calls because you do not pay for the intercontinental communication, you only pay for the local internet connection. Mobile access to internet from hand and mobile devices is becoming increasingly popular.

Mobile internet access and VoIP have reduced costs of telephone calls, especially with a great number of apps, both on the computer and on the mobile phone, that enable an easier and simpler audio connection that can be supported by a video connection, but only if you have strong internet connection. Such apps are Viber, WhatsApp, Messenger, etc..

KEY FINDINGS CONCERNING INTERNET DEVELOPMENT

In the of 1996 there came a great number of e-mail users and a dial-up Internet access with the username of 8 characters length. Internet, as an alternative source of information, started getting its fame at the cross between 1996 and 1997. Radio and TV stations that were banned those days were sending their content via Internet and electronic mail, which had a significant role in big student and citizen protests.

What is a characteristic of those days is that state authorities in the 1990s were not interested in a normal activity of the YU domain, so nothing changed there and everything functioned on a voluntary basis. As a consequence, rights to register a name were limited. “One company – one domain” – but the registration was free. Entire internet websites had the capacity of around 10 megabytes.

Internet revolution – Robert Hobbs Zeichen, an American IT expert, in his overview of the Internet history claims that the first major cyber war was the one concerning the war at Kosovo and Metohija. First local Internet presentations with an altered content adjusted to war conditions saw the light on the first morning of the war, on 25 March 1999. Websites networks were created as a cyber resistance to NATO aggression (Robert Hobbs Zeichen 1999).

At the dawn of new millennium, new opportunities for a faster Internet development started to get created in our country. By investing a great deal of financial resources, “Telekom Srbija” managed to enable an equal access for all dial-up users and in 2004 first pilot ADSL project began in Serbia.

Founding Assembly of the Serbian National Internet Domain Name Registry Foundation was started in 2006 and it was then assigned the management of the RS domain by the *Internet Corporation for Assigned Names*

and Numbers (ICANN). This shift or transition from old to new internet domain was finally completed on 15 September 2008.

Devices surrounding us in almost every moment were created based in Nikola Tesla's patents. The heart of every device is a logic gate and the wireless connection is enabled by the wireless technology.

The .CPB domain was included in rout servers on 3 May 2011, and in 2012 registrations with this name were enabled. It enables us to write the website addresses as they are pronounced.

a. Internet use in Serbia

Indicators for Serbia state that 67.9% of households in Serbia can have Internet access which is a lot better than the global average which is 52.3%, but it is significantly lower than the European average which is 84%. The last report of the Statistical Office of the Republic of Serbia from September last year that concerns the use of information and communication technologies shows the growth of the most important parameters is weaker than it was in the previous years.

In comparison to 2017, the number of internet connections in 2018 increased for only 1.9%. Broadband network, as one of the basic indicators of the ICT development, is present in 68.2% households which shows that almost 20% less households than in the EU countries are connected.

Another analysis according to interviewees' gender says that in the last three months in 2017, 70.5% of males and 67.3% females were using internet, which is close to the average of the surrounding countries.

In the last three months in 2017, the statistics was as follows:

- YouTube views and other similar services – 86.7%
- Reading online magazines and newspapers – 79.6%
- Finding information about different merchandizes and services – 76.5%
- Facebook and Twitter use – 70.8%

THE BIRTH AND DEVELOPMENT OF THE INTERNET

After the computers first appeared, scientists quickly concluded that no matter how advanced a computer was, the amount of information it could offer was insufficient. So it was more than obvious that a system of communication between different computers needed to be invented. In the late 1960s the American army worked on the creation of the ARPANET project for its own purposes. The network was decentralized with the aim of being protected from warfare and in order to prevent network failure in case one computer in the network crashed. When the sufficiently strong network equipment got cheaper, in the aim of enabling a faster internet progress in general, the army allowed universities and other institutions to access the network, so the network got

bigger and bigger by getting connected to other networks and like that got the name Internet.

In time, there came a situation that internet is less and less observed as a collection of different connected networks and more and more as one unique network. Today internet enables access to a great quantity of information of different types and formats, from textual, through graphical, to audio and animated. We have the possibility to access enormous databases and desired programs and to get a very quick response.

Disadvantages of internet are an increasingly large congestion of the cyber space with necessary and unnecessary information that keep occupying users' free time, just like television changed our lives forty years ago by "making" us spend at least 2 to 3 hours in front of it.

Information obtained on the Internet are often criticized as false or socially unacceptable, a characteristic present in all communication media, starting from TV, press, books and so on.

Through its servers, Internet provides its users with a great deal of services – most commonly used services are:

1. *E-mail*;
2. *World Wide Web (WWW)*;
3. *FTP*;
4. *Newsgroups*;
5. *Chat*;
6. *Search servers*.

On the Internet, every user needs to provide their name, a unique username, user address and a password. In that way, internet secures necessary protection measures so we could use the Internet freely and reliably. Most popular internet services are:

1. *World Wide Web* – a recent server and the fastest growing one that uses HTTP for the download of webpages written in a HTML program;
2. *Conversation or chat* – enables a written communication but also voice communication – older examples are IRC, ICQ and modern ones Skype, Facebook and such.
3. *Electronic mail* – one of the first standard internet servers that, among others, uses POP and SMTP protocols;
4. *Usenet* – a network through which it is possible to exchange messages with different interest groups.
5. *Ignorantia iuris nocet* or "not knowing the law is harmful" is one of the basic legal principles which emphasizes that limitations of citizens' rights

or imposition of burden can only be allowed on legal grounds. So every public authorities' act need to have their grounds in the law and legal regulations.

However, legal norms are not written only in laws. Sublegal legal regulations prescribe what responsibilities of state authorities and citizens are and they are grounded in legal regulations. As time went by, internet developed into the largest and most important computer network in the world. Today a great number of people couldn't even imagine life without internet. The initial idea was to make a network that would continue to work even when a part of the network is damaged. The network is created in such a way that there are always alternative paths from the initial to the final point, hence packages can independently find their way. Packages are sent independently, so they can take different paths to reach their final destination. It is possible to re-send packages if they get lost.

Another idea behind internet development is that internet is in fact a collection of independent networks. Anyone can connect their computer to a network and active their server, without having to wait for an approval from managerial authorities. In this way, great accessibility and flexibility are provided, as well as easy ways of changing and adding new contents and services. All service and server providers are completely independent, hence they are more and more motivated to add more and more content.

In the beginning, internet was used by a small, limited group of people and they mostly exchanged scientific information. User servers were insufficiently adjusted to users and people needed a lot of people to learn to use internet. That's why the rise of internet was limited. With the use of first internet browsers, the use of internet and information exchange became very simple. Development of simple web browsers insured a sudden growth in the number of users, hence in the quantity of information. In the last 15 years, we've experienced a high speed internet growth.

What is evident is that internet is gaining superiority over other mass media, such as newspaper, TV, radio and telephones. Internet, as a global network, is becoming a basic source of all information, hence day by day we are more and more neglecting standard media, such as newspapers or television. However, traditional mass media will not disappear that easily, but it is evident that internet is changing almost everything we do and especially communications, the way we do and see business activities, the speed in which we can get various types of information, finding jobs, the way we shop, socialize, i.e. it participates in every segment of today's human's socialization.

The most popular websites, like Facebook or Instagram, make it possible for all users to create their own webpages and in that way enable them to connect to internet where, with other users, they participate in "cyber socializing" – chat, exchange photographs, video recordings, etc. YouTube is a popular website and wikipedia.org is today the greatest online encyclopaedia on

the Internet. Browsers like google.com or yahoo.com and several others enable us to search over the complete network by typing in specific words.

BEGINNINGS, DEVELOPMENT AND THE USE OF INTERNET IN SERBIA

Was there an online life before internet? Yes, there was SEZAM. This program with a complete software (basic program and external apps) was created by Dejan Ristanovic and his colleague Zoran Zivotic. It was founded in 1989 and was designed as a conference system and a system in which people would join to discuss on different topics, which was received very well by the public. Famous *Bulletin Board System* (BBS). You could chat on it, exchange electronic mail, leave comments on forums and download files whose speed per day was only two files and the graphics back then was similar to today's teletext on TV. It all went through old analogue switchboards, with a slow modem connection, through telephone lines if you were lucky enough to establish internet connection and had more BBS time (60 mins per day, 20 mins per call).

a. Forerunners and beginnings of internet

At the end of the XX century, Yugoslavia's Telephone Office built the first computer package network for data transfer in Yugoslavia – JUPAK, but the first computer network that had higher level services and international connection, was founded at the University in Belgrade in 1988 and was connected to the European Academic Research Network (EARN). From 1989 Belgrade University could use services of electronic mail in the framework of a computer network that connected most universities in Western Europe and North America. That was accomplished by connecting Statistical Office of the Republic of Serbia with the hub in Linz in Austria into the EARN network through an academic initiative. Later on, due to sanctions, that network was shot down but the academic network got one IBM mainframe that was enabled in 1991, the same year Belgrade realized a surprisingly advanced network.

At the beginning of 1990s, only a few faculties were connected to the Computer Centre of the Belgrade University – Faculty of Organizational Sciences, Faculty of Sciences and Mathematics, Faculty of Electrical Engineering, etc. In 1991, the first optics exhibition was realized in Belgrade, the first optical network in the country was installed by the joint work of technical faculties. Other larger faculties and some institutes used a smaller speed network and modem connection (9.6 kbps, 28.8 kbps and 128 kbps). The most commonly used user service was electronic mail that used X.25 protocol. As far as optical networks are concerned, there were two, one of which was the Lostud network that connected faculties around the Students Square and the Serbian Academy of Sciences and Arts. The other network connected technical faculties and then a triangle network was made: ETF-FON-RCUB

Back then, 2400 bps was something that we needed to be satisfied with, which seems like a modest number, considering today's conditions and the fact that a great number of households have 10 mbps. Network failures were quite often then, so as the interruption of the optical cable with Hungary, etc.

b. Problems with the national domain

While at the same time getting connected to EARN, Yugoslavia then got .YU domain as the official internet domain and in charge of it was the register of the "Jozef Stefan" Institute from Ljubljana. However, there came the civil war and the decomposition of Yugoslavia, UN implemented sanctions and in 1992 network traffic with abroad was stopped, at least officially. Unofficially, e-mail traffic was still in progress through our friend-countries and via hidden cyber paths. Management over the .YU domain was left in the hands of Slovenia and they didn't want to give it away to Belgrade until in 1994, *Internet Assigned Numbers Authority* didn't rule in favour of Federative Republic of Yugoslavia.

Since then, YU register has been managed by the YU NIC consisted of a group of enthusiastic volunteers, Belgrade University professors (Mirjana Tasic, Bozidar Radenkovic, Djordje Paunovic, Berislav Todorovic...). When .YU was returned to its source location, Yugoslavia was then still under the UN sanctions, so it had to be placed on a server in America, but under the condition that server administrator didn't have to maintain the domain base. Therefore, .YU domain was divided into sub-domain (.co.yu, .ac.yu...) and they were hosted on the servers of or academic colleagues that, in the meantime and due to reasons known to all, left the country and spread all over the world.

c. A fight for Serbia's network connection

In parallel with the unpleasant happenings in the Socialist Federative Republic of Yugoslavia (disintegration of the republic, civil war, embargo), at the end of 1990, a famous British scientist Tim Berners-LI designed and created the first web page – world wide web (www) in the Geneva Institute CERN. UN sanctions that began in 1992 included the network traffic, too. They made human resources in Serbia to look for other solutions. Serbian personnel in foreign universities were of greatest help when it comes to the bypassing of communication sanctions. Digital Serbian Initiative was founded to support communication between the academic communities from Serbia with the rest of the world.

A project of connecting several Belgrade Faculties into the Beonet Internet network was realized in the period between 1992 and 1994 at the Belgrade University, specifically at the Faculty of Organizational Sciences, under the leadership of Bozidar Redenkovic. Several useful systems for that period were created at the Faculty of Organizational Sciences. One of those systems was:

The Conference System "Use net news" in which students could discuss and debate on everything to their liking.

The first open system called “The Smile” enabled anyone to have their own profile and to use the modem and computer from the faculty laboratory and in that way exchange electronic mail.

First attempt to create commercial internet provider happened in Belgrade in 1993. The company BITS offered a very limited internet access.

After signing the Dayton Agreement in 1995, UN sanctions against Yugoslavia were partially abolished. Home internet was limited and that was made up for by a Serbian internet team in North America. Branislav Andjelic and Nenad Cosic began an initiative to enable Serbian and other private companies to have internet access. Production of web pages would happen in Belgrade and then all the content would be sent to Boston via telephone connections and a modem. In the beginning, those pages were made by cultural institutions such as: Belgrade City Library, Yugoslav Drama Theatre, and later on political parties started to create their own (GSS, JUL).

d. The official beginning of internet use and its development

On the 28th of February 1996, which is the official day of the Belgrade University, RCUB connected the Academic Serbian Network (AMPEC) (Picture 2) to the Internet in cooperation with the “Telefonija” Company, later on known as the BeotelNet Provider (Picture 3), which initiated the Internet era in Serbia.



Picture 2. AMPEC logo
Source: <https://media.rcub.bg.ac.rs>,



Picture 3. BeotelNet logo
Source: <https://brankomarkovic.com/beotelnet>

This connection had to happen secretly due to safety and other reasons. Only 15 people knew about the entire operation.

The first realized Internet connection was of modest capacity of only 64 kbps. In latter actions of connecting new institutions, connection capacities increased in several occasions, from 128 kbps through 256 kbps, 512 kbps and 1 mbps to 1.5 mbps, but the capacity was still insufficient and the connections always overloaded.

The first digital connection was established in the late 1990s between Belgrade and Podgorica with the capacity of 2 mbps and then it happened between other universities in Serbia, Novi Sad, Nis and Kragujevac, but in most of the connected institutions the connection was still established via modem, i.e. rented telephone lines.

When in 1996 EUNET Yugoslavia began its work as the first commercial internet provider, finally everyone who had a computer and a telephone line, and didn't belong to the academic community, government or non-government organization, could afford internet as well. Yugoslavia was probably the only one to achieve this, but the occurrence of Internet in our country gave rise to a complete internet service providing. SEZAMPRO opened up the first internet café in Yugoslavia and people who didn't have a computer could use internet.

INTERNET ETHICAL RULES

Internet, that parallel virtual world, is basically the same as the real world, it is not better, but it is not worse either. In fact, digital challenges of a modern man can only be much more obvious than his material reality. The rude and dishonest ones are just like that on the Internet as well, maybe they are even "braver" online, so they emphasize their disadvantages in the comfort of their fake cyber anonymity. It, of course, goes hand in hand with their computer illiteracy.

Of course, many of those internet hooligans have got no clue that their internet activities can be easily monitored, since they leave miles of digital traces after every visited website, sent e-mail message or any other social network activity. So hackers, spammers and haters cannot sleep tightly.

Some of those digital traces are either legally allowed to be kept by the internet or mobile operators or we give them permission to be traced back to us by simply clicking "I agree" on social networks and similar locations that offer registration. Unfortunately, there are other digital traces made by some individuals or companies which are completely illegal for reasons known only to them, which is a complete violation of ethical norms.

Ever since internet as we know it today was born, *Internet Society (ISOC)* and *Internet Engineering Task Force (IETF)* created some of the general regulation and norms of internet behaviour. So, in October 1995, IETF created and official rulebook – *Netiquette Guidelines* that regulated some internet activities like *One-to-One Communication* and *One-to-Many Communication*.

Since ethics is more of a customary law than a legally binding act it turns out that ethics is not strictly in the domain of legal norms. Ethics belongs in the field of social norms or special rules that most often apply only in certain institutions, organizations or companies.

The ones who manage internet in the world today are certain countries, mainly USA in whose hands is the current supervision over the global internet structure. Then there are private companies, government organizations,

civilians, academic organizations and internet organizations. How complicated internet management is can be easily seen on the example of the crucial internet ingredient – content. Speaking about internet publishing rules, we need to take consider at least three point of views: the existing human rights directly related to free speech, right of the state to control illegal contents and technologies, as well as tools for content control.

And now let's think of a possible situation: a personal and inappropriate video tape of an American citizen which was stolen and is now on a website of some anti-globalization organization registered in Venezuela with the server in China. Who is in charge there? Whose law should be applied? The Ethical response would be simple, but the legal response would have to acknowledge the international law, international agreements and local legislations. Each of the states has its own legislations that more or less abide to international norms.

a. Ethical problematics of Internet space

As internet is becoming increasingly important in our lives, our internet and real world identities are becoming the same thing. Earlier, nobody online knew we were unhappy and that we lived second-rate lives. However, today most of us mostly use internet openly without hiding our identities. Many popular networks, such as Facebook, ask as to register under our real names, and we even give our real names on networks that allow the use of pseudonyms, on Twitter for example.

Nonetheless, there is still a division in this field, i.e. the difference between our identities on and off line, at least in terms of ethics. Even though a study titled "*Young Canadians in a Wired World*" found that young people are often kind and considerate to one another on the internet, and this conclusion is supported by research carried out in Great Britain and USA, unfriendly and aggressive behaviour is also very common: in an American study, 9 out of 10 teenagers stated they were witness to "an evil and cruel behaviour towards another person on a social network", while a British study states that "almost one third of elementary school kids and one quarter on high school kids stated that mean comments or behaviour ruin their time spent on the Internet."

Moreover, even the young people who decided to act nicely on the Internet often comment on how internet is a place where ethics and moral are not to be found and where most people say and do things they would never do in real life. This leads us to a conclusion that, even though they have good moral instincts, young people need more guidelines in order to start observing internet as a place in which moral and ethics are to be applied.

This should not surprise us because we do not filter every newly occurred situation through an ethical prism, not even as adults. This partially happens because ethics of an action depends on the situation itself: to inform somebody that a friend has been diagnosed with diabetes would be morally neutral in some occasions, but morally wrong in others (if you are the friend's doctor for

example), and morally right in a different situation (if the friend works as a bus driver and has no control over his illness, which means he is putting passengers in danger). Ethical dimensions can be recognized in actions we haven't thought about before: in drinking coffee or buying clothes.

It can be said that Internet is in fact very similar to a coffee place or a shopping mall because we often do not filter our own actions through an ethical prism. This is because we are prone to feeling moral or ethical responsibility for somebody we dislike, and when we use digital media, we tend to get trapped in the sea of intolerance.

Many things that encourage intolerance in us, such as ace expression, voice, body language, are not present during an internet interaction. Even though young people are on the Internet most often friends with people they know personally it is possible to remain completely or partially anonymous on the internet. When people are anonymous on the internet, or they think they are, they feel less responsible for their actions and towards other since they believe they will not get got, hence be punished.

Since we can never know who follows us on the internet, we prefer the “observer effect” situation. This term is most commonly used to describe a situation in which an individual does not want to act on anything when they are a part of a mass:

Pošto nikada nismo u prilici da znamo ko nas sve prati na internetu, više smo skloni situaciji, „efektu posmatrača“. Ovaj termin se često koristi, da bi opisali faktore zbog kojih ljudi najčešće nežele preduzimati ništa kada su deo mase:

- a. Being a part of the crowd, the chances of you undertaking anything are slim due to the fear of failure, shame or disapproval;
- b. You feel less responsible of doing anything because you probably think it is somebody else's job; and
- c. You are especially sensitive to social norms since you are aware you are being watched – most of the internet activities can be tricky, especially the ones interesting to younger people. They are performed in a wired environment such as social networks – hence, we can keep an eye on other group members in order to see in what way we act in certain situations.

Things young people do on the internet can also have an effect on whether they see internet as a place where ethics and moral apply or not. Video games may encourage (or even ask of us) us to do something that is normally contrary to our ethics, e.g. kill people or rob banks, in a context deprived of ethics because “the victims” do not actually exist and it is more important to win than to question our actions. Even while interacting with other people, in video games with more participants, we do things we would not usually do, if the

culture of the game puts higher value on players' competitiveness than on their cooperation. Research have shown that video games can "prepare" players for prosocial or antisocial behaviour depending on the task of the game.

However, as they grow up, young people go through several different stages of ethical evaluations, which gives a special dimension for the socialization in internet environment. Hence, whether something is right or wrong – and if something is considered an ethical issue at all – can be based on the risk of getting punished for a wrongdoing or rewarded for an act of kindness, how other people look at the situation in question, what the legal regulations are or, under the general principle of justice, all depends on age and moral development of a young individual. However, progress through these stages does not happen automatically: it is necessary to direct young people and teach them how to accept certain rules of behaviour, especially in later stages. This is maybe the greatest for why young people often fail to observe internet through an ethical prism: research have shown that many parents talk to their young ones about internet, but the frequency of these conversations decreases with as they grow older.

c. Serbian internet ethics

Serbian internet ethics has got some serious problems. For years Serbian scene has nurtures the culture of "loudmouths" whose only expertise is reflected in how fast they can type, how fast they can accept wrong visions about the world around us and how fast they can earn money on the internet regardless of the legality of their actions. Fortunately, such people are often easily seen through, so their influence is becoming weaker.

On the Serbian internet scene, encouragers of the unethical behaviour are domain thieves, trolls (the ones who spread meaningless disputes in order to distract the public), bots (convinced or paid writers who leave comments on media portals). Then we have their "illegal friends", hackers (common violators of the Criminal Law) and spammers (violators of trading and communication laws). We should not forget quasi doctors who, by just being present on the internet, disturb the dignity and personal safety of individuals by publishing dreadful and invalid details on other people's lives, only to contribute to their financial security, influence or political goal.

d. Ethical paradoxes of internet

We know that internet can distort traditional borders, set between public and private activities. Generally speaking, development of media culture and the establishment of a more transparent society by setting aside or overcoming many taboos. To create your own personal web page, to post a photography, write a diary or share intimate news means to place your privacy before the eyes of the public. Being on the internet means being recognized in social and global terms, since one private part of a certain person, i.e. individual, has become socially acceptable in cyber space, without any limitations.

In this way, Internet does not only force its users to expose their privacy, but it also favours the practice of exhibitionism and voyeurism. We need to ask one more question – what happened to our identities? It seems that we are slowly losing it because new social and global streams are becoming more apparent and is difficult to keep our identities for ourselves in the chaos of those happenings and at the same time save our privacy and individuality.

What is particularly apparent in the use of the internet is the creation of a new psychological space in terms of how we understand identity. Good example for this are electronic personal journals that for many internet users represent a challenge and an obsession. This is definitely one paradoxical form of expression on the internet.

Analysis of certain information and communication internet practices through interpretation of personal blogs, chats and forums confirms a certain ambivalence:

- a. On one hand, internet is a free space in which everybody can express their sensibilities, fantasies and phantasms; and
- b. On the other hand, internet is a space that allows us to see without being seen and to be seen without knowing by whom.

CONCLUSION

So as to enable a good-quality access to information, internet in Serbia has been developing quite quickly. Its development was followed by numerous complications and political changes, but being something we cannot imagine our lives without, it managed to overcome all obstacles. The success is even greater when we take into consideration the impossible conditions it was developed in. Today, it is one of the best in the region.

Of course, information and data are today exchanged in great speed and it is much easier to get them now than it was before. In Serbia, internet had a massive role in the first cyber revolution in the world, as well as in the first cyber war in conditions much worse than today.

It has its history, tradition. It even has its own language, an essence that helps us and makes everyday life easier.

Distant traces to Serbia can be found – a famous scientist, globally famous, Serbian origin and his name was Nikola Tesla who is considered a visionary who predicted the arrival of network technologies and internet.

“It will soon be possible that, for example, a businessman in New York dictates instructions that will be recorded in London in that exact moment, maybe somewhere else... He will be able to listen to or send a speech or a song to the farthest corners in the world. In the same way, any form of pictures, drawings or printed materials, shall be sent from one place to another” (Nikola Tesla, 1900).

In the beginning, you could enjoy all wonders of the internet freely and without any limitations or control. However, by implementing different kinds of licences and conventions, internet became available to everyone, but with certain limitations. Hence, the authors and inventors managed to remain protected enough and to achieve some profit from what they did.

Therefore, sanctions exist and are here to help us achieve that ideal balance between almost unlimited internet possibilities and the users' freedom that must not endanger anyone else, i.e. anyone else's freedom.

Ethical side of internet tells us that, by its content, it is not anything better or worse than what we have in real life. Some possibilities are more easily accessed, such as word manipulation or hiding true impressions, but it is also much easier to expose someone's privacy via internet. That's why we have law, to solve our ethical dilemmas, even on the international level.

The goal is that every profession keeps up with the latest tendencies of information technologies and in that way becomes a modern and safe technology serving the citizens. We will have a better and quicker service. This is the road we need to take because it is evident that the one who keeps up with technological achievements or applies them in their line of work has greater chances of success.

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***II Part: EFFICIENT MARKETING
MANAGEMENT***

CONTEMPORARY TOOLS IN THE PROCESS OF EFFICIENT MARKETING MANAGEMENT IN THE COMPANY

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ABSTRACT

The modern market is a testing ground for competition between supply and demand. It is the result of large, interconnected social forces, which have created new behaviors, new opportunities and new challenges. Technology is changing towards the digital revolution. We live in the information age brought by the globalization. All this imposes the need for deregulation of economic activities, which have a greater potential for growth and development. The trend of privatization of major industries is aimed at increasing productivity and efficiency, focusing on continuous performance monitoring. New trends in the business position of producers and traders have also contributed to the empowerment of customers. They expect better quality and services and adjustment and monitoring of needs, as part of an efficient marketing management.

Controlling is an integral part of the process of marketing management. Control is directly related to the planning, in the way that planned size, defined goals, decisions and strategic action are converted into specific standards. Actual results are measured and analyzed in relation to set standards in order to determine the need for potential correcting of plans and the way to carry out these corrections.

Key words: Efficiency, Management, Customers, Standards.

JEL Classification: M31

INTRODUCTION

Controlling is an integral part of the marketing management process. Controlling is directly related to planning, in the way that the planned size, defined goals, decisions and strategic actions are translated into specific business standards. The actual results are measured and analyzed in relation to

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the set standards, and in order to determine the need for eventual correction of the plans and the manner in which these corrections can be implemented. An essential requirement for effective control is the existence of a developed and propulsive system of information that serves to assess and adapt efforts and goals. The success of the human factor work, which transforms organizational inputs into outputs, is imposed as the primary object of marketing control. Controlling is achieving personalization through people who are the bearers of a two-way manager-subordinate relationship. With the existence of operational, financial and managerial information management controlling is enabled and facilitated.

Planning is trying to predict the future. Controlling is carried out because the future cannot be completely predicted. Controlling is necessary because the manager can not foresee such things as general economic conditions, demand, availability, accessibility and the price of resources, and as the most complex factors, technique, technology and the human factor. Uncertainty is the product of combinations and the interplay between internal and external factors.

With how many employees the manager can manage productively is the question of managerial organizational levels that reflect the range of control. It is conditioned by the ability and skills of employees, as well as managers who control the performance of the business process and the fulfillment of planned tasks. A more trained work collective requires less control, provides a better system of relationships and communication with management and can, therefore, be used for a wide range of controls.

If there is a greater degree of similarity and complementarity of the tasks set, procedures standardized and propulsive information system, a wider range of controls is possible with the achievement of the high degree of efficiency. A greater range of controls brings cost savings, increased flexibility, faster decision-making, broader democratization in decision-making and a better and closer relationship with customers.

An effective control system provides the management with timely information regarding potential deviations from the plans. In some cases, it is necessary to change the plans themselves, while others need to change the structure of the invested resources. An effective control system always has a vision of the future. Thus, the management manages to prevent deviations from planned tasks, or at least not to repeat the mistake that have been made in the past. Good planning is the basis for successful control.

THE PROBLEM OF SELECTING AND ADAPTING STANDARDS IN MARKETING CONTROL

Control should always be viewed in conjunction with planning. There are many areas of business where the boundary between planning and control is difficult to draw. The control process begins by defining business standards. Standards are criteria that ensure the proper allocation of resources in the

function of achieving the defined goals, over a specific period of time. Logically, afterwards, a comparison of planned and achieved results is followed and finally undertaking corrective actions. In situations where market conditions are relatively stable, the basis for measuring the effectiveness of planned activities are plan indicators. Practice, however, denies daily the existence of stable conditions, and hence the planning elements should be treated as a directing and coordinating factor of the company's operations towards the goal. In order to properly define business standards, it is necessary to systematically and thoroughly analyze and evaluate what can really be achieved, given the conditions of the company's environment and resources. As criteria for measuring the efficiency of the marketing activities application, standards are being changed and adjusted faster than the changing nature of the marketing concept, and the difficulty of having it "cracked" and placed in measurable frameworks. Defining standards requires knowledge of the opportunities and conditions in business both in the past, in the present, and anticipated in the future. Only in this way the reality criterion can be provided, because only real standards, with the right stimulation, can be made feasible.

Business standards define the conditions in which the enterprise is to be brought into the projected future. The desired conditions are defined by the goals, and the plans include the means, activities and directions to achieve those objectives. Comparing the results with set standards provides new information, where ideas for formulating new indicators are born, which again enriches the choice of standards. It is very complex to set up a system of standards that reflects "normal", i.e., "balanced" operation of the business system, and which are the basis for the control system. The effectiveness of control standards depends on the speed at which it points to deviations, and timely take action to remove the deviation (Milisavljevic, 2006).

Standards can be defined in different ways. In trade companies, they can be defined as the volume of sales, in physical or financial indicators, individually by placed products, or together at the level of the production program. They can be defined on a particular object, depending on its structure, position and characteristics, or at the corporate level as a whole. This requires standardization of standards in terms of setting specific parameters of business valuation for each facility or business unit individually and also their correction over time, taking into account changing conditions on market and in the environment where the business entity operates.

Companies often resort to widely set business standards. They are reflected in defining the desired position on the market, the level of profitability, the level of human resources' capability. In this way, the structure of the appointed personnel makes an appropriate relationship between the company's short-term and long-term goals. Business history, indicators of competitive position in the branch and others can be used as the basis for setting standards. The basic

business factors that are expressed in standards, to which the control system can be directed are:

- Quantity,
- Quality,
- Costs, and
- Time.

The control is performed by monitoring one or more factors, depending on the control purpose, the scope as well as the fact in which service is performed. That's why there is often a conflict of interest because reducing costs in one business unit often leads to losses on quality. Compliance with deadlines of job completion often requires overtime, which increases the labor costs. On the other hand, insisting on the highest quality can exceed production time or deadlines, and in turn contribute to the cost increase and more.

There is no universal factor that would include all the indicators and aspects of the business. Therefore, it is best that each business entity defines its efficient combination of indicators, which will ensure that it monitors changes in the utilization of its internal resources, while improving its position in relation to competition, as a response to environmental challenges. Inadequately chosen standards are only the satisfaction of the form, which has no purpose or significance. Control for the form, which functions impeccably, does not mean anything if it does not contribute to an adequate regulation of the business entity market activities.

With the flow of time, one needs to keep in mind that once established standards are obsolete, both by content and by quantitative features. By changing the structure of marketing activities today, much faster than other business functions, new segments are created, so it is necessary that they be covered by the setting of standards, or a control instrument. Regarding the quantitative determinations of standards, they are changed often, under the influence of the economic conjuncture, inflation, the application of new technology, etc. Standards, therefore, need to continually improve, review and follow new business tendencies in order to be in function of company' efficiency.

Control standards are essentially a line of delimitation between what is considered as a positive result, contrary to what is negative for the strategic position of the enterprise. Their introduction into the control system is an attempt to automate and alleviate the problem of marketing regulation. However, the notion of good and bad in economic life is very relativized, and with the flow of time the relativity is even more pronounced. Stability of standards is one of the technical requirements of formally well-regulated control systems, since at the same time they represent the template of criteria for delimiting positive and negative business of the company.

In fact, it is necessary to determine the optimum between the requirements for stability of standards, and the need for a qualitatively elastic control system. There are no general rules for finding this optimal relationship, both for an individual business entity and for each standard individually. There are numerous factors that affect them, some of which are internal and some of the external character.

Changes of standards are inevitable, and they are constantly influenced by reconsideration and demand for improvement, but it is necessary to flexibly set their limits and deadlines for change, as it takes time to correct them, and to test their applicability and acceptability in practice. It is always better to gradually and plainly correct the defined constraints, than radically, because it takes a lot of time and training to accept and apply the new concepts, if they want to be put in a proper way, which provides the opportunity for other competing companies to gain a market advantage. The standards also change the system of relationships in a competitive business environment, so the concern about them has wide and far-reaching consequences, within the branch in which the company operates.

Regardless of the fact that the standards are an important element of the control mechanism, there is always the risk that they will be a brake on applying more creative approaches to control procedures. In the context of marketing efficiency control, it is often necessary to perform certain diagnostic procedures beyond predefined templates, which sometimes have a research character. In such cases, the control procedure must be free from rigid binding to standards, as this would be limiting to the application of the most appropriate procedures.

The control process should not only represent a statement, nor an explanation of deviations from the given standards. It must also contain a critical overview of the set standard and operating standard. Marketing control, apart from having the task of establishing and explaining how plans are being implemented, has to deal with the question of whether the plans are adequate, or whether the company has chosen the trends that, in accordance with the internal chances and opportunities and resources of the environment, provide optimum economic growth.

DUAL CONNECTION OF FORMULATION AND IMPLEMENTATION OF MARKETING

Formulating and changing marketing strategy, are selected pathways of companies to gain and maintain the competitive advantage on the market. Being better than others, being a leader in the branch is the general goal of every economic entity. Competitive advantage is constantly on trial because the old or potentially new market participants who tend to catch up, to imitate its offer or find the suitable substitutes. In this way, competitive advantage can be significantly affected or impaired. In the formulation of marketing strategy of the company the starting point are the possibilities and sources of the company

and the limitations of the environment, taking into account that, by its own orientation, company should be less under influences of other factors of market in which it operates. The task set for the marketing management is primarily to determine the priorities in objectives and actions to achieve those.

Relying on its own strengths and taking into account the opportunities provided by the environment the company find its place in achieving objectives. Better results, or the results that may be affected more, are provided by the elements of the strategy that essentially has the potential of the company, taking into account the limitations and the internal weaknesses. Greater uncertainty in realization is provided by strategic alternatives according to which the company sees greater perspective in opportunities and possibilities offered by the environment, without heavy reliance on its own creativity and inventiveness of the working collective.

For the successful formulation and implementation of marketing strategy, it is important to coordinate on internal and external factors, opportunities and limitations. Selection of adequate range and structure of the working collective, their positive motivation, is a condition that the objectives of individuals be embedded in general orientation of the company, creating a spirit of community and orientation towards success. Managing, as a function of management, should be understood as activities in open system, which receives influences of the company and suffers its feedback effects. Decisions taken by management and from which derive business ventures and actions are carried out within the framework of the overall market environment, which requires a high level of knowledge and understanding of factors that opting it. It is necessary to take into account the principle of social responsibility of company's business. Strategy that takes into account the social responsibility is easier to accept and implement, as a rule.

In essence of marketing strategy is profit orientation, but we should not forget the need to protect consumers, while preserving the physical environment and meeting the demands of ecology, contributing simultaneously to the formation of domestic product. Sports activities are getting their mass and top sports and their results are followed by great auditorium. They are, at the same time, reference groups with which the population desires to identify.

Advanced society and simultaneous solution of social problems are providing a return of greater possibilities for the development of operations and various activities, where each entity can find its place. This creates a positive public image of the company, which attracts the potential investors, the shareholders, but also the willingness of new staff to combine their knowledge and skills in the framework of company's business. By accepting the social responsibility in terms of business, it is possible to avoid higher level and further regulation of government organizations and institutions in economic activities and reliance on self-control as the direction of regulating the business movements of economic subjects. More initiative in solving problems reduces the need for the state to regulate and intervene in the economy. By taking social

responsibility marketing management can prevent the actions of government, thus, the costs of the state apparatus are reduced, the taxes are reduced, while the benefit of society rises to a higher level.

The environment represents concept of unity and contradiction, overall factors, both inside and outside the company, which are relevant to its business, observed in short and long term. In review of fundamental environmental factors, it is possible to determine the basic tendencies and trends of environmental changes, under whose influence the changed conditions are occurring. These conditions provide basis for starting business process of enterprise, in terms of new opportunities and possibilities, and dangers and limitations. Macro environment is created by factors of general economic and business situations, such as engineering and technology, demography, political and legal regulations. No less significant impact have elements of social and cultural aspects of society, which at first glance have indirect influence, "from shadow", but to a great extent affect on forming consumer's attitudes and demand, and impact on business habits, motivation and work performances of employees which create an offer in the company.

All of these factors influence at positioning of undertaking, and determination of its strategic position and strength in the battle to win over each customer. The business environment makes system of connections and relationships, formed by interweaving of many factors, but for the area of strategic control, it is important to determine areas directly linked to the undertaking, which is the subject of strategic control. Sometimes some general influencing factors have almost a minor influence in business and result of enterprise, and many less general influencing factors have a crucial influence. However, these are more exceptions than regulations, and general conditions in given market, such as competition, conditions for acquisition, distribution channels, power of relations and relations of power for all participants in the supply chain, sales and distribution, affect, more or less, to all players in the market competition.

Demand of enterprise is impossible to predict without knowing the condition and indicators of extrapolation movement of market parameters, in total and by individual segments, by assessment of consumer opportunities, current and potential, in order of marketing reviewing. How customers make decisions about purchases, who influencing them, to whose views and opinions they rely on, and to whose they look up to, is need to monitor in framework of general economic trends. Numerous models of consumer's behaviour analyses, which are defined by marketing theory, can be used for strategic control, and marketing review. As part of marketing reviewing, it is necessary to monitor and analyze the relationship and the strength of competition. Basic aspects of competition are related to determination of competition forms, with the possibilities of changes in the relationship. It is also necessary to know the objectives, strategies and applied techniques of competitive actions, as response to challenges for our company and our responses to their actions. The

emergence of product substitutes is important aspect of balance of power among the competition.

Re-evaluating objectives and strategies of marketing, strategic control enters into analysis marketing management key categories. From the standpoint of marketing application effectiveness, we should always start from optimal growth, as general control criteria that will measure success of the company. The goals and strategies to reach them, must operate in conjunction with found opportunities and identified limitations in the environment, and in accordance with real picture and insight into resources which undertaking disposes now or in anticipated future. How to formulate objectives of enterprises, is there a hierarchical and functional consistency between marketing goals and general business goals, are some of the questions that marketing auditors must respond when implementing the methods and techniques of strategic control. In doing so, they should always take into account real business and personnel capabilities of company, which determine its current and future position in the market.

Inseparable part of activities of company goals reviewing, as part of strategic audit of company, is reviewing marketing strategy, because the process of defining goals and process of defining marketing strategy are intertwined with each other and there is a high degree of correlation between them. It is a collection of mechanisms which company applies, in order to achieve the stated objectives. Analyzing undertaken strategies is complex and time-consuming process, and parallel with objectives, set in the current period but which project position of company in the future, must be made. Goals must have high quality, and reflect optimal position of company in the future, but on the other hand, they must reflect compatibility of strategies with real possibilities of company and its position in relation to environmental factors. The goals and strategies are therefore set and reviewed almost simultaneously. As with goals, it must exist consistency in scope and application between strategies, as between different hierarchical levels, so between strategies of individual business functions, fields, customer categories, or other business segment, depending on business policy or chosen model of organizational structuring.

BENCHMARKING IN THE FUNCTION OF MARKETING CONTROL

In the essence of benchmarking, as the concept of modern management, there is an idea of the company's performance and strategic position evaluation. This concept defines certain standards that company must achieve, if it wants to be competitive, or to achieve a different advantage over the competition. The company identifies a market leader that represents the standard for comparison and whose strategic position it wants to achieve.

Benchmarking is much more than a simple competition analysis. It includes both analysis and familiarity with the way competitors work, with sources of

their competitive advantage, the goals they have set and the activities that come along. In this way, by knowing the strengths of the company, where it can develop an advantage over others, as well as its weaknesses where competition gets an advantage, the company can look at its place in the market. Creating a competitive advantage is a process that requires the constant revision of goals and strategy, so the benchmark itself, as the set standard, is constantly under pressure of change. In this way, the company is also acquainted with the flaws that current leader has made in his life cycle, with the tendency to avoid such dangers.

Benchmarking is based on the idea that it is possible to explore the best practices of other companies, and then apply changes based on these observations. Benchmarking helps companies focus on the surrounding environment and improve the efficiency of their business. Some companies position benchmarking as part of a troubleshooting process to improve business, and others as an active mechanism to keep up to date and be aware of best practices. In order for the companies to acquire the best attributes, the following steps must be applied:

- to know themselves, their sides and weaknesses,
- to understand how leading companies operate on the market they want to highlight,
- to use the best available procedures,
- to never stop doing business improvements.

To what extent of competition analysis will the company's management determine and what business processes will be involved, is the matter of choices, and set goals. Since so-called standards are observed as elements of controlling management actions, their choice is influenced by a large number of factors in the company, and beyond. There is an interactive link between the chosen marketing strategy and the competitive advantage. This relationship exists both with the existing one and with the creation of the future, preferred advantage of the company. Under market conditions, this means fighting for every customer, and offering a wide range of alternative options for meeting needs.

Determining the type of standards, i.e. including benchmarking as a parameter and business standard of the company, the area of marketing control is also determined. As a control process, benchmarking procedures are based on processes and operations that need to be observed, through defining objectives that are desirable to achieve, and which represent superior performance of leaders, till making plans and actions how to improve the characteristics of one's own company on the way to reaching the leading position.

As a specific control process, benchmarking involves analysis and knowledge of external factors and opportunities and internal processes and possibilities. In theory, as the most exploited, stands out the benchmarking

methodology used by the company "Xerox" (Todorovic, Djuricin, Janosevic, 2000, pp. 232).

According to this methodology next five phases differ:

- planning,
- analysis,
- integration,
- action,
- maturity.

Planning as a prerequisite for each control process, is tasked to answer several questions. First of all, the marketing management of a company should determine the areas of business that will be subject to benchmarking. Each company has business processes, which are the backbone of business. Acquiring the company's specificity and competitive advantage, it achieves by forcing of these good sides and creating a specific sense of specialty for consumers. Each of these performances can be subject to benchmarking.

The next area in the planning phase is finding a company with which the enterprise needs to be identified and compared. The essence of benchmarking is to follow the best, but in practice it is often better to conduct a comparison with a company that is slightly successful, but not a leader. This is a gradual process of step-by-step improvement, which often avoids unrealistic marketing management requirements, and does not make drastic changes in the company, which enormously increase costs.

As a tool for the planning phase, the procedure for determining methods for collecting data for comparison is imposed. Here is expressed the readiness and training of marketing researchers which must expand their activities beyond the framework of competitive conditions analysis.

It is a large number of quantitative and qualitative indicators, documented and confirmed, but mostly by personal and direct research and testing. In order for this process to succeed, besides human resources, there must be a high level of cooperation and trust between the two parties in the business relationship.

Furthermore, it is necessary to establish, as far as possible, a permanent program of cooperation between benchmarking partners in order to ensure a continuous improvement cycle and positive changes. In order to improve business, informal benchmarking, which refers to informal communication between partners, should also be encouraged.

The second stage of benchmarking involves analysis. It starts by determining the differences (gap), which exist from the perspective of achieving the desired market position. This phase involves deep and studious detection of causes which determine defined differences, and identification of factors that can be affected by business policy, but also those at which marketing management can not influence. These activities provide sufficient information

to, from the point of view of company's current position, predict or project the performance of the future, desired position of the company.

The integration phase is in the function of operationalizing the desired position, by setting goals to be achieved. In order to motivate the company's personnel potential about the common goal, it must be familiar with the results of the comparison, with the weak and strong sides of the company and the ways in which the future position will be achieved. The role of marketers at this stage is irreplaceable, as the driving force for change, and the mobilization of personnel potential.

A planned, guided, newly established strategy is a prerequisite for success. Plans can be broadly set, with specific activities, as parts. Like any control process, benchmarking requires constant review and redesign to keep pace with the changes, and new technologies that are all present.

The company's maturity phase, as well as the same name phase in the product life cycle, is a full-power phase of business entity, when it reaches the strength and position of the leader, and serves for other and weaker ones to look up for. Benchmarking as a way of control, primarily has the role of driving to a higher goal, and does not allow the company become encapsulated and lazy. What needs to be said is that the complexity of the procedure itself often requires additional costs and the engagement of new, qualified staff, which is a financial difficulty for the company, but the effects, if the right actions are taken, are long-term and worthwhile. The variability of business conditions and the constant need for innovations are an imperative of adapting the modern control system of marketing management, and those changes are not their own goal, but the response to the environmental challenges. The true value of benchmarking occurs when a company starts using and applying best practice.

Benchmarking is a great analytical tool that can be used either on its own or as an integral part of some other strategic projects, such as a business plan. It also appears as an integral part of the company's value management concept. Benchmarking is often an integral part of total quality management (TQM).

The purpose of competitive comparison is to establish how competitors do something to decide how to imitate or improve some techniques. The focus should be largely on judgments and estimates. It can be compared to both companies and their SBUs. In doing so, a distinction should be made between strategic and operational comparisons. Strategic comparison is of particular importance for companies that are willing to learn not only on their own but also on others' experience. Internal benchmarking analyzes existing practice in particular areas of business in identified activities, drivers and best performances. External benchmarking consists of comparing operations with other enterprises. Three types of external benchmarking can be distinguished:

- Competitive - it observes how direct competitors function (strengths and weaknesses of competitors)

- Branch - seeks to identify trends, innovations, new ideas within the industry
- The best in class - watching more branches to identify the best innovative practice, regardless of its source.

Although benchmarking can be carried out by an individual, teams are formed to implement the benchmarking procedure, as this creates different views, special skills and different business relationships of individuals entering the benchmarking process. The structure of the team depends on the purpose of the benchmarking project, as well as the size of the company, its financial capabilities, the number of selected benchmarking items, the deadline of benchmarking, and more.

It is recommended to create a small benchmarking team of creative individuals who will lead the project, and who will then bring together high-quality people to perform tasks successfully. When choosing a team, the characteristics of a good team should be taken into consideration: training, experience, medium management support, senior management support, recognition of the project's goal and the importance the project has for the company's growth and development.

Modern business conditions put in front of management requirements for quick responses to strengths and weaknesses, within, as well as opportunities and threats to the business environment. In such conditions, management requires instruments that will provide him with the necessary information for successful business management and ensuring a competitive position. Benchmarking is an instrument that enables a continuous process of comparing organizations with others, with the aim of finding and performing the best business practices in order to ensure long-term competitive advantage. In the last few years, benchmarking has often been discussed in the context of business management, but more and more often as one of the modern controlling instruments, especially strategic controlling. Strategic controlling is focused on building future potential for success, and in this context it is valuable to have knowledge of how something (product, process, function) can be achieved better and how to open the way for a lasting learning.

For the actual success in the implementation of this instrument, the process orientation of comparisons is important, as well as organizational-cultural preconditions. In its essence, benchmarking is the process of learning and acquiring knowledge for the purpose of applying what is learned and improving its own business practice. Appropriate integration of this instrument as a part of marketing control, enables its use to increase motivation. If benchmarking can fulfill its function, which is the institutionalization of learning, in the company and in the marketing function, there are many opportunities to increase efficiency, increase adaptability, and use chances in competitive relationships, which are ways of increasing strategic success.

STAKEHOLDERS' INTERESTS AND MARKETING CONTROL

A stakeholder is a community, group or individual who has (direct or indirect) interest in the company's business (project, program, business, practical policy, etc.). A stakeholder is also an individual, or a group of people, who influence or is affected, positively or negatively, by the results of a business activity. The share or influence in business occurs in three types, that is:

- Interests - when an individual or group is tangled by a particular decision and has an interest in it, and in particular regarding the consequences;
- The right: by law - when an individual or group has basis or requirement provided by law to be treated in a certain manner; moral - when an individual or group considers that, based on a moral right, have the basis or requirement to be treated in a certain manner;
- Ownership - derives from management based on ownership.

Interested parties (stakeholders) are groups, social environments, social actors or institutions, different in size and connection, which:

- operate on one or more levels (domestic, local, regional, national, international, private, public),
- have a significant and special share in a particular "situation", and/or
- they can intervene through the means at their disposal.

In the business environment there are many subjects - business stakeholders. The concept of a stakeholder develops in parallel with the development of business. Traditionally, stakeholders are suppliers and buyers, the ones from which the company acquires to realize the business process, and those who procure from the company. By spreading the boundaries of businesses and the emergence of large corporations, the main groups - significant for successful business - have been noticed; the stakeholder view of the company emerged, where manager must recognize groups for which the society or the groups themselves, claim to have interest.

Management also has to take into account whether specific groups are primary or secondary stakeholders. These terms must be used cautiously, as many stakeholders think that they are primary - to get the treatment they think they deserve. Primary stakeholders have a formal, official or contractual relationship with the company, and others are secondary, but should not be ignored (for example, the media).

As is known, managers have a strategic responsibility for the development of the company, its goals, business policy and strategy - which is more than solving specific problems. They anticipate changes and painlessly carry the company through problems arising from changes. Stakeholder management

became important when managers realized that there are many groups that should be relatively satisfied, so that the company can meet its goals, while ensuring that the primary stakeholders of the company achieve their own goals, and that others, eminently secondary - will be satisfied.

The business of the company must be planned and controlled, because the interests of numerous interest groups are interwoven through it. These interest groups that are interested in the activity and operations of the company and affect it directly or indirectly, represent the stakeholders of the organization. Depending on whether their interests are directly or indirectly dependent, the organization is characterized by direct stakeholders, including employees, shareholders and the board as a management body, and indirect or environmental stakeholders where interests are identified by suppliers, customers, competition, government agencies, workers trade unions and others. The stakeholders include various professional associations, potential buyers, potential employees, local and national communities, schools, lawyers' chambers and associations, and more. The stakeholder concept was firstly analyzed by employees at the Stenford Institute in its internal memorandum, in 1963, and later developed in Frimen studies (during the 1980s).

All these groups and organizations of people are gathered around the common goal, the successful operation of the organization, but everyone participates in the activity in its own way, directly or indirectly, and in basis are people, organized in smaller or larger groups, always guided only by their own interests.

The nature of the relationship with the environment, or interest groups in it, is still one of the ways in which the environment influences on marketing management of the company. They affect the company's business, but decisions and actions of the company influence back on them. Management functions in marketing are influenced by external stakeholders, both planning and organizing, as well as management and control. Factors in the environment can have a multiple effect on the operation, business and results of the company.

They can significantly increase the degree of predictability of changes that company can count on, thus encompassing them with its business plan, and minimizing risks to the minimum. This also facilitates the control, which gets the features of the predictive function, and the function of monitoring realization, while the post festum activities are insignificant and with minimal corrections. Thus, a greater degree of flexibility is achieved, which is a feature of a successful companies that find a satisfactory place in the market. These companies more productively apply innovations, face reduced resistance to changes, and shareholders' and employees' interests are becoming common. All this contributes to a greater degree of trust between stakeholders outside and within the enterprise, confidence in the joint mission and goal, and confidence in the strengths and resources to achieve them.

Employees, in a modern company, are not just a simple sum of labor on the company's payroll. Modern business, requires a qualified, educated and flexible workforce with a large number of skills. The global economic crisis, today, have made rivers of people losing their jobs, but we are increasingly confronted with the paradox that there are not enough trained experts.

Planned education, not just the multiplication of graduates, without a clearly defined business strategies, is a large ballast for each economy. The demographic structure of the population is not in favor of modern technologies, because we are facing the tendency of aging. In managing marketing and controlling processes, the number and qualification structure of employees is not the only thing important to management, but also their attitude towards organization and work. Participation of employees in management is one of the prerequisites for an effective organization. Ways of managing workers and their social values vary from country to country, but one is certain, where the sense of belonging to the company is greater, longer working life in one company and participation in decision-making is a rule, results are always better. In this regard is also the company's control system. If employees are more interested in carrying out work tasks and the success of the company, they will not provide management with resistance to the introduction of controlling actions, but on the contrary will give ideas and guidelines from operational activities, and implement a unique self-control system.

The shareholders and the management board are the governing bodies in the corporation, in accordance to ownership structure. The former phenomenon that management authorities are separate from ownership, today is losing momentum and shareholders are not only profit-oriented but also take part in governance because they understand its significance and role. From a control point of view, these categories of stakeholders are very interested in having a propulsive information system that is in function of making business decisions. These categories are often opposed to employees who want higher fees for their work and benefits.

Management must regulate their interrelationships and keep them balanced in the short and long run. Often, individuals are in conflict with themselves, because they are employed in one company, spend simultaneously products of the companies, and also have a stake in the form of shares. The roles are contradictory, but they must be balanced, and planned, depending on the steps and actions that need to be taken in a given moment, and the skill to see and project effects in the near and further future.

As a rule, companies focus on maximizing profits, and not on values for shareholders, thus the view is that such tendencies lead to short-term planning, and insufficient investments in marketing. By placing an emphasis on increasing sales, market share and profits, it leads to cost increases, and the separation of funds to increase wages. This leads to neglect of investments in new marketing

ventures, and negatively influences the long-term competitiveness of the company.

Contemporary marketing theory and practice imposes a tendency for marketing to complete its coverage, influencing directly on increasing shareholder value, or increasing the market value of the company. For the selection of alternative marketing strategies, value analysis for shareholders should also be used, as a factor that contributes to maximizing shareholders' value, or the value of company as a whole. Thus, marketing becomes an integral part of the overall management process, and its success is measured by the contribution to increasing the shareholders value.

Neither the impact of stakeholders operating from the outside environment should be ignored. Among them, consumers who act as individuals or as institutions, are standing out. Today, there is a growing practice of establishing and maintaining new relationships with consumers, who are always at the forefront of marketing management. Consumer associations have a major impact on the organization's business policy and its competitiveness. These associations are oriented towards the protection of consumer rights, product quality control and the search for new value-added products.

Suppliers are a category whose role and position in the chain of creating new value in an enterprise depends on the price and quality of finished product. The mutual position in the supplier's market affects the conditions of raw materials and labor the procurement. Analysis and knowledge of the supplier's market, is a necessary part of researching conditions on the environment where company operates, and in function of control and audit. The information necessary for the marketing audit of the company is related to the most important characteristics of the company's suppliers, information on the largest suppliers in the branch, potential suppliers, and more.

The business and results of the company's work depend on various external and internal groups. It is primarily about the inputs of labor and assets, which are invested and which come from the company and the environment, and the outputs (products and services), as the products of labor, which are valued on the market, and based on which the functioning of company is gainful. Establishing company stakeholders as interesting groups is among the important tasks of marketing management. There are a large number of people in the environment and one should meet those that affect the operation of the company and recognize their interest in it. It is also necessary to determine the nature and essence of these interests, in order to determine the degree of impact, and how to objectify them for the benefit of the organization's business. Not all stakeholders have the same relevance to the organization as a whole, nor to individual management functions and decision-making within.

The importance of stakeholders is observed in interaction with the nature of environment in which the company is located and operates, that is, the degree of security uncertainty of the business environment. An uncertain environment and

changing conditions, require the establishment of more quality and more meaningful relationship with stakeholders, their continuous monitoring, and an increase in quality of these relationships. Understanding these relationships as a way to a common goal, where all, or most of the individual goals will be achieved, is a prerequisite for business success. Since the stakeholders are beneficiaries of financial analysis, the specific objectives of the financial statement analysis are related to meeting the information needs of the stakeholders. When talking about stakeholders, the most important are equity investors and creditors (bond investors, banks), that is, those users who provide capital to the company and as such allow the input of money resources into business flows. The management process, that is, the rational use of resources and strengths, involves management activities in all areas of business, as well as maximization of value for stakeholder groups. This imperative imposed the definition of a management concept called Value Based Management - VBM (Koller, 1994).

At the core of this concept, the growth and development are not the only leading idea of company and the target point of its strategy, but in the long term, maximizing the interest of shareholders that gives priority over other stakeholders in and outside the company. Only after maximizing profits, that is, yields on shares, it tends towards this concept, and optimizing the other goals of groups that have interests in the company's business and groups from which the functioning of company depends. Each step of defining and implementing this concept has in itself a feature of the strategic one (Malinic, 2010, pp. 58):

- Development and adoption of strategies for maximizing the value of company,
- Translating the adopted strategies into appropriate goals, i.e., their concretization,
- Developing action plans and budgets,
- Forming, selecting a system of performance measurement and rewarding employees.

A necessary condition for the implementation of VBM concept is the strategic and organizational setting of quality information and control system, primarily financially, as a management and decision-making base. Such system enables the application of modern performance measurement techniques in the function of increasing quality of decision-making and business performances of the company.

The most important problems highlighted in the marketing organizing stage are selection and adjustment of standards, benchmarking in the function of marketing control, as well as the existence of different interests of stakeholders that have implications on the definition and implementation of the control process. Planning indicators can be effectively used to measure business success in situations when market conditions are relatively stable. However, business

conditions are susceptible to turbulence and changes in all business spheres, and therefore, the planning elements should be treated as a directing and coordinating factor of the company's operations towards the goal. In order to properly define business standards, it is necessary to systematically and thoroughly analyze and evaluate what can really be achieved, given the environmental conditions and the resources of the company. Marketers need to know the business opportunities, now, yesterday and in the future, by changing and adapting standards, according to the changing and continuously improving feature of marketing concept. Only realistic standards, in the form of set goals, force the company to be turned towards the future business success. One thing is certain, generally applicable indicators do not exist, hence only the right combination of flexible indicators can motivate company to do more and better. In company's business the best available procedures should be used, with the idea that it never operates well enough and that improvements are always possible and feasible.

The company is a network of interests of different stakeholders. All of them, from employees, through shareholders, suppliers, customers, business associations etc., acting in and outside of business entity, have interest to end the accounting period with a positive result, making this as continuous and progressive practice. Therefore, it is in company's best interest to do business rationally, so the need for controlling activities and making control results accessible and clear is imposed. Although interests are often seemingly opposed, the goals are and must be unique. Some stakeholders will prefer external control and auditing mechanisms, while employees will pay more attention to self-control instruments and internally organized control mechanisms. How to find the right measure, to reconcile different demands, guided by the same or similar interests, is the task of marketing analysts. The evaluation of individual stakeholders is viewed in interaction with the character of the environment in which it is located. An uncertain environment and changing conditions, require the establishment of a more quality and more meaningful relationship with stakeholders, their continuous monitoring, and an increase in the quality of these relationships.

INFORMATION LEVELS VS MANAGEMENT LEVELS VS CONTROL SYSTEM

Practically, the management process is achieved by successive business decision-making and control over the implementation of decisions. In this regard, it is necessary to emphasize that the business decision is determined by the intention or goal that is to be achieved, available information and thinking, i.e. an assessment of the current state of development and future business. Decision-making is the answer of manager to the problems that faces, and the level of management success is mostly viewed through the quality of the decisions that management brings.

It follows that the management process can not be imagined without information. However, when it comes to decision-making, it is commonly emphasized that the decision-making process can take place in two ways:

- an irrational process, whereby decisions are made on the basis of intuition, experience or feeling,
- a rational process, whereby decisions are made on the basis of exact facts, knowledge and information background.

Under conditions where the market does not forgive management errors and any possible wrong decision has its "price" that company must pay, it is clear that management should be a rational process, meaning that decisions should be made based on accurate and quality information base. In modern economic conditions, which are described as chaos or turbulence, when the changes are very numerous and very common, it is clear that intuition has a very important place in the management process. However, through objective information, in particular through accounting information, it is necessary to define the fields of company operation within which intuition is desirable and possible. In managing business, many management considerations are dominantly financial and based on accounting records. Significant restrictions on the company development may arise from inadequate business thinking based on financial statements.

It can be said that the lack of financial knowledge and financial thinking can lead to negative consequences that jeopardize the continuity of the company's business and its survival on the market. Modern entrepreneurship presupposes the professional conduct of financial affairs. If the company does not fit in its environment in a satisfactory way then it is a question of the bad business of the company and its failure. Since the company operates under the complex conditions of the market environment, its development and survival are not assured in advance to it or any other company. This is why it is said that one of the fundamental characteristics of each market-oriented company is to take risk of doing its business. In today's global business environment, all information, including accounting, are very important and specific resource. This specificity is reflected by the fact they not run out by usage (as opposed to material resources), meaning they will be usable in the following period if, in the meantime, their obsolescence do not occurred.

CONCLUSION

Control is checking both execution, and plans in general, or planning tasks. This establishes an inextricable link between planning and control as a marketing management tool. Regardless of the management level, the assumption of rational management is information. Knowing that the company's fundamental goal is balanced growth that can be limited to business safety, which is, first of all, a financial constraint and determined by the structure of financial statements, then it is quite certain that management can not be

imagined without information based on the financial statements which are processed by company's accounting.

It is quite clear that in this context, the objectivity and the reality of the financial statements are implied, i.e. it is required that financial statements be a credible picture of the actual operations of the company. It is usually considered that the financial statements are the basis for lower management levels and for shorter periods of time. However, it is important to emphasize that strategic management, as an important source of information, uses financial statements (accounting information). In the case of strategic management, it is about general information and assumes a great scope. Conversely, tactical and operational management requires more frequent information for shorter periods and smaller scope. Therefore, all three levels of management are using accounting information, but a different level of generality is assumed for each levels of management.

By doing this, benchmarking becomes one of the instruments on which learning organization is being built. Learning is the only way and the path of continuous adjustment and advancement, which is the goal of controlling, and which clarifies the role of benchmarking as a control instrument. Benchmarking is an instrument for acquiring knowledge, but it should not be seen as an all-powerful tool for solving business problems.

Given that the users of the financial analysis are stakeholders, the specific objectives of the financial statement analysis are related to meeting the information needs of stakeholders. When talking about stakeholders, the most important are equity investors and creditors (bond investors, banks), that is, those who provide capital to the company and as such allow the company to grow and develop on sound financial bases.

Building a unified marketing information system is a prerequisite for successful management business system, with the appropriate system of control or audit. The existence of a unique database, which will be filled with information of different content, from all parts of the company, provides opportunities for defining reports of different structure and timeline. Information from the environment must be collected and processed in a systematic way, using computer support and processing. A mix of external and internal information provides an insight into the overall business and the implementation of operational and strategic control of marketing management.

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PRICING. CRITICAL ASPECTS IN ADAPTING THE PRICE

Carmine D'Arconte¹⁷

ABSTRACT

All for-profit organizations are tasked with the arduous responsibility not only to try and set the right price of their products or services, but also to adapt it promptly in the best way according to particular situations and market changes. Every mistake in adapting the price, no matter how small, may result in very heavy consequences as far as final economic results are concerned, because it will inevitably affect the volume of sales as well as revenues and profit.

We examine first of all part of the existing literature on price adaptation, so to analyse the most important contributions and we also illustrate the results of a research we carried out to highlight entrepreneurs' knowledge and understanding of this fundamental topic.

We then propose our contribution to better highlight the effect of price adaptation, specifying the possible impact on three critical aspects, namely, quantities of sales, revenues and, what is more important, profit and profitability.

We finally draw our conclusions and we propose further investigations.

Key words: Price and Pricing, Entrepreneurs' Approach, Adapting the Price

JEL Classification: M30

INTRODUCTION

In one of our previous contribution (D'Arconte, 2016) we pointed out the fundamental importance for every for-profit organization to set the right price and we also strived to demonstrate how price should never be considered as an element alone but always in strict relation with the company's strategy and the other three elements of the marketing mix, namely product, promotion and place or distribution.

We also showed the vital necessity that all companies, when setting the price, should have very clear their objectives and be perfectly aware how

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attaining them is inevitably related to the volume of sales, that, on the other hand, will strictly depend on the price they will decide to make.

We also indicated in another paper (D'Arconte 2016) an elementary, though very effective model, to have at least a rough indication regarding the optimum price and the optimum volume of sales.

Unfortunately the problem does not end here, because also assuming that a company was good or lucky enough to hit on the “right” or “optimum” price, nothing is forever especially in the present unsteady and turbulent socio-economic system where situations tend continuously to change. Solutions that once were the best, may be no more effective nowadays; we may have a change in the customers’ wants, the entrance of new competitors with similar or better products, a new tax or regulation that has an impact on our product and so on, and this obviously will inevitably involve a price adaptation, namely either to reduce or to increase it.

If companies do not promptly adapt the price every time it’s necessary, in practice, they will sell their goods to the wrong price and this will inevitably have a negative impact on sales, revenues and profit.

In this paper we focus on the critical aspects related to the two basic manoeuvres in pricing, namely price cut and price increase, trying to analyse and evaluate the most recurrent beliefs among entrepreneurs regarding this fundamental topic, too.

We will now first examine other authors’ theoretical contributions and then illustrate our research on entrepreneurs’ competences, especially in relation to price and pricing. Furthermore, we will provide our contribution that, as we mentioned in the abstract, will focus on the impact of price adaptation on sales, revenues and profit.

THEORETICAL REVIEW

In spite of its fundamental importance, it appears that pricing does not receive enough attention from scholars and the situation with adapting the price seems to be even worse because not only this aspect is rather disregarded and most texts do not provide the necessary indications but, sometimes, we can find some inaccurate information, too.

Kerin (2016) for instance, limits himself to say that a company “*may need to make a variety of special adjustments to the list or quoted price*” and then simply lists three special adjustments such as discounts, allowances and geographical adjustments, and does not even mention price increase. Apart from this, it is the case to remark that discounts, allowances and geographical adjustments should be considered separately, because the first two are really price cuts while geographical adjustments is something else and should be considered as a kind of price discrimination.

Crocco (2006), mentions both price increase and price cut and tries to summarize, in no more than in 10 lines, the possible consequences companies may have; Mattiacci (2018) after a good analysis on price and elasticity of the demand, limits himself to list different situations – not at all homogeneous – when the price should be adapted. Grandinetti (2008) only indicates how to set the price of a new product and only mentions the necessity, for a company operating in different markets, of a geographical differentiation of prices. Blythe (2010) simply does not mention the problem while Wiener (1992) and Pride (2004) dedicate a few line to discounts and price discrimination. Fiocca (2005), adds a contribution – especially in case of price increase – and states that in dynamic and concentrated markets – as we generally have to day – adapting the price may be successful only taking into due consideration the level of differentiation of the product, which is fundamentally correct though we believe that differentiation plays its most important role in case of setting the initial price rather than in adapting it.

Kotler (1997) gives a good contribution as he does not limit himself to analyse how to set the price but also when and how to adapt it considering separately price reduction and price increase, listing the possible alternatives companies may have, the possible reactions of the market, namely customers and competitors, and finally providing good advises how to do it in the best way; nevertheless, he doesn't go any further. One of the best contribution comes from Lambin (2004); the author focuses on elasticity of the demand to the price and warns about the possible serious loss a company may have especially making discounts but also price increases; he also reports formulas that allow calculate the variation in the volume of sales necessary to have the same profit than before price adaptation. Anyway, even this author, does not seem to fully appreciate the key role of elasticity in adapting the price and, secondly, he does not focus on the serious possible problems related to price reduction as well as on the possible benefits of price increase.

RESEARCH ON ENTREPRENEURS' APPROACH TO PRICING

We carried out a research on entrepreneurial competences and managerial skills on the basis of a questionnaire with 44 questions, out which 4 regarded price and pricing in general and 3 price adaptation. The questionnaires were distributed to approximately 100 entrepreneurs, around 70 % in Italy, 25% in Bulgaria and the remaining in other countries mainly in China. In many cases after filling up the questionnaire, they participated in an interactive discussion.

With a few exceptions, these entrepreneurs are owners of individual or extremely small companies with no more than two or three employees altogether.

We also extended the research with the same questionnaire to more than 180 students of Economics or Business Administration in four different

countries, approximately 70 in Italy, 60 in Bulgaria, 30 in Serbia and 20 in Malta.

The results show how entrepreneurs seem to have many difficulties with pricing, especially as they generally only refer to costs when fixing prices, and often make serious mistakes when adding mark-ups to prices, too. Besides this, they do not seem to understand the key value of elasticity in price adaptation, nor do they know how to calculate the break-even quantity, or how profits may change with different sales volumes.

On top of everything else, they normally lack advanced accountancy systems to help properly analyse the effective costs and revenues of their products and services, meaning that in practice, they are unable to *ex post facto* check to what extent their prices were correct.

The extreme limitations of enterprises where the owner does nearly everything alone, without being able to rely on specialized competences, the shortage of capitals and the limited technology make it understandable that problems may occur and impede seriously business in these extremely small companies that in Italy represent from 80 to 90% of the total number of companies.

Finally, the analysis of students' responses to the questionnaire, though faring slightly better than that of entrepreneurs, also displayed disappointing results, which – if confirmed by further investigations – might be considered a worrying omen of a possible gap between the Educational System and the necessities of entrepreneurial market.

PRICE ADAPTATION

We will here focus in-depth only on the two basic price adaptations, namely reduction and price increase while, out of simplicity, we will not consider price discrimination; this according to Kotler (2002), “occurs when a company sells a product or a service at two or more prices that do not reflect a proportional difference in costs” and in some cases it’s considered illegal; we cannot go here into that but it’s important to have clear that rather than being a reactive response *ex post*, as it normally happens with standard price adaptation, price discrimination is in most cases a proactive, and sometimes rather sophisticated strategy, planned *ex ante* to capitalize on the differences in needs and expectations, as well as in customers’ willingness to pay.

Going now to price reduction and increase, we will first remember the general law of demand and the key role of elasticity of the demand to the price, and then we will consider these two basic ways to adapt the price, illustrating its impact on three critical aspects, namely on quantity of sales, revenues and gross profit.

THE GENERAL LAW OF DEMAND AND THE KEY ROLE OF ELASTICITY OF THE DEMAND TO THE PRICE

It is widely known and accepted that—with a few exceptions such as Giffen and Veblen goods which will not be discussed here—the general law of demand states that with everything else being equal, as the price of a product increases, the quantity demanded falls and, likewise, as the price of a product decreases, the quantity demanded increases; in simple terms, the law of demand describes an inverse or negative relationship between price and quantity of demand.

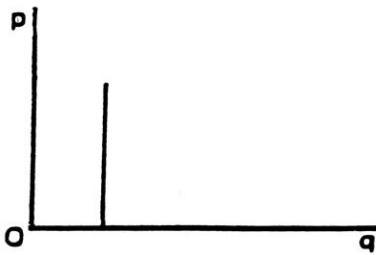
Anyway, the change in sales—as a consequence of the *same* price variation—may vary significantly according to different situations and economists worked out an indicator in order to measure this phenomenon, namely elasticity of the demand to the price (PED or Ed); this shows the responsiveness, or elasticity, of the quantity of a good or service demanded with a change in its price. More precisely, elasticity is the ratio between the percentage change in the quantity demanded and the percentage change in price (assuming no change in all the other determinants of demand, such as income, competitors' reactions, etc.). It can be calculated with the following formula:

$$\varepsilon = - (\Delta q_1/q_1) / (\Delta p_1/p_1)$$

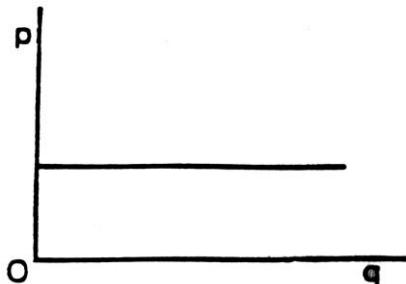
The above formula normally yields a negative value, due to the inverse nature of the relationship between price and quantity demanded as we already said.

Elasticity may have in theory infinite values in-between two extreme limits; in fact ε may be 0—or in a more realistic way very near to 0—and we say that it is absolutely rigid or inelastic as indicated in the Picture 1, or may be ∞ , infinite—or to put it better—extremely elastic as it is indicated in the Picture 2.

In the first case whatever change we have in price there will be no change in the demand while in the second whatever quantity is demanded the price will always be the same. In-between 0 and ∞ , we find more realistic values and therefore, in nearly all cases, the demand will be a decreasing curve as indicated in the Picture 3; obviously we may have different inclinations of this curve according to the value of elasticity and the higher the inclination the more rigid the demand will be while, conversely, a lower inclination will correspond to a more elastic demand.



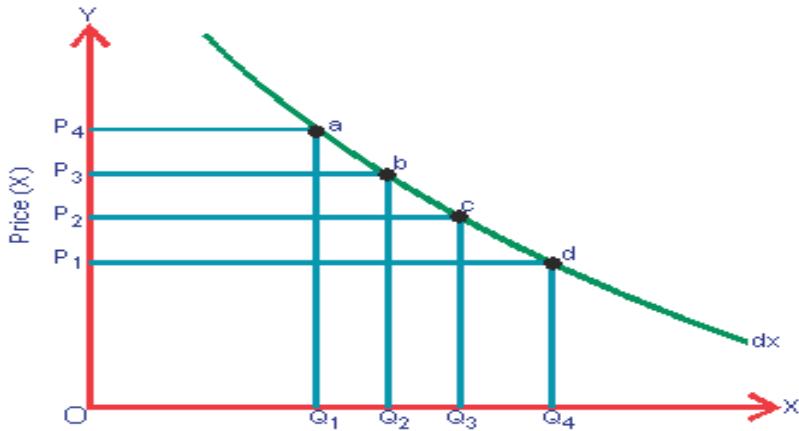
Picture 1. Illustration of an extremely rigid demand to the price



Picture 2. Illustration of an extremely elastic demand to the price

If we now refer to sales, what is fundamental to know when evaluating the impact of a price change, is that we may have three basic different possible scenarios:

- sales change in a proportional way to the price reduction (+10% in sales in case of a 10% discount in price); in this case, elasticity is equal to 1 and we say that the demand is *unit elastic*
- sales change in a less than proportional way to the price reduction (+7% in sales in case of a 10% discount in price); in this case, elasticity is < 1 and the demand is *inelastic or rigid*
- Sales change in a more than proportional way to the price reduction (+15% in sales in case of a 10% discount in price); in this case, elasticity is > 1 and the demand is *elastic*.



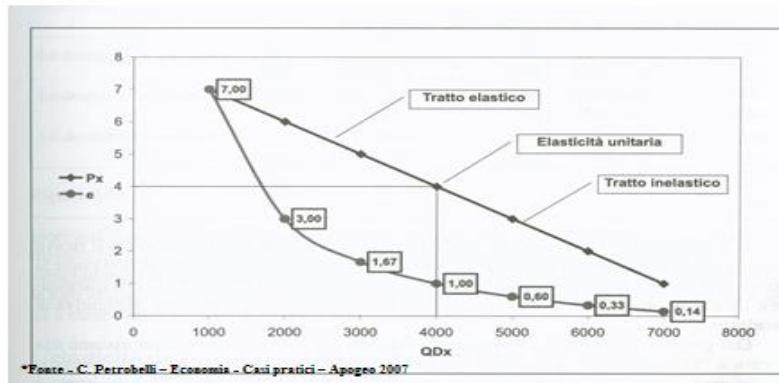
Picture 3 An illustration of the law of demand: the lower the price, the higher the demand (and vice versa)

Another fundamental aspect is that elasticity of demand with respect to price normally *is not a fixed value* but it changes according to each price level and generally it is:

- very elastic when the price is high and tends to increase considerably even more if we continue to increase the price;
- inelastic or rigid when the price is low and tends to be increasingly inelastic if we continue to reduce it.

This is summarized in the Picture 4 and, unfortunately, it means that while it can make sense to investigate and state that in a particular market elasticity—as an average—shows a certain value, the results a company may obtain with price adaptation will depend not only on this general average but also—and we could say especially—on the initial price the company made before the adaptation.

Elasticity and linear demand function



Picture 4. An illustration of how elasticity changes according to the level of price in case the demand function is a decreasing line.

PRICE REDUCTION

WHY COMPANIES REDUCE THEIR PRICES AND WHAT ADVANTAGES THEY EXPECT TO HAVE

Philip Kotler (1997) points out that they do this for three fundamental reasons:

- Excess plant capacity, when the firm needs additional business and cannot generate it through increased sales effort, product improvement, or other measures
- Declining market share due to competition
- Drive to dominate the market through lower costs

We can sum up these three points by saying that when companies cut their prices, they intend to increase their sales and market share and this could generally bring about positive results, especially in cases where the demand is rather elastic but they should very carefully consider some other fundamental aspects which we will now discuss in detail. In fact a different story may be if they wish to increase their revenues because, as we will see, this is possible only under certain conditions.

We have to add that many companies also expect to earn a better profit on the basis of an *apparently* elementary principle: with a price cut, they will earn a bit less for every item sold but they will earn more, on the whole, because of the

increase in sales. Nevertheless, it will become clear how this may be problematic and, in many cases, even impossible.

WHAT IMPACT THERE MAY BE ON SALES VOLUME, REVENUES, PROFIT AND PROFITABILITY

Let's consider these three aspects separately:

a) Quantities of sales

For all that we already said regarding the general law of demand, we can assume that unless rather theoretical situation of extreme rigidity of the demand, a price reduction will always lead to an increase of sales; anyway, it must be clear that *with the same price reduction*, we may have absolutely different results according to the value of elasticity; in fact - in case of price reduction - the higher the value of elasticity, the better the result will be; for instance with a 10% price reduction we may have an increase of 3%, in case elasticity is 0,3, and of 30% if the value of elasticity is 3, as we can see in the following chart that also shows the results for intermediate values of elasticity.

Table 1: The effect of elasticity on sales in case of a price reduction

P (reduction)	ϵ	Sales increase
-10%	0,3	+3%
-10%	0,7	+7%
-10%	1	+10%
-10%	1,5	+15%
-10%	2	+20%
-10%	2,5	+25%
-10%	3	+30%

Therefore managers who wish to increase the sales, should always have at least a rough idea of what elasticity may be, before making their decisions rather than taking their chances without any preliminary analysis.

b) Revenues

What happens to revenues once a company makes a price reduction? Based on everything said so far, the logical consequence would be for revenues to increase only when the demand is elastic with $\varepsilon > 1$. Revenues, in fact, are obtained by multiplying the price by the quantity ($P \times Q$)—therefore, just as an example, if 120,000 units are sold at €100, then revenues would be €12,000,000 and if we now look at the following table, we can easily see that the only possibility to have an increase of revenues is when $\varepsilon > 1$.

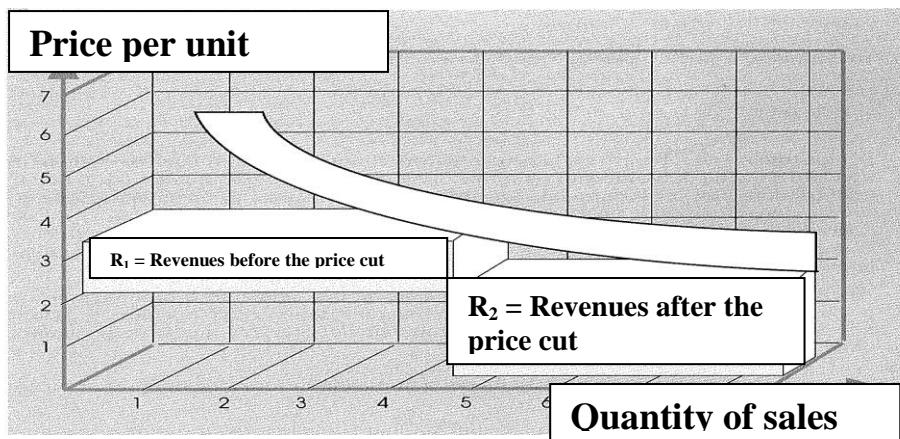
Table 2: The effect of elasticity on revenues in case of price reduction

			Price	Quantity	Revenues
Initial situation			100	120,000	12,000,000
Elasticity Δp	Δq				
$\varepsilon = 1$	p -10%	Q +10%	90	132,000	11,880,000
$\varepsilon > 1$	p -10%	Q + 8%	90	129,600	11,664,000
$\varepsilon < 1$	p -10%	Q + 12%	90	134,400	12,096,000

As we can see, it's only a matter of applying an elementary mathematical procedure, actually a simple multiplication of which, as strange as it might sound, we didn't find any mention at least in the literature we were able to refer to.

This elementary but fundamental mechanism is illustrated in Picture 5, where we can see the representation of the effect made by a price reduction when elasticity is >1 ; on the left, there is a parallelepiped that represents the revenues before the price reduction, while the second shape on the right corresponds to the revenues obtained thanks to the price reduction. Obviously, to have more revenues than before, the second parallelepiped must be bigger than the first one, namely $R_2 > R_1$, and this is possible only when the demand is elastic ($\varepsilon > 1$).

It's more than evident, therefore, how companies should gauge their experience, along with the specific sector and the particular situation of their products on the relevant markets, to picture out what kind of elasticity to the price could be expected for any price variation, in order to make some reasonable hypothesis about the opportunity and usefulness of granting a price discount.



Picture 5 The impact on revenues by a price reduction when elasticity is >1.
Adapted from Bernardi, S. 2001. Marketing. De Vecchi Editore.

All this allows us to arrive at the next important question: “Can we conclude that when elasticity is >1 , companies that make a price reduction will always have more profit, as well as more revenues?” The answer is “No, by no means, no!” In fact, $e > 1$ is only a *favourable* condition, but not at all a *sufficient* one, and companies, unfortunately, chase revenues and extra sales too often, unaware that in many cases they are simply investing more money for less profit. In fact, revenues alone—as far as profit is concerned—do not mean anything at all, because companies must also very carefully consider the relevant costs.

c) Profit and profitability

Let's go back to our example of a company selling 120,000 units for €100 each, variable cost €70 and fixed costs for 50,000, then deciding to make a price cut of 10%; table 3 shows how the impact on sales, revenues and profit may vary significantly in relation to the different values of elasticity.

Elasticity	Price var.	Price	Quantity variation	Quantity	Revenues x1000	Fc x1000	VC	VCT x1000	Ct x1000	Profit x 1000
ϵ	-10	100		120,000	€ 12,000	€ 50	70	€ 8,400	€ 8,450	€ 3,550
0.7	-0.1	90	8400	128,400	€ 11,556	€ 50	70	€ 8,988	€ 9,038	€ 2,518
0.9	-0.1	90	10,800	130,800	€ 11,772	€ 50	70	€ 9,156	€ 9,206	€ 2,566
1	-0.1	90	12,000	132,000	€ 11,880	€ 50	70	€ 9,240	€ 9,290	€ 2,590

1.2	-0.1	90	14,400	134,400	€ 12,096	€ 50	70	€ 9,408	€ 9,458	€ 2,638
1.66	-0.1	90	19,920	139,920	€ 12,593	€ 50	70	€ 9,794	€ 9,844	€ 2,748
1.8	-0.1	90	21,600	141,600	€ 12,744	€ 50	70	€ 9,912	€ 9,962	€ 2,782
2	-0.1	90	24,000	144,000	€ 12,960	€ 50	70	€ 10,080	€ 10,130	€ 2,830
2.2	-0.1	90	26,400	146,400	€ 13,176	€ 50	70	€ 10,248	€ 10,298	€ 2,878
2.5	-0.1	90	30,000	150,000	€ 13,500	€ 50	70	€ 10,500	€ 10,550	€ 2,950
3	-0.1	90	36,000	156,000	€ 14,040	€ 50	70	€ 10,920	€ 10,970	€ 3,070
3.5	-0.1	90	42,000	162,000	€ 14,580	€ 50	70	€ 11,340	€ 11,390	€ 3,190
4	-0.1	90	48,000	168,000	€ 15,120	€ 50	70	€ 11,760	€ 11,810	€ 3,310
4.5	-0.1	90	54,000	174,000	€ 15,660	€ 50	70	€ 12,180	€ 12,230	€ 3,430
5	-0.1	90	60,000	180,000	€ 16,200	€ 50	70	€ 12,600	€ 12,650	€ 3,550

Table 3: The effect of elasticity on profit with a constant price reduction of 10%

Looking at the table but also remembering the previous explanation regarding elasticity, it should be clear that we have to exclude two of the elasticity conditions ($\epsilon = 1$ and < 1) because we would absolutely have lower profits (revenues would be lower and variable costs higher); that leaves us with only one favourable condition (when elasticity is > 1).

Even in this case, we still have to be very careful because while we can expect more revenues, it's not at all certain that we will have more profit. It will help to refer to the Table 3 where we can see how the same 10% price cut could affect the quantity of sales, revenues, and especially profit, quite differently depending on the value of elasticity.

Let's now consider the case that after a price cut of 10% we have a sale increase of 20,000, namely 16,66% more than before, therefore with an elasticity of 1,66 ($0,1666/0,10$); what results the company would have? We can refer again to table 3 where we can see that:

- Elasticity higher than 1 means more revenues, but does not necessarily mean more profit; on the contrary, as the table demonstrates, after a price cut of 10% and an elasticity of 1.66, *this results in higher sales and revenues but also in a profit loss*. We would continue to see lower profits until reaching 5, a very high value of elasticity, when we could expect sales to rise to 180,000 units.
- Anyway it's worth noting that with 180,000 units sold, the company would increase its sales by 50%, quite a remarkable result, but the profit

would remain exactly as its pre-price cut level. Only by selling more than 180,000 units, with elasticity being higher than 5, could more profit be gained than before (e.g., 190,000 units sold with an elasticity of 5.83 and a profit of €3,750,000, that is an extra profit of €250,000).

So, before allowing a price cut to happen, companies should first carefully consider their objectives; i.e., if the priority is an overall increase in the quantity of sales or of revenues it may be ok, but if they are looking to increase revenues and especially profit, it may be completely different.

To work out what may happen, they should first be sure that elasticity is high; then, they could calculate the amount of sales necessary to reach the same profit as before, using a simple formula (Another possibility is to use one of Monroe's formulas: $Q = X/(CM\% - X)$ in case of reduction and $Q = X/(CM\% + X)$ in case of an increase, where Q is, in percentage terms, the quantity variation that we need to have the same profit as before, X is the percentage of reduction or increase in the price, and CM% is the initial contribution margin (Busacca & Chizzoli, 2008). These formulas may be helpful, but they do not consider a fundamental aspect, the variation of capital as a result of the price change.) we expressly designed for this purpose; in fact, remembering that the contribution margin, CM, is $(P-VC)$ and that gross profit may be calculated as $OR = (CmxQ) - FC$, it will have to be:

$$(CM_1 \times Q_1) - FC = (CM_2 \times Q_2) - FC$$

We may ignore FC, as it is found on both sides of the expression and we obtain:

$$Q_2 = (CM_1 \times Q_1) / CM_2$$

Q_2 is ***the minimum quantity*** that must necessarily be sold in order for profit to remain the same as before; let's input the data from our example: $(30 \times 120,000) / 20 = 180,000$. Therefore, we need 60,000 additional sales in order to have exactly the same profit as before, as we have seen in Table 3.

We can also use the formula to calculate what quantities, Q_3 , should be sold after the price cut to get a higher profit, OR_1 , e.g., +200,000; this profit should be simply added to fixed costs as follows:

$$Q_3 = (OR_1 + CF) / CM_2$$

This calculates to 190,000 unit sales $[(3750,000 + 50,000) / 20 = 190,000]$. Now, in both cases, we can easily reckon what level of elasticity would be necessary to sell these quantities after the 10% price reduction to see whether or not this is realistic. In fact, the elasticity formula shows that 60,000 extra sales would necessitate an elasticity of $5 - (60,000 / 120,000) / (-10 / 100)$ —while

70,000 extra items sold would necessitate an elasticity of 5.833— $(70,000/120,000) / (-10/100)$ —and these values both indicate how this may prove rather difficult.

But the problem lies not only here! Up to now, we have only been considering profit as an absolute value, but what about profitability, meaning by this the return of the invested capital or ROI? In fact even if companies are so lucky to have very high values of elasticity so to have the same profit or even more profit than before, they should not overlook – as it often happens - the importance of profitability.

If we look at the table 4, the first two columns show the financial situation of the company before and after the price cut, and for sure we can say that the company certainly didn't do well, not only because profits are lower than before (€2,750,000 vs. €3,550,000, with a loss of €800,000!), but also because it was necessary to make an extra investment of €1,400,000 in order to achieve this, with the ROI failing from a 42% to approximately 28%, which is really financial nonsense.

To earn the same profits as before, the company would have to sell 60,000 additional units but this means investing another €4,200,000, which will result in a downfall of ROI. So in this case, it doesn't make sense to make a price cut if we consider profit and profitability; the company should rather maintain the present price and invest the extra capital of €4,200,000 in a more profitable way.

Table 4: The effect of a price reduction on profit and profitability

Sales		120,000	140,000	180,000	190,000
Elasticity			1.66	5	5.83
Revenues	100	1,2000,000			
(price cut 10%)	90		12,600,000	16,200,000	17,100,000
Variable cost	70	8,400,000	9,800,000	12,600,000	13,300,000
Fixed Cost		50,000	50,000	50,000	50,000
Total cost		8,450,000	9,850,000	12,650,000	13,350,000
OR		3,550,000	2,750,000	3,550,000	3,750,000
Extra Capital			1,400,000	4,200,000	4,900,000
ROI		42.01%	27.92%	28.06%	28.09%

A recurrent objection is that this model stands to reason only in cases of manufacturing businesses, not services; we have to retort firmly that this is not true at all—although the situation depicted above is more evident in manufacturing, it still is true in all cases where the production (in the broadest sense of the word) of every additional unit implies a corresponding variable cost and, the higher the variable cost, the higher will be the negative impact on ROI.

Let's consider for example a psychologist who is able to treat an average of one patient in an hour; if he works 8 hours a day, it won't be possible to treat more than 8 people; if there are 16, another psychologist will have to be engaged. So, it's not a matter of products or services, but of an increase in variable costs when sales are also increased.

The objection would, however, make sense in the case of a simple intermediary service where, for instance, X company, on behalf of customer A, takes orders via the internet from A's final customers; if company X takes a commission of $x\%$ on any product sold, and all the costs of production and delivery will be at the expenses of A, an increase in sales due to a price reduction will only increase company X's profits and profitability as well. We believe, anyway, that such situations, though possible, are indeed rather rare and that, with a few exceptions, the rule still applies in most cases.

Considering all of this—especially the impact both on profit and on profitability—it is clear that, as a general rule, **price reductions should be used with extreme care and the following points should be previously analised with the utmost attention:**

1. What is the elasticity level? If it is around 1 or, even worse, less than 1, we know that only a limited increase in sales will be possible, and proportionally less than the price reduction, while revenues and profit are sure to diminish. Therefore, in this particular case, a price reduction may still make sense but only for other reasons, e.g., strategic ones.
2. If the elasticity is higher than 1, assumptions about its possible value could be made regarding a reasonable range, from a minimum to a maximum, in order to try and evaluate *ex ante* some possible scenarios regarding the impact on quantities, revenues, and, above all, profit (see Table 4).
3. To correctly assess the impact on profit, a company starting with a certain quantity of sales, Q_1 , should calculate with the formulas we indicated, what amount of sales, Q_2 , will be necessary to reach or exceed the original profit; then they could reckon in advance what value of elasticity would be necessary for this to happen, thereby judging the validity of the hypothesis.
4. In both cases, the amount of extra capital necessary should be considered in order to make the necessary evaluation as far as ROI is concerned (see Table 4).

- Finally, apart from considering the maximum quantity that can be produced without any inevitable increase in fixed costs, the company should investigate how many products in practice might be possible to sell on the market at the reduced price.

It goes without saying that, apart from these financial considerations, companies should also consider very carefully the impact a price reduction may have on customers and on competitors. As for customers they generally react positively to price cuts but, as Kotler very wisely suggests, they should not assume that the quality is or will soon be below that of the higher-priced competitors. Considering competitors, we will mention only that they could react matching the price and obviously this may be the first step that leads to a price war, with possible devastating financial consequences.

Obviously for both aspects every particular situation should be carefully analysed before taking any decisions but we do not have here the possibility to go in-depth into that and we can only recommend that readers refer to specific literature on the topic.¹⁸

As we can see, a complex analysis should be done in every single case and for every different objective a company may have; but, quite honestly, we believe that price reduction, as a general rule, should be used for other purposes besides increasing profit and profitability.

PRICE INCREASE

WHY COMPANIES INCREASE PRICES AND WHAT ADVANTAGES THEY EXPECT TO GAIN

According to Kotler, the main reasons why companies increase the price of their products and services are:

- There is an over-demand, a demand higher than the company can supply
- The company has to recover extra expenses due to cost increases in labour, material, inflation, and so on
- The company wishes to increase its profits

Here the basic principle to which managers are referring to, is that with a price increase they will sell less but that they will earn more on every piece they sell so to have more or less the same profit than before – or even more – selling less products or services. We will go into that and, as in case of price reduction, we will examine separately the impact on sales, revenues and profit.

¹⁸ Kotler, P. (1997). Marketing Management. Upper Saddle River, NJ: Prentice Hall International, Inc., and D'Arconte, C. (2017). "Pricing." Chapter X in Donnelly, H.J., Peter, P.J. & Pratesi, C., Marketing. Milano: McGraw-Hill.

WHAT IMPACT THERE MAY BE AS FAR AS SALES, REVENUES AND PROFIT ARE CONCERNED

a) Sales

An increase in price will inevitably entail a reduction in sales and in this case, in order to limit a negative impact as much as possible, a rigid demand will be necessary, with $\epsilon < 1$; in this way, the sales reduction could end up being less in percentage than the price increase, e.g., in case of a 10% price increase with $\epsilon = 0.5$ and an initial quantity of 120,000, Δq would be 6,000 ($0.5 \times 0.10 \times 120,000$) and that is only 5% less; on the contrary, if ϵ were 1.5, then Δq would be 18,000 ($1.5 \times 0.10 \times 120,000$), or 15% less.

This is summarized in table 5 that also shows results for intermediate values of elasticity:

Table 5. The effect of elasticity on sales in case of price increase

P (increase)	ϵ	Sales reduction
+10%	0,3	-3%
+10%	0,7	-7%
+10%	1	-10%
+10%	1,5	-15%
+10%	2	-20%
+10%	2,5	-25%
+10%	3	-30%

b) Revenues

As for revenues, on the contrary of price reduction, an increase can only be expected when elasticity is < 1 as it's summarized in the table 6:

Table 6. The effect of elasticity on revenues in case of price increase

			Price	Quantity	Revenues
Initial situation			100	120,000	12,000,000
Elasticity	Δp	Δq			
$\epsilon = 1$	p + 10%	Q - 10%	110	108,000	11,880,000
$\epsilon > 1$	p + 10%	Q - 12%	110	105,600	11,616,000
$\epsilon < 1$	p + 10%	Q - 8%	110	110,400	12,144,000

c) Profit and profitability

What about profit and profitability? For what we have already said we could expect to have a benefit only in case of a rigid demand; anyway if we look at the Table 7, we can see, that with a price of €100, a variable cost of €70 and fixed costs for €50,000, the profit result of the company making a 10% increase is considerably high not only with low values of elasticity but also if *elasticity is > 1 and the profit still continues to be higher than before until a limit value of 2.5*, the point where exactly the same initial gross profit (€3,550,000) is reached with 90,000 items sold.

Apart from this, it's worth noting that in contrast with a price reduction, the company selling 90,000 items with an elasticity of 2.5 not only obtains the same initial profit, but also does that with €2,100,000 less of an investment (€6,350,000 versus €8,450,000), therefore having a much higher ROI than before.

Obviously it's always advisable to carefully consider every single situation before making any change in price, but nevertheless, we can say that *there is a doubly positive effect in case of a price increase—more is earned for every item sold, with the possibility to have more profit than before and with less capital invested, too.*

In a similar way to price reduction, we can use the same formula— $Q_2 = (CM_1xQ_1)/CM_2$ —to calculate the amount of sales in order to have exactly the same profit than before; in this case Cm_2 will be $> Cm_1$ while, conversely, Q_2 will be $< Q_1$. To have the same profit than before it will require selling $Q_2 = (30x120,000)/40 = 90,000$; and, in fact, $(90,000x40) - 50,000 = 3,550,000$.

Anyway, we have to highlight how there will be two fundamental differences when compared to a price cut:

- First of all, with a price increase the above quantity will not be a goal to be attained in order to compensate for a poorer financial situation, but - quite opposite - it will be a limit not to be reached, and in no case exceeded, to avoid moving from a better financial situation after the increase in price to a worse one (in fact, if the limit value of elasticity 2.5 is exceeded, e.g., $\epsilon = 2.7$, then Δq will be - 32,400, the sales will consequently be 87,600, and total revenues will be €9,636,000, with total costs at €6,182,000 and therefore a gross profit of €3,454,000, which is lower than before).
- The second fundamental difference relates to the amount of capital to invest, and therefore the impact on ROI; in fact, with a price increase, the more sales are reduced, the lower profits will be, but the same is true of the capital that will have to be invested. Table 8 clearly demonstrates that when selling 120,000, we are investing €8,450,000, while when sales

drop to 90,000, only €6,350,000 is invested and we obtain the same profit! This can be expressed saying that in the first case the value of ROI is 42.01 % and in the second it is 55.90% but we do believe it's much more illustrative to say that in the second situation the same profit is obtained with €2,100,000 more in our pockets. All this has to be considered carefully before making any decision because companies must know very well that it is sometimes possible to considerably reduce sales without losing money, and sometimes earning even more.

Table 7. The effect of a price increase of 10% in profit at different levels of elasticity.

ϵ	Price var	Price	Quantity variation	Quantity	Revenues x1000	Fc	Vc	Vct x1000	Ct x1000	Profit x 1000
		€10	€100		120,000	€ 12,000.00	€ 50,000	€70	€ 8,400.00	€ 8,450
										€ 3,550
0.2	0.1	€110	-2400	117,600	€ 12,936.00	€ 50,000	€70	€ 8,232.00	€ 8,282	€ 4,654
0.3	0.1	€110	-3600	116,400	€ 12,804.00	€ 50,000	€70	€ 8,148.00	€ 8,198	€ 4,606
0.4	0.1	€110	-4800	115,200	€ 12,672.00	€ 50,000	€70	€ 8,064.00	€ 8,114	€ 4,558
0.5	0.1	€110	-6000	114,000	€ 12,540.00	€ 50,000	€70	€ 7,980.00	€ 8,030	€ 4,510
0.6	0.1	€110	-7200	112,800	€ 12,408.00	€ 50,000	€70	€ 7,896.00	€ 7,946	€ 4,462
0.7	0.1	€110	-8400	111,600	€ 12,276.00	€ 50,000	€70	€ 7,812.00	€ 7,862	€ 4,414
0.8	0.1	€110	-9600	110,400	€ 12,144.00	€ 50,000	€70	€ 7,728.00	€ 7,778	€ 4,366
0.9	0.1	€110	-10,800	109,200	€ 12,012.00	€ 50,000	€70	€ 7,644.00	€ 7,694	€ 4,318
1	0.1	€110	-12,000	108,000	€ 11,880.00	€ 50,000	€70	€ 7,560.00	€ 7,610	€ 4,270
1.1	0.1	€110	-13,200	106,800	€ 11,748.00	€ 50,000	€70	€ 7,476.00	€ 7,526	€ 4,222
1.3	0.1	€110	-15,600	104,400	€ 11,484.00	€ 50,000	€70	€ 7,308.00	€ 7,358	€ 4,126
1.5	0.1	€110	-18,000	102,000	€ 11,220.00	€ 50,000	€70	€ 7,140.00	€ 7,190	€ 4,030
1.6	0.1	€110	-19,200	100,800	€ 11,088.00	€ 50,000	€70	€ 7,056.00	€ 7,106	€ 3,982
1.7	0.1	€110	-20,400	99,600	€ 10,956.00	€ 50,000	€70	€ 6,972.00	€ 7,022	€ 3,934
2.5	0.1	€110	-30,000	90,000	€ 9,900.00	€ 50,000	€70	€ 6,300.00	€ 6,350	€ 3,550

To sum up, before making a price increase, companies should carefully consider the following points:

1. What is the elasticity level? Less than 1 is a favourable condition to start with and this is also the only case when revenues may be higher than before.
2. Profits will generally increase, especially if elasticity is rigid, but, as we have seen, it may also increase at values of ϵ greater than 1.
3. With a reduction in sales, profits will be higher than before until a limit value of sales, where the same profit as before can be had; this quantity may be calculated using the formula $Q_2 = (Cm_1 \times Q_1) / Cm_2$ with $Cm_2 > Cm_1$ and $Q_2 < Q_1$.
4. In contrast to cases of price reduction, price increases will have a considerably positive effect on ROI, due to savings of invested capital, and this should be taken into due consideration.

It goes without saying that, apart from these mere financial considerations, companies should also take carefully into account the impact a price increase may have on customers, especially in relation to the company's image. As Kotler (1992) very well suggests "*The company needs to avoid the image of a price gouger*" and "*A sense of fairness must surround a price increase*".

Another main point to be considered is the competitors' reaction; will they match the new price or not? Obviously for both aspects every particular situation should be carefully analysed before taking any decision, but we do not have the possibility here to go in-depth into that.

We could conclude that price increases may be very useful to companies, as far as the impact on profit and profitability is concerned, providing that certain conditions are met and customer relationships are well looked after.

CONCLUSIONS AND FUTURE OUTLOOK

CONCLUSIONS

We sincerely believe that we gave a contribution to shed more light on such a complicated issue such as adapting the price and we would like to summarize the most important points.

The first fundamental aspect is that companies should have very clear their objectives, namely whether they want to impact on sales, on revenues or on profit, because it may be impossible to improve the three of them simultaneously.

Then they should understand the key role of elasticity of the demand to the price.

Price cuts, promotions, allowances and so on, unless in case of an extremely rigid demand, will always generate more sales but the belief that this will also lead in all cases to more revenues and profit may be completely wrong; it must be clear that this may be *only in case of high values of elasticity*.

Price increase, first of all, will obviously never generate extra sales and, in a similar but inverse way to price cuts, may generate more revenues *only in one case*, when the demand is rigid, namely $\epsilon < 1$; nevertheless, as for profit the situations seems to be better than price reduction because we can have extra profit also in case of unfavourable values of elasticity.

Another main point, quite often totally overlooked, is that not only profit but also profitability should be taken into due consideration.

Price cuts will lead to an increase of the production and sales and therefore to higher variable costs while, conversely, a price increase with a reduction of the quantity of products will reduce the variable costs. Therefore, when evaluating the results after a change in the price, it is deceptive to consider the impact on profit alone; in fact, this could inevitably lead to *overestimating* the result after a reduction, and *underestimating* it in case of an increase in price. In

this regard, the Monroe's formulas - as well as ours or similar ones – though useful to calculate the sales volume to have the same profit than before, may be rather deceptive because they do not consider the different amount of capital to be invested.

Another main point is that elasticity is not a fixed value but that it changes according to the level of price and this makes strongly inaccurate all praiseworthy attempts to try and indicate an average value of elasticity for different products as Hermann (2010) and Lambin (2000) have tried to do.

Elasticity is very important but at the same time extremely difficult to be calculated; it give us an exact value *ex post facto* of the impact of a price change on the sales but obviously, to be a reliable predictive value to estimate future changes, all conditions should remain exactly the same which is evidently impossible. Nevertheless, though difficult to evaluate, elasticity should not be overlooked (as often happens); companies could first of all refer to the statistics of their specific sector, and then evaluate the level of their present price in relation to other similar products available in the market. This will for sure help making reasonable hypotheses—and even better, they could carry out some research—in order to establish a value that is as near as possible to reality.

After this, having clear in mind their objectives, they could calculate what elasticity would be necessary to obtain their goals and this value should then be compared to the result of the previously mentioned research and, in this way, it would be an excellent reference point to consider before making any decision.

We are perfectly aware that doing all of this is no easy task; it seems like a conundrum, a difficult and complicated puzzle with so many different parts to put together in a certain way so that they fit well into the whole picture, but if our goal is to set the right price, there is no other way.

On the other hand, if the complexity of the exercise requires considerable effort to try and work out the best price, it is also true that valuable and lasting benefits would also follow the adoption of a more scientific approach to pricing—avoiding the rough and inaccurate methods mentioned in our research summary.

FUTURE OUTLOOKS

What can be done to improve the present situation?

We do believe, first of all, that considerable investments should be done to improve managerial competences and managerial skills; next, specific courses and training should be organized in order for entrepreneurs to gain a much better understanding of pricing problems, costs and their control. Some simple software might be designed and developed to support them in general, and similar tools could help in particular situations by evaluating different possible scenarios and predicting the relevant financial outcomes.

We should foster research to investigate more in-depth all aspects related to elasticity of the demand to the price, working out a model than can help entrepreneurs to more easily consider all the complicated aspects related to adapting the price.

Finally, we should not overlook the results of questionnaires which were distributed to around 180 business administration students mainly represented from universities in Italy and Bulgaria but also in Serbia and Malta; we are aware that the sample is small and not a probabilistic one so that it cannot be statistically representative but, nevertheless, especially if we consider that the research has been extended to four different countries, it may raise the issue of the quality of teaching at the university level as far as Business Administration is concerned.

We would suggest, therefore, that the educational system should also be more closely monitored with much more collaboration between universities and companies, so that too much concentration on theory can be avoided and much greater focus can be given to the practical aspects that are important in business.

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CREATING PROMOTIONAL STRATEGIES IN ACCORDANCE WITH CONSUMER PREFERENCES

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ABSTRACT

Communicating with the target market is one of the most complex activities undertaken by an economic operator in order to achieve the set goals. Market position is significant, but it is only a consequence of a company's position within consumer awareness. An adequate choice of communication modes opens the door to new possibilities, facilitating access to new ones, as well as strengthening links with existing consumers and society as a whole. The market is a kind of stage from which many send their message according to what they deem to be the most suitable way to attract the audience to a greater or lesser extent, thus also creating differences among themselves. Determining the relationships that consumers have with respect to the elements of the promotional mix, as well as the various forms within them, is crucial within marketing management for creating new and changing existing strategies in order to achieve the best contact with the market.

The aim of this paper is to point out the preferences of consumers on certain forms of promotional strategies in the territory of the city of Čačak, mostly from the aspect of the frequency of their use and application of modern information and communication technologies, which is a good basis for adapting the communication mix to the characteristics of the target market by marketing managers.

Key words: marketing, marketing management, consumer behavior, promotional (communication) mix

JEL Classification: M30, M31

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INTRODUCTION

Consumers are the foundation of all marketer activities, but at the same time also their end, the ultimate goal and the attainment of the aim. Their judgment cannot be avoided, as it is finite. In fact, it is the real indicator of the success of a single marketer's market performance, as consumers are never wrong, they are always right. For this reason, looking at the characteristics of the target market is one of the unavoidable steps of creating appropriate marketing, and within it a promotional strategy. A successful marketer must know the beat of the lives and work of the consumers, their desires, their way of thinking, and above all, they must have a sense for consumers. What is also important is that one needs to recognize what they fail to say, see their needs, those hidden but also the future ones, as well as anticipate their reaction to the planned activities.

The company-marketer should respect himself, which is achieved by respecting his consumers. The relationship they create with them is not only the affiliation with the most important part of the market, but also the relationship with which a company builds itself and its future. It presents the company's attitude towards itself and its long-term survival on the market, often characterized by ruthless competing struggles.

The promotion based on sending messages to target customers and the feedback received constitutes the basis of the natural way of communicating in the economy. Reactions will not always be good, but creating a positive attitude towards them is the key to long-term success. This is a way to learn the lesson that each marketer learns the hard way. "Your most unhappy customers are your greatest source of learning" (Bill Gates). Buyers are part of the solution, not part of the problem, and that's the only truth. The problem never lies with the customers, but in an ineffective attitude towards them.

One moment can completely change the market situation. One well-designed promotional activity sometimes launches the company and its products among the stars, among the inconceivable heights of consumer awareness, but it can also be enough to destroy a reputation that has been built for years, and the decline can be more than painful. Therefore, it is important for marketers to understand the following: "The customer's perception is your reality" (Kate Zabriskie), and "A satisfied customer is the best business strategy of all" (Michael Lebouef).

In accordance with the above, the subject of this paper is to determine the relationship of consumers in the territory of the city of Čačak (Morava Administrative District, Republic of Serbia) according to the use of certain forms of promotional strategies (advertising, sales promotion, events and experiences, and direct marketing). The aim of the paper is to claim specific forms within the promotional mix instruments (advertising, sales promotion, events and experiences, and direct marketing) that consumers prefer to use. The

hypothesis of this paper is that sales promotion is a specific form of promotion (within the instruments of the promotional mix) which has the greatest impact on the consumer.

REVIEW OF LITERATURE

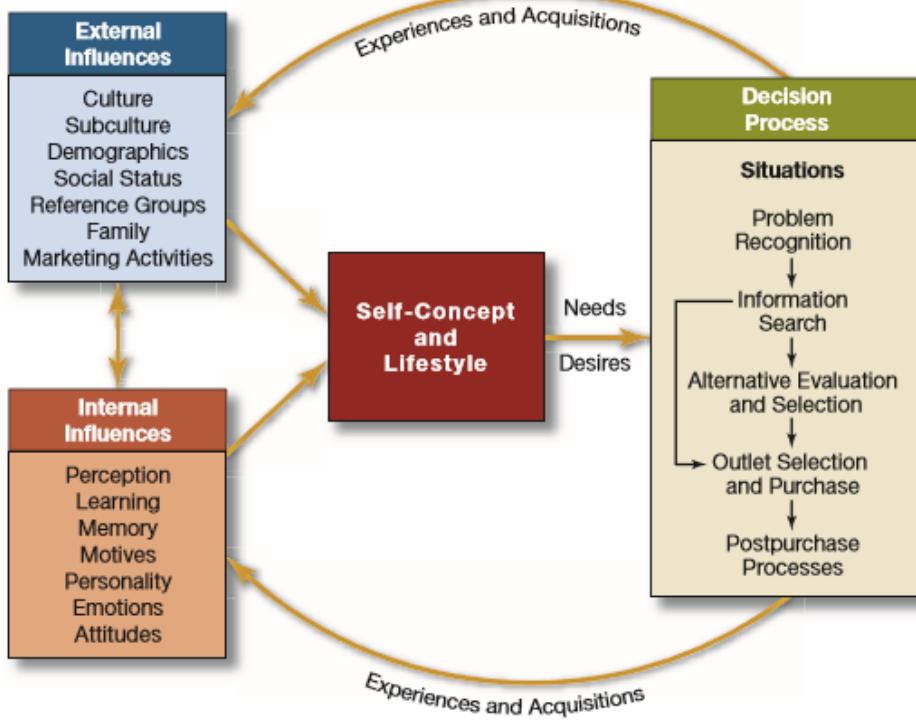
The key factor for the success of a marketer is a good knowledge of the features of the target customers who want to place the created offer. The reactions to the sent message and the manner of promotion, as well as the other elements of the marketing mix, depend on many factors, some of which may be affected to a larger or a smaller extent, and some not at all. They determine consumer activities in three basic periods related to the relationship between the marketer and the buyer, which are the following:

- Period prior to purchase,
- Purchase ,
- Period following purchase.

Based on this, it can be concluded that transactional marketing that has long been dominant in today's operating conditions represents an outdated approach to marketing activities, which is increasingly based on creating and maintaining long-term relationships with customers. As an integral part of marketing relations, marketing relations with customers/consumers within the framework of a stakeholder can be distinguished.

Consumer behavior is a “marketing context, observation of decision-making, purchasing patterns and habits of the general public. Behavior science is increasingly used in the marketing service, in the sense that consumer behavior can be analyzed and predicted. Group consumer behavior can be more easily predicted than individual behavior” (Yadin, 2002, p. 86).

Hawkins and Mothersbaugh, (2010, p. 27) observe consumer behavior through the cyclical action of internal (perception, learning, memory, motives, personality, emotions, attitudes) and external factors (culture, subculture, demographics, social status, reference groups, family, marketing activities) and their impact on the purchasing decision-making process. At the heart of everything is self-concept and lifestyle. The general model of consumer behavior is shown in Picture 1.



Picture 1. Overall Model of Consumer Behavior

Source: Hawkins, Mothersbaugh, D. L., 2010, p. 27.

In line with the above factors, the marketer must adjust his activities to influence the behavior of consumers, and it is especially important to note that marketing activities are classified as one of the basic (external) factors of action in the decision-making process of the buyer, thereby further emphasizing their significance. They can also strive for changes in individual factors in which this can be achieved in order, from the point of view of the company, to create more favorable conditions for later promotional activities. From this, the following key facts can be drawn:

- Marketing activities impact consumer behavior, and
- Consumer behavior impacts creating marketing activities.

Established marketing relationships need to be managed in order to make their potential more useful in the long run. Thus, in the context of marketing management, and in relation to marketing of customer/consumer relations, a new form of management known as Customer/Consumer Relationship Management (CRM) has emerged. According to Kamrul Islam Shaon and Rahman, (2015, pp. 23-36, pp. 25-26) the objectives of CRM are presented as

follows: (1) To Improve the Communication Process with Customers, (2) To Identify the Key Elements of CRM, and (3) To Identify the Factors Related to CRM Effectiveness. The key factors that affect CRM are the following:

- Reliability,
- Customization,
- Customer Attraction,
- Customer Retention,
- Information Technology (IT),
- Responsiveness,
- Customer Orientation,
- Commitment (Kamrul Islam Shaon, Rahman, 2015, pp. 23-36, pp. 28-29).

As prerequisites for the development of CRM on the Internet (Lovreta et al., 2010, pp. 374-382), the following are mentioned: (1) proliferation of technology spread, (2) areas of application, (3) new IT solutions and concepts (ENABLERS), and (4) applications for CRM.

“Essentially, CRM is the deployment of a variety of related marketing tools, techniques and activities. It is dedicated to the identification of named individual consumers; to creating a commercial relationship with them; managing the relationship for their mutual benefit and company profitability over a long period” (Yadin, 2002, p. 107). Consumers are the wealth of a company, and it is necessary to treasure wealth, because only in this way will its value be sustained and increase with time.

In the activities of acquiring buyers, it is necessary to highlight the following factors:

- An adequate market presentation
 - excellent knowledge of the market and monitoring market needs
 - monitoring competition
 - marketing function
- Financial operability
 - supply and optimal utilization of financial resources
 - sales, etc.
- Company efficiency
 - staff quality
 - marketing style
 - ability to improve business processes (Vasković, 2008, p. 239)

As one of the most important functions in modern business which can be seen among the aforementioned factors for the struggle for customers, marketing must be managed. This sets the basis for allocating marketing management as a part of general management, which can be considered a “decision-making process that encompasses the planning, implementation and

control of a set of strategic and operational marketing activities that help companies achieve their goals" (Milenković, 2003, p. 144). A marketing manager has a key role in marketing management as the "manager responsible for planning, coordinating and controlling all marketing activities in the company," and "depending on the size of the company and the importance attached to marketing the concept of business depends on the hierarchical level and the profession it has in the organization" (group of authors, 2006, p. 397). "Successful managers are not needed only in enterprises, they are also a support for a first-rate functioning of a whole society" (Garabinović, 2017, p. 314).

Observing the marketing mix from the traditional aspect of 4P or 4C, the scope of the activities of marketing managers can be subdivided into activities related to the product (consumer), cost (expenditure), distribution (convenience), and finally promotion (communication), which will be subject to analysis in the continuation of this paper.

ADVERTISING - ACCESS TO THE MASS MARKET

Advertising is an example of a promotion that is intended for a large number of people. The volume that characterizes it has a bad as well as a good side. Advertising is best classified into print, electronic and digital.

Among the printed forms of advertising, there is special focus on newspapers and magazines, while not neglecting the role that other printed forms can have in printed promotions - brochures, flyers, yellow pages, etc.

Newspapers primarily emphasize their publication frequency (daily) and the content that can be divided into four main groups according to (Barnes, 1964, p. 391): news (news), opinions (comments), information and entertainment. According to the same author, the local character of the newspaper is an important factor (Barnes, 1964, p. 394). Advertising in newspapers has two main forms: one is the so-called classified or rubricated ads (typical examples are serial small ads), and others are advertising processed ads with prominent elements of the title, illustration, point, etc. (display advertising) (Barnes, 1964, p. 400). (Barnes, pp. 401-403) on the basis of the merger of general and automotive news propaganda under the common term "national newspaper propaganda" considers newspaper advertising divided into three groups: (1) retail (detail, local), (2) national, and (3) rubricated. The advantages of advertising in newspapers derive from the four essential features of the newspaper as a medium, which are: daily release, freshness and actuality of content, attraction for all family members (for each age) and localized circulation, while the special advantages are the following: the newspapers cover the market in its entirety, newspapers involve every family member, frequency (regularity), news as the background of the advertisement, selective coverage of the territory, "a domestic character," speed of action, timeliness, good will, referring to the place of sale, cooperation with trade, newspaper

propaganda easily accommodated to the budget, low-priced (Barnes, 1964, pp. 416-417).

On the other hand, newspapers (magazines) are classified as periodical publishing (e.g. weekly, monthly, etc.), quality print (paper, color), protective foil (not all), selected topic, the possibility of gifts or additional promotional material to readers, and often the loyalty of the readers and passing magazines from hand to hand, with a greater number of those who are exposed to promotional messages than the number of sold copies. (Barnes, 1964, pp. 470-478) quotes and then analyzes in more detail the five basic advantages of the journal:

- A Selectivity of Readers,
- B The uniformity of coverage,
- C Readability of the magazine,
- D Clarity of presentation,
- E Full presentation.

Radio advertising is based exclusively on the transmission of sound messages, which represents the main feature that distinguishes it from other media types. Accordingly, the message itself and its way of presenting (voice, reading, and sound effects) impact the listeners in order to initiate imagination and create an appropriate picture of the product in their consciousness. Listening to the radio is usually a side-by-side (follow-up) activity that allows you to focus on sound without distracting attention by moving pictures (as with television). Short, clear, and concise advertisements that are often repeated, increasing the likelihood that the target audience will hear the message for which there are no major investments (the radio is not too expensive, while the Internet and the development of smart devices have enabled its monitoring in any place at any time). Of course, all of the aforementioned features may also become a negative side of radio advertisements if the market approach is based on its inadequate analysis or exaggeration in the use of the potential of this type of media.

Nowadays, there is a growing integration of radio and Internet technologies, so a large number of radio stations broadcast their online program simultaneously, or it is for some the only mode of broadcasting. As a confirmation of the ingress of radio into online space, the analysis of one of the sites that provides the possibility of listening to radio programs over the Internet can be used, with the result that 297 radio stations are available (<http://www.uzivoradio.com/srbija.htm>, March 3, 2018 13:23), while on another site, it is possible to find as many as 652 stations only from Serbia broadcasting their programs (<https://www.radio-uzivo.com/srbija>, March 3, 2018 13: 26).

Television advertising is based on the use of the specificity of television as a medium. Television has often been said to be the most complete media compared to press and radio, especially as it includes video (moving images). Nowadays, it is a matter of dispute whether television is a so-called complete medium, especially due to the growing influence of the Internet on society, based on multimedia and interactivity. Like newspapers and radio, television is increasingly present on the Internet, using this medium's potentials. Television is characterized by the fact that it allows the combination of sound, image and video, thus striving to present as full a product as possible (the offer) of the company, aiming at stimulating the so-called "emotional" reactions of viewers - potential customers. Gajić and Golijanin, (2016, p. 102) state that advertisers promote their advertising messages as sponsorship or as a TV spot, while the main features of TV advertising are the following:

- The most effective medium for advertising,
- Large infiltration of messages,
- Messages quickly and easily reach the target audience,
- Measuring efficiency is precise,
- Advertising is expensive and unattainable for small advertisers,
- The time to communicate the message is limited and
- Advertising blocks are hard to track (Gajić, Golijanin, 2016, p. 100).

EVENTS - CREATING AN EXPERIENCE OF CONTACT WITH THE BRAND

Many companies use events as a way to attract or retain customers. For this purpose, they organize or sponsor different types of events whose audience largely coincides with their target market. A growing connection between the experience that is created from customer visits or participation in these events leads to an increasingly common view of them in the form of promotions called marketing events and experiences. Under the conditions of the existence of numerous means of communication, both traditional and modern, it is necessary to determine the reason why marketers generally turn to events as an element of a promotional mix. The answer to this question is given by Stokar (2006, pp. 45-55), emphasizing advertisers' motives for selecting event marketing: dissatisfaction with traditional methods, immediate interaction, well-timed growth of familiarity, revival of the spirit of solidarity, inaccessible marketing niches, a shock-effect with modest funds, evaluating other techniques, the influence of the media, the personal taste of advertisers, and the right choice.

It is very important for a marketer to determine the potential success of an event, and for this purpose Goldblatt created a concept that consists of five questions, which is also known as 5W:

- (1) Why?
- (2) Who?
- (3) When?
- (4) Where?
- (5) What? (Goldblatt, 2002, pp. 41-42)

Some of the examples of the impact of events on creating a positive consumer experience are museums - traditional or online (pointing to tradition and innovation process), open door days (nothing to hide, openness, involvement of customers), buildings - company buildings which bear their own brand name (attracting attention, identifying a facility with a company/brand), specially decorated spaces (highlighting the significance of individual customer segments), and the like.

SALES PROMOTION - SHORT-TERM PROMOTIONAL ACTIVITIES

The price is often one of the decisive factors of consumer decision making regarding purchasing (accepting a bid). Accordingly, the use of the price for promotional purposes can achieve notable results in the area of increased sales volume. Sales promotion, which is based on these activities, is one of the most commonly used elements of the communication mix in its various forms - discounts, coupons, prize games, competitions, free samples, guarantees and the like. Peattie and Peattie (2003, pp. 458-484, pp. 462-463) specify 20 major forms of consumer promotions: discount pricing and sales, money-off coupons, refunds, samples, payment terms, multipacks and multibuy, special features, quantity increases, in-pack premiums, in-mail premiums, piggy-back premiums, competitions, information, valued packaging, loyalty cards, gift coupons, product trial, guarantees, cashback offers, clubs. "Sales promotions invite and reward quick response. Whereas advertising says, 'Buy our product,' sales promotion says, 'Buy it now.' Sales promotion effects are often short lived, however, and often are not as effective as advertising or personal selling in building long-run brand preference and customer relationships" (Kotler, Armstrong, 2011, p. 425). The three key elements of defining this type of promotion is that sales promotion is the following:

- Non-standard.
- Response orientated.
- Benefit orientated (Peattie, Peattie, 2003, pp. 458-484, pp. 458-459).

DIRECT MARKETING - DIRECT CONTACT WITH CONSUMERS

Direct marketing is a form of promotion that is based on the direct contact of the marketer with customers. "Direct marketing is the use of direct media to establish a closer relationship with consumers" (Golijanin, 2010, p. 104). In order to better understand its essence, it is necessary to outline its goals and functions. Some of the basic functions of direct marketing may include the following:

- sale,
- generating stakeholders,
- humanitarian drives,
- maintaining customer relationships and post-sales services,
- generating trade traffic and
- support for general advertising (Mandarić, 2008, pp. 71-92, p. 77).

On the other hand, some of the basic goals of direct marketing could be the following:

- for the consumer to be better acquainted with the product or service,
- to increase the influence on consumer attitudes, education, the destruction of prejudices, and the like,
- to receive feedback from the consumer about the product or service,
- to contribute to better sales through knowledge of consumer needs, and the selection of products or services that meet these needs,
- to affect the time of purchase,
- to support other instruments of marketing policy (pricing policy, distribution policy measures, product differentiation, product introduction on the market, etc.) (Stanivuković et al., 2009, pp. 145-154, p. 148).

The major forms of direct marketing include personal selling, direct-mail marketing, catalog marketing, telephone marketing, direct-response television (DRTV) marketing, kiosk marketing, new digital direct marketing technologies, and online marketing (Kotler, Armstrong, 2011, p. 500).

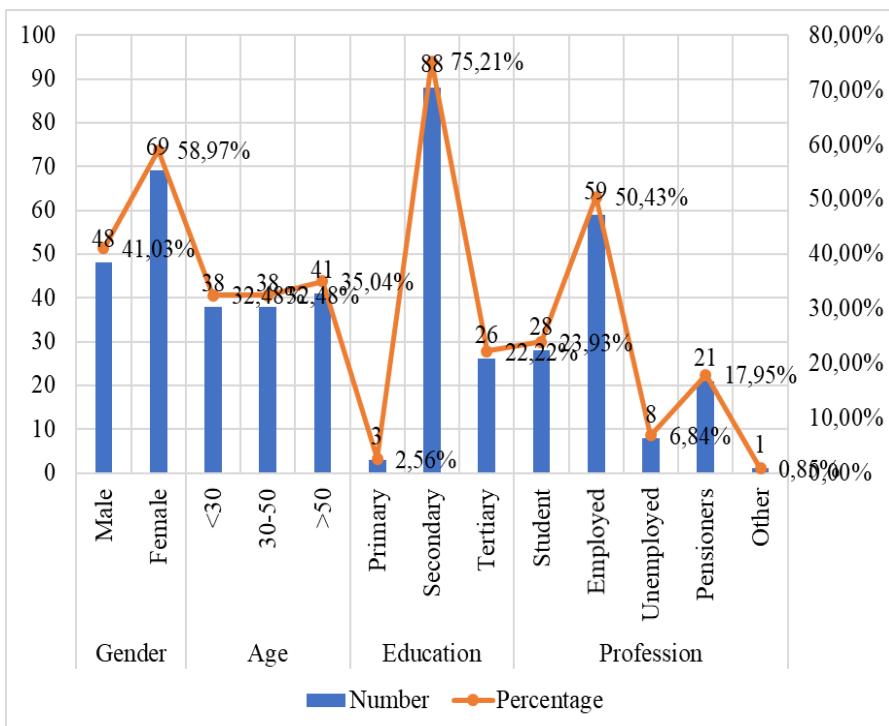
The impact that direct marketing has on consumers primarily depends on the applied form. When it comes to personal sales, it is necessary to point out that sellers/presenters must have a "complete performance." Voice, speech and expression, clothing and footwear, facial and body movements, readiness to answer questions easily and simply, resolve remarks, etc. generally provide much more information to customers than the basic message sent. At the same time, customer feedback is much more relevant, especially since it can be used for on-the-spot corrections in order to keep the communication in the desired direction in order to achieve the set goal.

The implementation of direct marketing by sending mail in line with the development of information and communication technologies is increasingly present online - via E-mail. However, the traditional form of direct mail still exists as a current way of promoting. Beginning from massively-oriented mail sending campaigns to a large number of addresses, to individualized offers for a particular individual, direct mail impacts through the text that contains, its design and design, the quality of the paper, the quality of the press, additional content, the specialty of the offer, the expression, sending times and frequency, as well as options for additional contact (Web site, E-mail, phone, etc.). One of the forms of direct mail marketing that is increasingly present in electronic form is catalog marketing.

The use of telephones, both landlines and mobiles, in promotional activities is the basis of creating so-called telemarketing, which by integrating with modern information and communication technologies is increasingly involved in so-called telemarketing, online or Internet marketing.

DESCRIPTION OF THE RESEARCH

Empirical research was carried out using an anonymous closed-type survey (rounding off) on a sample of 117 respondents in March 2018 in the territory of the city of Čačak. The structure of the respondents was established according to gender (69 persons - 58.97% female and 48 male - 41.03%), according to profession (59 employed - 50.43%, 28 students - 23.93%, 21 pensioners - 17, 95%, 8 unemployed - 6.84% and other - 0.85%), according to education (88 with secondary - 75.21%, 26 with tertiary - 22.22% and 3 with primary school education - 2.56%). The structure of the sample can be seen in Picture 2.



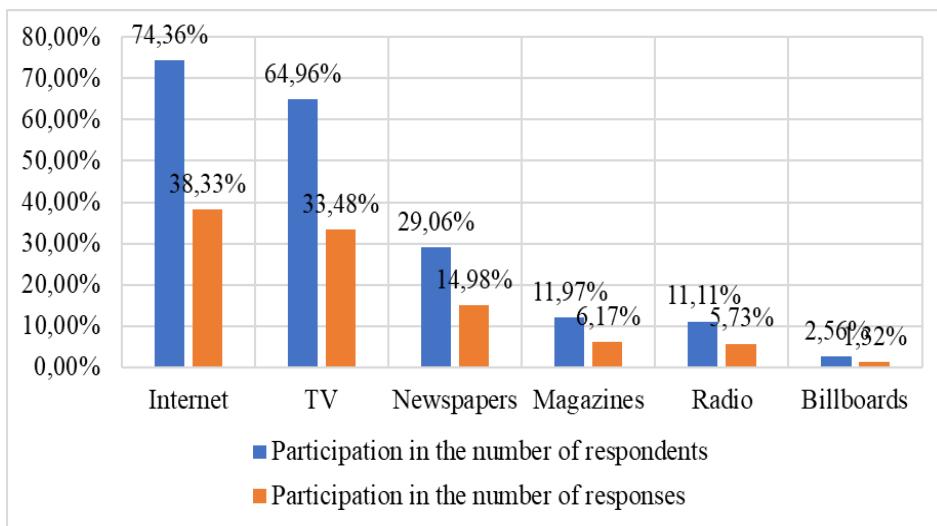
Picture 2. Sample structure

Source: Authors

The average number of years of age was 42.54, the youngest being 20 and the oldest 97. The majority of respondents belonged to the group over 50 - 41 of them (35.04%), while there were slightly less respondents in the groups of 30 and 30-50 years - 38 persons in both cases (32.48% each).

RESEARCH RESULTS

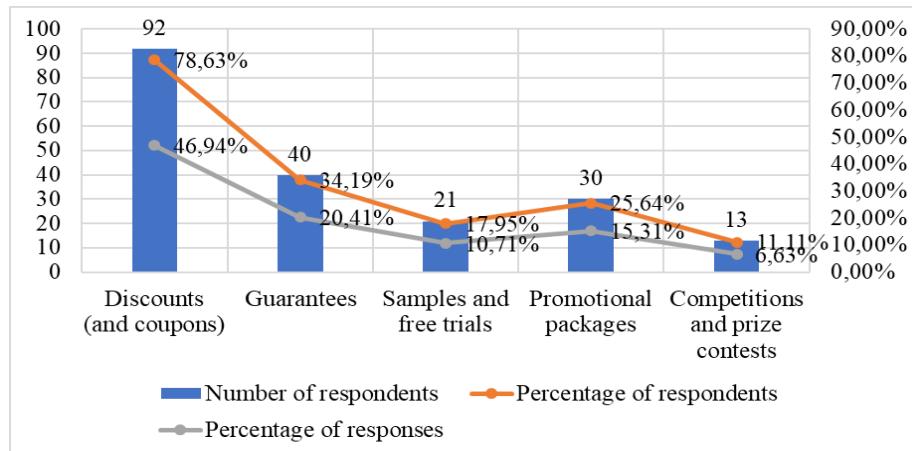
Overall, the media that dominate in information about products/services in advertising activities are the Internet (87 respondents, 74.36%), television (76 respondents, 64.96%), newspapers (34 respondents, 29.06%), magazines (14 respondents, 11.97%), radio (13 respondents, 11.11%) and billboards (3 respondents, 2.56%). Based on the possibility of multiple responses, Picture 3 shows a comparative overview of the share of the media in the total number of respondents and the total number of responses (227).



Picture 3. Participation of the media for informing/promoting in number of respondents and number of responses.

Source: Authors

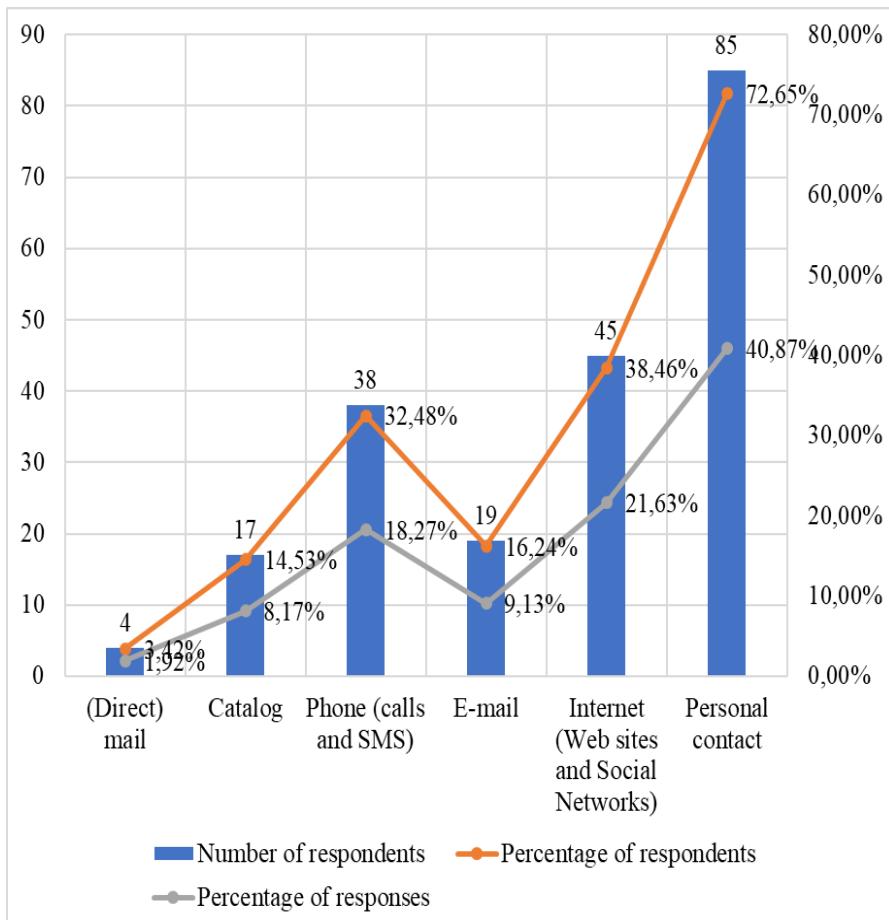
Among the sales short-term activities to encourage purchase (improvement of sales), the majority of respondents said that they mostly use discounts (and coupons) (92; 78.63%), followed by warranties (40; 34.19%), promotional packages (25.64%), samples and free trials (21; 17.95%) and giveaways and prize contests (13; 11.11%) - Picture 4.



Picture 4. The most frequently used means of sales promotion

Source: Authors

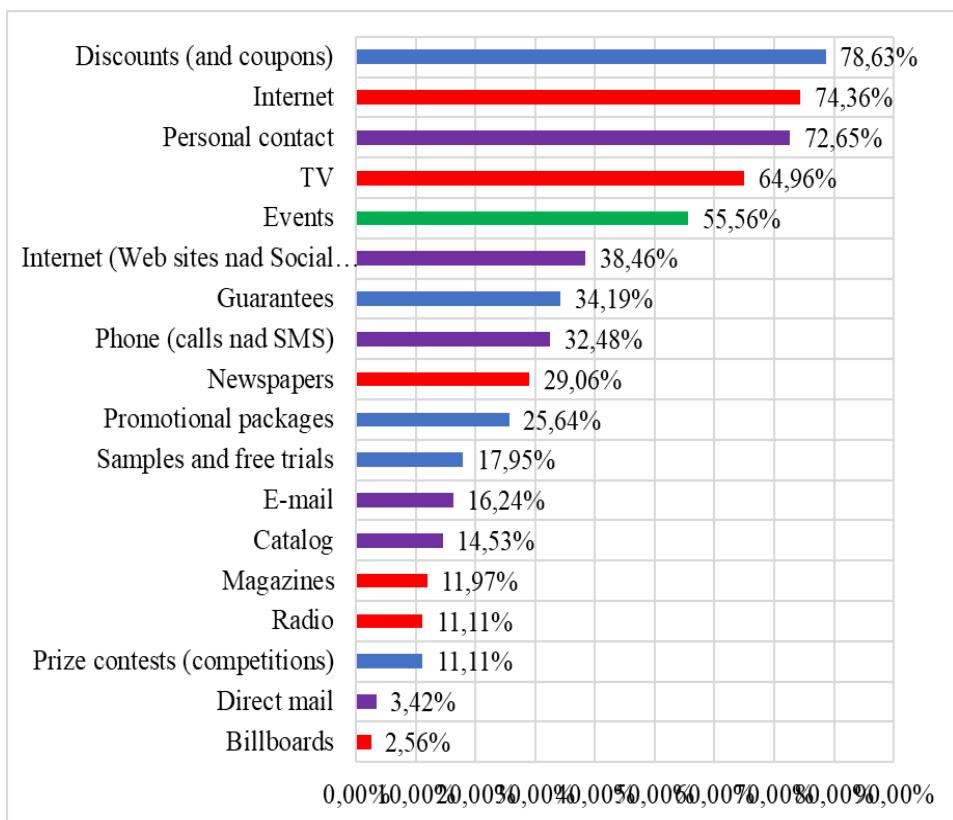
The preferred form of direct contact with the vendor (Picture 5) for most respondents is personal contact (85; 72.65%), followed by Internet - Web sites and social networks (45; 38.46%), telephone - calls and SMS 38, 32.48%), E-mail (19; 16.24%), catalog (17; 14.53%) and direct mail (4; 3.42%).



Picture 5. Preferred form of direct contact with the vendor

Source: Authors

If a comparative overview of all specific forms of analyzed promotion instruments is made, it would be possible, at least generally, to observe which are the best placed promotion instruments among consumers. The comparison can be seen in Picture 6.



Picture 6. Comparative overview of the use of specific forms of information/promotion

Source: Authors

Based on the data from Picture 6, it is possible to observe that the best positioned among the consumers are discounts with coupons (78.63%), as well as advertisements on the Internet (74.36%), personal contact (72.65%) and television (64.96%).

If the comparison was done according to the average number of respondents who opted for a specific form of promotion instruments, then the best position would be held by sales promotion (39.2; 33.50%); advertising (37.83; 32.34%) and direct marketing (34.67; 29.63%), while events would have the worst placement.

CONCLUSION

Consumer behavior during the period of contact with the marketer before, during and after the purchase leaves a great deal of information that will be the basis for changing and improving the existing but also the development of new

market accesses. The formation of long-term stable relationships with stakeholders, and primarily with CRM-branded consumers, as well as their adequate management taking into account the operation of numerous factors (both internal and external), is one of the main goals of every marketer who aspires to business success. Modern technologies have incurred a lot of changes in this area, but have also created the possibility of forming closer marketer-buyer relationships, increasingly based on individualization and personalized marketing.

Nothing is immutable, which is especially reflected in today's modern business conditions where change has become part of everyday life. Thus, it can be said that marketing alters as well as its promotion. New forms are created while the existing ones are constantly monitored and corrected. Regardless of whether they are classical or new, communication mix instruments will be applied as long as the marketer sees some interest in them, or as long as they achieve at least a small impact. Advertising, sales promotion, events and direct marketing are increasingly integrated with the dominant forms of information and communication technologies, with the goal of being as close as possible to their existing and potential customers.

On the basis of the conducted research, marketers should focus on discounts and coupons in their promotional activities (78.63%), while direct marketing should focus on personal contact (72.65%). By concurrent observation of the whole of all specific forms of promotion instruments, it can be concluded that consumers prefer the use of discounts and coupons (78.63%), advertising over the Internet (74.36%), personal contact (72.65%) and television (64.96%). The general hypothesis of this paper is confirmed by the fact that the highest percentage is related to discounts and coupons, which belong to sales promotion. If an average number of responses based on the number of specific forms analyzed within the framework of the promoter would be viewed as an indicator of consumer interest for an instrument of promotion, sales promotion would be in the first place (average: 39.2 respondents, i.e. 33.5%). This method is as it is difficult to determine the true inclination of consumers towards the sum total of a particular promotional instrument, and therefore the comparison is relative. Comparing these data with (Garabinović, Nikitović, 2017, pp. 81-102) and (Nikitović et al., 2018, pp. 49-59) it is clear that there is a harmonization of promotional strategies that marketers in the area of Čačak and beyond the Morava Administrative District apply with consumer preferences from the same territory, which is best demonstrated by the minimal representation of events as a form of promotion.

As it can be seen, time changes many things, but one thing always remains the same – there is a consumer in the hub of marketing, and her/his role is growing.

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INVESTIGATING THE IMPACT OF MARKETING CAPABILITIES ON EXPORT PERFORMANCE OF IRANIAN NANO TECHNOLOGY PRODUCTS EXPORTERS

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ABSTRACT

The purpose of this study was to investigate the impact of marketing capabilities on the export performance of Iranian companies exporting Nano technology products. This research type is applied and is descriptive-survey oriented in terms of collecting required data. The statistical population of this study is all managers of Iranian Nano technology products exporter companies. In this research, partial differential least squares method and Smart PLS software were used to study the relationship between variables and data analysis. The results of the research showed that marketing capabilities have a positive and significant effect on competitive strategies and situational advantages and competitive strategies have a positive and significant effect on situational advantages and export performance. The results also confirmed the impact of situational advantage on export performance. Other research findings confirm the role of the mediator of competitive strategies and positional advantages in the relationship between marketing capabilities and export performance, as well as the ambidextrous innovation (or Ambidexterity of innovation) moderator in the relationship between marketing capabilities with competitive strategies and situational advantages.

Key words: Marketing Capabilities, Export Performance, Competitive Advantage, Ambidextrous Innovation

JEL Classification: F14, O31

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INTRODUCTION

Export is such a vital part of the economy of each country that exporting goods and services is considered the most important source of foreign exchange earnings of countries, keeping global economy vigorous and dynamic (Mohammadkazemi, 2016). Nowadays, the focus of the Iran's economy is on making the economy independent of oil revenues (Ziyae & Tajpour, 2016).

The important point is that companies need to have acceptable export performance to survive in international markets since, in the long run, poor export performance will lead to not only a loss of market share, but also a loss in the resources of the organization and the investments made in this area. Therefore, it is essential that each organization identifies the factors influencing its export performance and pays particular attention to them (Khalid, 2015).

In the literature, there are several factors affecting the export performance, the most important factors of which are marketing capabilities (Tan, 2015), competitive strategies and positional advantages (Martin, 2017).

Competitive advantages, including competitive strategies and positional advantages, are among the factors affecting export performance (Martin, 2017). In order to achieve potential competitive advantages companies need to strengthen their capabilities and competencies. Thus, the company must first develop its marketing capabilities to achieve superior performance. These capabilities enable companies to provide better products and services compared to their competitors (Tan, 2015).

In recent years, due to the economic and political situation of Iran and the sanctions imposed against this country in the fields of oil and international trade, the need for export expansion and further penetration into the world markets has become increasingly important and the development of non-oil exports is a serious necessity.

On the other hand, today, there is the urgent need to pay more attention to the development of non-oil exports—given the global decline in the prices of crude oil—and the reduction of country's dependence on oil and its derivatives. That is why the government and related institutions are working hard to bring in various methods such as export awards, tax exemptions, and so forth to direct companies towards exporting different products. Consequently, it is even more vital than ever to identify the factors affecting export performance and strengthen them.

Therefore, considering the importance of the issue and the lack of a comprehensive model for examining the factors affecting export performance, this study aims to investigate the impact of marketing capabilities on the export performance of Iranian Nano technology products exporter companies.

LITERATURE REVIEW

This section is examined in two major sections of theoretical background and theoretical framework of the study.

THEORETICAL BACKGROUND

In this section, the key concepts of the present research will be reviewed. In this regard, the variables of “export performance”, “marketing capabilities”, “competitive advantage”, and “ambidexterity” are investigated.

MARKETING CAPABILITIES

Marketing capabilities refer to an integrated process in which companies use tangible and intangible resources to understand the complexity of the specific needs of customers, achieve a relative differentiation of products for competitive advantage, and ultimately achieve an appropriate brand quality (Song, 2007). This enables companies to effectively implement strategic orientations tailored to meet the company's market conditions and achieve specific performance goals (Morgan, 2009).

A company's marketing capability is its scarce, valuable, and irreplaceable power and capability. Empirical studies have concluded that marketing capability provides superior competitive advantages (Nath, 2010).

Effective development of new products, appropriate pricing, effective channel management and marketing communications are the main features of dynamic marketing capabilities (Barrales-Molina, 2014).

COMPETITIVE ADVANTAGE

According to the Merriam-Webster Glossary, “advantage” is defined as “superiority of position or condition” and “a factor or circumstance of benefit to its possessor”, and “competition” is defined as “the act or process of two or more parties competing”. Thus, putting these two words together makes “the factors and conditions that lead to competition among two or more individuals, organizations, etc., and result in at least one of them being superior to others and gaining some advantage” (Rajabali baglo, 2012).

Companies can achieve various competitive advantages over their competitors, the most important one of which that is underscored in this study is the cost leadership and differentiation in products and services (Tan, 2015).

With the expansion of business and competition, only those companies are prone to win that offer products of higher quality and lower prices prior to their competitors. Companies can take advantage of competitive advantage and compete successfully through adopting cost leadership and product differentiation strategies. Based on the cost-quality trade-off triangle (cost, quality, and time), companies try to offer their product with high quality and performance and low price (Esmaeili Shahmirzadi, 2013).

AMBIDEXTERITY

The term ambidexterity is made up of the two Latin words (Ambi) meaning two sides (two-sided) and (dexterity) meaning domination and agility (Manteghi, 2015).

It was first introduced by (Duncan, 1976) and its main denotation is the individual ability to use both hands in the same way. This concept refers to the ability of the organization to equally point to two incompatible organizational goals: in uncertain situations, it typically has a positive effect on performance and leads to sustainable performance, survival and long-term success (Moradi, 2016).

Ambidexterity is defined as the ability to track down exploration and exploitation simultaneously (Strese, 2016), and ambidextrous companies can discover future opportunities with great flexibility while efficiently exploiting current competence (Vahlne, 2015). While exploitation involves the use of existing knowledge to reduce diversity, increase productivity, and improve adaptability in current environments, heuristic activities seek to develop new knowledge and create the necessary capabilities for the long-term survival and well-being of the company (Veider, 2015).

EXPORT PERFORMANCE

Export performance is a sign of a company's success in exports. Appropriate export performance is of paramount importance for companies, for it ensures long-term sustainability of the company. Export performance is defined as the output of company activities for overseas sales in different organizational and environmental conditions (Zehir, 2015).

In another definition, the export function is the extent to which the goals of a company to export products to a foreign market are realized through the planning and implementation of an export marketing strategy (Azar, 2016).

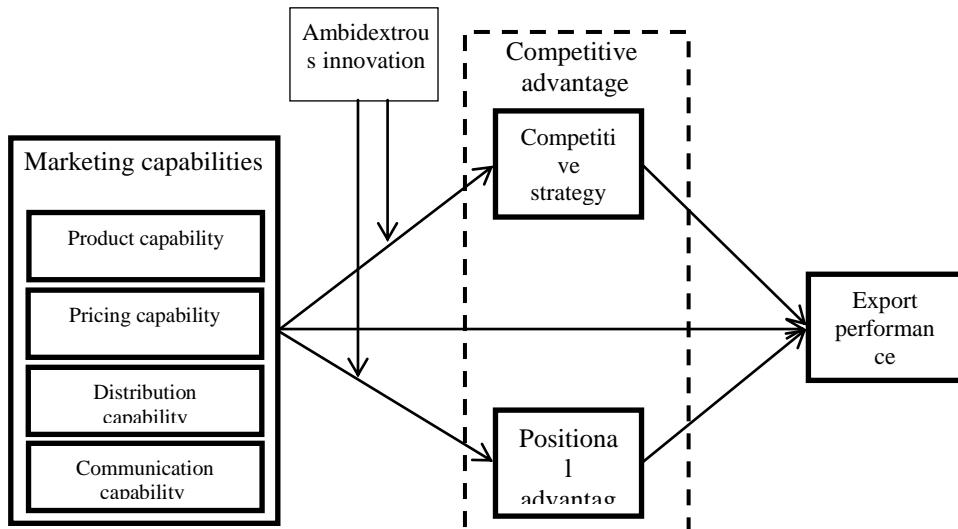
Export performance has a variety of dimensions that cannot be explained by one single indicator or agent. Researchers have highlighted three main dimensions of performance. The first is the effectiveness of the product and the firm's plans towards competitors. Indicators such as growth in sales can be indicative of effectiveness. The second dimension is the performance that focuses on business outcomes relative to its inputs. Profitability is the main index illustrating this dimension. The third dimension is adaptability which means how a business responds to changing conditions and opportunities in an environment (Moshabaki, 2012).

THEORETICAL FRAMEWORK

This research attempts to examine the impact of marketing capabilities on the export performance of Iranian Nano technology products exporter companies. To this end, the variables affecting export performance are identified through reviewing the related literature and the relationship between these variables are examined. Next, the relationships between the identified variables are presented in Picture 1.

This model is a combination of the models presented in (Kumlu, 2014) (Martin, 2017) (Murray, 2011) and (Tan, 2015). In the following paragraphs, after explaining the role of each of these studies in the emergence of the present

model, the research model will be discussed. (Tan, 2015) investigated the impact of marketing capabilities on competitive advantage and export performance and confirmed this impact in their study results. (Murray, 2011) also studied the effect of marketing capability on competitive advantage. In this study, competitive advantage was considered as a mediator variable in the relationship between marketing capabilities and export performance. The results, in addition to confirming the effect of competitive advantage on export performance, have also confirmed the mediation role of competitive advantage in the relationship between marketing capability and export performance. Similarly, (Kumlu, 2014) has underlined competitive strategies on export performance and (Martin, 2017) emphasized the impact of marketing capabilities on competitive strategies and positional advantages, as well as the impact of competitive strategies and positional advantages on export performance. They also considered the moderating role of ambidextrous innovation in the relationship between marketing capabilities with competitive strategies and positional advantages. In order to determine the indicators of marketing capabilities, the study conducted by (Tan, 2015) has been used. Researchers in this study introduced the product capability, pricing capability, distribution capability, and communication capability as indicators of marketing capabilities. Next, on the basis of what has been stated, the conceptual model of the research as well as the research hypotheses will be presented.



Picture 1. Conceptual model of research

RESEARCH HYPOTHESES

1. Marketing capabilities have a positive and significant impact on export performance.
2. Marketing capabilities have a positive and significant impact on competitive strategies.

3. Marketing capabilities have a positive and significant impact on positional advantages.
4. Competitive strategies have a positive and significant effect on export performance.
5. Positional advantages have a positive and significant effect on export performance.
6. Competitive strategies play a mediating role in the relationship between marketing capabilities and export performance.
7. Positional advantages play a mediating role in the relationship between marketing capabilities and export performance.
8. Ambidextrous innovation moderates the impact of marketing capabilities on competitive strategies.
9. Ambidextrous innovation moderates the impact of marketing capabilities on positional advantages.

METHOD

This research is applied in terms of purpose and in terms of data collection, it is a descriptive survey. The sample of this study consists of all the managers of Iranian Nano technology products exporter companies, and according to the assumption provided by (Barclay, 1995), the sample size was estimated to be 80. In the present study a questionnaire was distributed through using non-probability convenience sampling. Two types of library and field studies have been used to collect the data. Structural equation modeling (SEM) and PLS software have also been applied to analyze the data.

RESEARCH FINDINGS

In this part of the research, first validity and reliability of the research instrument will be examined. Then, the hypotheses of the research will be tested.

RELIABILITY

In the present research, three factors including lambda coefficients, Cronbach's alpha and composite reliability (CR) have been used to examine the reliability. The factors are discussed below and their results are reported accordingly.

LAMBDA COEFFICIENTS

Lambda coefficients of the questions of the questionnaire used in the study are as follows.

Table 1:Lambda coefficients of the questions

Questions	1	2	3	4	5	6	7
Lambda	0.581	0.806	0.719	0.633	0.498	0.680	683.0
Questions	8	9	10	11	12	13	14
Lambda	0.528	0.755	0.748	0.806	0.663	0.842	0.792
Questions	15	16	17	18	19	20	21
Lambda	0.827	0.889	0.721	0.852	0.633	0.627	0.552
Questions	22	23	24	25	26	27	28
Lambda	.6240	0.524	0.798	0.608	0.870	0.841	-

Given that the appropriate value of the lambda coefficients is equal to or greater than 0.4 (Hulland, 1999), and according to the results of Table 1, the values obtained for all questions are greater than 0.4, it can be said that the reliability is acceptable.

CRONBACH'S ALPHA AND COMPOSITE RELIABILITY

Cronbach's alpha and the composite reliability of each of the variables in the study are depicted in Table 2.

Table 2:Cronbach's alpha and composite reliability of the variables

Variable	Cronbach's alpha	Composite reliability
Marketing Capabilities	0.788	0.848
Competitive Strategy	0.736	0.822
positional advantage	0.748	0.835
Ambidextrous innovation	0.794	0.863
Export performance	0.811	0.864

According to the results of Table 2, the value obtained for all the variables is more than 0.7. Therefore, as the appropriate value of Cronbach's alpha (Cronbach, 1951) and the proper value of the composite reliability are also 0.7 (Nunnaly, 1978), reliability can be considered acceptable.

VALIDITY

In this study, convergent validity assessed by the Average Variance Extracted (AVE) has been deployed to examine the validity. In the following section the results are interpreted and reported.

CONVERGENT VALIDITY

To estimate the convergent validity, the Average Variance Extracted (AVE) was used. The AVE for each of the variables in the research is shown in Table 3.

Table 3: The Variables' Average Variance Extracted

Variable	The average variance extracted (AVE)
Marketing Capabilities	0.440
Competitive Strategy	0.505
positional advantage	0.615
Ambidextrous innovation	0.522
Export performance	0.555

Given that the appropriate amount of AVE is 0.4 ((Magner, 1996) and according to the results of Table 3, the value obtained for all variables is more than 0.4 and it can be concluded that convergent validity is acceptable.

HYPOTHESIS TESTING

Table 4 illustrates the relationships between research variables based on research hypotheses and the resulting approval or rejection of each hypothesis.

Table 4. Structural Model and Hypothesis Testing Results

Hypotheses	Path Coefficients	Significant Coefficients	Result
Marketing capabilities have a positive and significant impact on export performance.	0.712	5.42	Confirmed
Marketing capabilities have a positive and significant impact on competitive strategies.	0.805	7.61	Confirmed
Marketing capabilities have a positive and significant impact on positional advantages.	0.673	9.78	Confirmed
Competitive strategies have a positive and significant effect on export performance.	0.784	5.77	Confirmed
Positional advantages have a positive and significant effect on export performance.	0.286	2.85	Confirmed
Ambidextrous innovation moderates the impact of marketing capabilities on competitive strategies.	0.303	2.31	Confirmed
Ambidextrous innovation moderates the impact of marketing capabilities on positional advantages.	0.321	2.02	Confirmed

SOBEL TEST

This test is employed to measure the significance of the mediator effect of a variable in the relationship between the two other variables. In Sobel test, a z-value is calculated by the following formula, and if the value obtained is greater than 96/1, the confidence level of 95% is confirmed by the significance of the mediating effect of a variable. The results of this test can be seen in Table 5.

Table 5. Sobel test results

Hypotheses	z-value	Result
Competitive strategies play a mediating role in the relationship between marketing capabilities and export performance.	2/18	Confirmed
Positional advantages play a mediating role in the relationship between marketing capabilities and export performance.	3/26	Confirmed

DISCUSSION AND CONCLUSION

In this section, an overview of the research hypotheses together with a more detailed analysis of the results for each of the hypotheses are provided and the findings are compared with previous studies.

HYPOTHESIS 1: MARKETING CAPABILITIES HAVE A POSITIVE AND SIGNIFICANT EFFECT ON EXPORT PERFORMANCE.

At 95% confidence level and based on the results of Table 4, considering that the value of the t-test is 5.42 and greater than 1.96, it can be said that the hypothesis of the effect of marketing capabilities on export performance is confirmed. Also, with a positive value of 0.712 as a standardized path coefficient, it can be concluded that marketing capabilities will have a positive and strong impact on export performance. That is to say that as the organization's marketing capabilities increase, its export performance can also improve. This is because marketing capabilities make the organization more aware of export markets in comparison with its competitors and help it provide products and services that meet the needs and requirements of these markets, which will consequently result in the organization's attaining more of the export share of the market compared with its competitors. The results obtained in this section are consistent with the findings of the study by (Tan, 2015) and (Hajipour, 2013).

HYPOTHESIS 2: MARKETING CAPABILITIES HAVE A POSITIVE AND SIGNIFICANT EFFECT ON COMPETITIVE STRATEGIES.

At 95% confidence level and based on the results of Table 4, considering that the value of the t-test is 7.61 and greater than 1.96, it can be said that the hypothesis of the effect of marketing capabilities on competitive strategies is confirmed. Also, given the positive value of 805.0 as a standardized path coefficient, it can be concluded that marketing capabilities will have a positive and strong impact on competitive strategies. To further explain the results of this section, it can be said that increasing the organization's marketing capabilities (including new product/ service development capability, competitive pricing capability, marketing communications capability, etc.) will enable the organization to develop better strategies compared to its competitors and exploit them in a competitive environment to provide a higher value to the customer. The results of (Kumlu, 2014) confirm the findings of this section.

HYPOTHESIS 3: MARKETING CAPABILITIES HAVE A POSITIVE AND SIGNIFICANT EFFECT ON POSITIONAL ADVANTAGES.

At 95% confidence level and based on the results of Table 4, given that the value of the t-test is 9.88 and greater than 1.96, it can be said that the hypothesis of the effectiveness of marketing capabilities on positional advantages is confirmed. Also, with a positive value of 0.673 as a standardized path coefficient, it can be concluded that marketing capabilities have a positive and strong impact on positional advantages. That is, the greater the marketing capabilities of an organization, the more likely it will be for the organization to have more and better positional advantages compared to its competitors to deliver value to the customer. The results obtained from (Tan, 2015) and (Murray, 2011) confirm the results of this section.

HYPOTHESIS 4: COMPETITIVE STRATEGIES HAVE A POSITIVE AND SIGNIFICANT EFFECT ON EXPORT PERFORMANCE.

At 95% confidence level and based on the results of Table 4, given that the value of the t-test is 5.77 and greater than 1.96, it can be said that the hypothesis of the effect of competitive strategies on export performance is confirmed. Also, given the positive value of 0.784 as the standardized path coefficient, it can be

concluded that competitive strategies will have a positive and strong impact on export performance. Accordingly, it can be said that the company, by the use of competitive strategies such as the differentiation strategy (the presentation of specific products unique to the market that are distinct from the similar products presented by other competitors on the market) or the use of cost leadership strategies and waging price warfare, eliminates the rivals and improves its export performance by acquiring a larger market share. The results from this section are consistent with the results of the study conducted by (Martin, 2017).

HYPOTHESIS 5: POSITIONAL ADVANTAGES HAVE A POSITIVE AND SIGNIFICANT EFFECT ON EXPORT PERFORMANCE.

At 95% confidence level and based on the results of Table 4, given that the value of the t-test is 2.85 and greater than 1.96, it can be said that the hypothesis of the effect of positional advantages on export performance is confirmed. Also, with a positive value of 0.286 as a standardized path coefficient, it can be concluded that positional advantages will have a positive effect on the export performance. That is, the more positional advantages an organization possesses, the better its export performance will be. Hence, it can be argued that having positional advantages leads to more value for the customers by virtue of which the organization wins a greater share of the market and profitability increases as the sales rise. In better words, the growth of the two indices of market share and profitability is indicative of improvement in export performance. The results obtained in this section are in line with the results of the studies carried out by (Mohammadian, 2014), (Kordnaeej, 2005), and (Tan, 2015).

HYPOTHESIS 6: AMBIDEXTROUS INNOVATION MODERATES THE IMPACT OF MARKETING CAPABILITIES ON COMPETITIVE STRATEGIES.

At 95% confidence level and based on the results of Table 4, considering that the value of the t-test is 2.31 and greater than 1.96, it can be said that ambidextrous innovation moderates the impact of marketing capabilities on competitive strategies. Accordingly, it can be argued that a company, applying the ambidextrous innovation capability, has both created new knowledge and novel ideas and exploited existing knowledge and ideas, hence enabling the company to take advantage of marketing capabilities to apply appropriate competitive strategies. The results from this section are consistent with the results of the study by (Martin, 2017).

HYPOTHESIS 7: AMBIDEXTROUS INNOVATION MODERATES THE IMPACT OF MARKETING CAPABILITIES ON POSITIONAL ADVANTAGES.

At 95% confidence level and based on the results of Table 4, given that the value of the t-test is 2.02 and greater than 1/96, it can be argued that ambidextrous innovation moderates the impact of marketing capabilities on positional advantages. The results from this section are consistent with the results of the study carried out by Martin et al. (2017).

HYPOTHESIS 8: COMPETITIVE STRATEGIES PLAY A MEDIATING ROLE IN THE RELATIONSHIP BETWEEN MARKETING CAPABILITIES AND EXPORT PERFORMANCE.

At 95% confidence level and based on the results of Table 5, given that the z value is equal to 18.2 and greater than 1.96, it can be said that the hypothesis of mediation of competitive strategies in the relationship between marketing capabilities and export performance is confirmed. Accordingly, companies can use their marketing capabilities, such as product capability or pricing capability, to take advantage of appropriate strategies such as the strategy of differentiation or cost leadership strategy, thereby allowing competition with other companies and improving their export performance. The results from this section are in line with the results of the study conducted by (Martin, 2017).

HYPOTHESIS 9: POSITIONAL ADVANTAGES PLAY A MEDIATING ROLE IN THE RELATIONSHIP BETWEEN MARKETING CAPABILITIES AND EXPORT PERFORMANCE.

At 95% confidence level and based on the results of Table 5, given that the z value is 2.87 and greater than 1.96, it can be stated that the hypothesis of mediation of positional advantages in the relationship between marketing capabilities and export performance is confirmed. The results obtained in this section are in line with the results of the studies conducted by (Kordnaeej, 2005), (Mohhammadian, 2014) and (Tan, 2015) .

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PEERS INFLUENCE ON CONSUMERS` PURCHASE BEHAVIOUR: A CASE OF UNILEVER`S COSMETIC PRODUCTS

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ABSTRACT

The primary aim of this study is to analyse and critically evaluate the influence of friends and family on customer decisions and buying behaviour in the purchase of cosmetic products. The contemporary landscape in customers' buying behaviour has been revolutionised depending the quality of a product, self-positioning, and sources of information. It is stringent that the advertisements play a vital role in persuading customers' attention, but other factors such as, social media intrusion have influenced even more. Various interactions, among family and friends, have pillared the reasons to determine the decision of whether a customer purchases a product. Though scholars have channelled much efforts and resources towards the study of friends and family and their influence on consumer buying decisions, fewer studies have examined the impact of family and friends on individuals' buying decision behaviour when cosmetic products are concerned. The study has examined how social, economic and psychological factors impact on consumer behaviour using Unilever's products. In sum, the current technological advancement has made it easier to access and view products forcing the companies to redefine their marketing strategies as well as the beauty stereotypes.

Key Words: *Consumer, Customer, Customer Buying Behaviour, Customer Decision Behaviour, cosmetic products*

JEL Classification: *M30*

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OVERVIEW

Every day, more than 2.5 billion people around the globe use products from Unilever Global, a company that manufactures and markets cosmetic products, among other household categories. Customers of Unilever cosmetic products reach for affordable brands designed to meet consumer needs, including everyday household care and enhancing health (Unilever, 2016). In every ten households worldwide, seven consume at least one Unilever cosmetic product from a variety of favourite brands. Based on statistics from Unilever financials, cosmetic products form the largest business segment of the company, with a total earning of over £20.1 billion in the 2016 fiscal year (Unilever, 2016).

Moreover, Unilever engages in corporate social responsibility initiatives (CSR), such as helping people improve their hygiene and health through their cosmetic product lines globally, which decreases the incidence and prevalence of communicable diseases. As a result, many family members and friends directly influence their peers into the purchasing and consumption of Unilever cosmetics, particularly detergents, body lotions and fragrances based on the positive impact of this CSR initiative. In addition, the company designs various advertising and marketing messages using children as the influence of family members to stimulate the purchasing decisions and buying behaviours of their products. Such campaigns include the use of school-going children in the marketing of hand-wash detergents, which revolutionize the consumer base for various household products under cosmetics (Unilever, 2016). In this study, Unilever cosmetic products will be overtly used in the results discussion to evaluate how friends and family members are integrated in the influence of the customers' decision, behaviour and buying behaviour of cosmetics.

LITERATURE REVIEW

FRIENDS AND FAMILY MEMBERS

According to Beck et al., (2015), a significant percentage of the preferences of consumers to purchase products are built on influences of their inter-group interaction. As a result, an individual consumer builds patterns of selection from the impact of friends and family members (Sivanesan, 2014). Gupta and Ogden (2009) outline friends and family members as individuals whose opinions, behaviours, attitudes and beliefs are viewed as a standard point for self-assessment and evaluation.

The psychological impact of friends or family members is of imminent importance when influencing peers into making purchase decisions or buying products for social consumption. While Niu (2013) advocates that friends and family members may not intentionally suggest what to buy to a potential customer, a customer is psychologically manipulated to make a purchasing decision based on respect for their opinions and feelings. According to Nair and Pillai (2007), more than half of men in a population (54%) and 47% of women

make purchasing decisions individually. Importantly, 10.7% of women are influenced by their friends when making purchasing decisions and buy cosmetic products, as opposed to 4.7% of men (Nair and Pillai 2007).

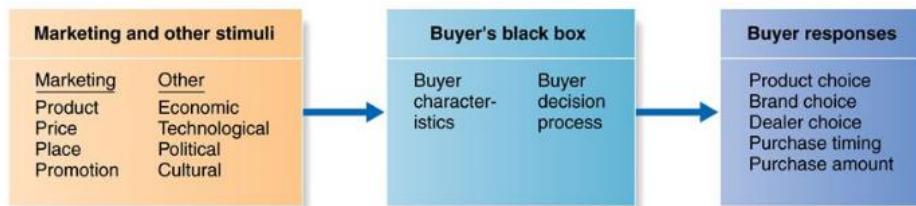
CUSTOMER BEHAVIOUR IN BUYING OF COSMETIC PRODUCT

The development of competitive cosmetic products is partly embedded in the understanding of consumer behaviour (Ratnam 2015). Companies need to define consumer needs and wants while building their products in order to meet these specifications. Consequently, corporate marketers develop brand loyalty and gear their products to increased competitiveness in the market (Pride et al., 2000). In the changing competitive cosmetic business environment, businesses are thriving by acquiring value customers in the larger market share (Ratnam 2015).

Currently, the market is flooded with a wide variety of cosmetic products, of which their use is highly attached to the particular preferences of adult friends and family members (Pride and Ferrell, 2000). The patterns of these preferences are continually changing too, meaning it is imperative for cosmetic marketers to define the patterns that cosmetic consumers engage in when making purchasing decisions, in order to retain and expand their clientele (Ratnam, 2015). The current marketing strategies necessitate influence from family and friends on the purchasing choice of customers, since global competition has compelled firms to channel huge resources into marketing campaigns and advertisements to stimulate consumers to select their brands (Sheehan, 2014). For instance, in 2010, Unilever launched a new cosmetic brand to appeal to the older generation, with many other product lines targeting children and young groups of the society (Sheehan, 2014). The company invests hugely on marketing campaigns that define children as influential groups to other consumers of their brands and product lines (Michman et al., 2003). Hand-washing campaigns are such examples of marketing plans targeting school-going children that underlie a family reference component of an up-coming consumer base.

Marketing theories have postulated, in the past, that customer motivation leading to the purchase of a product or a brand is dependent on the level of satisfaction that the product affords the needs and wants of a consumer (Kalafatis et al.. 1999). Contemporary theories, on the other hand, present a worldview that customer decision-making behaviour in purchasing a product or a brand is guided by many factors, including environmental, social and psychological factors, as well as leaning (Malik and Singhal, 2017). Social factors, particularly family and friends, play a major role in defining consumer behaviour. The purchase and consumption of a cosmetic brand or product line is, according to these modern theories, influenced by inter-group interactions between friends. The use of peers and children in marketing and advertisement

of cosmetic products actuates the postulations of marketing models, such as a family decision-making model and the theories behind family buying. Below is an in-depth review highlighting on influence of social factors on customer decision and buying behaviours.



Picture 1. A Model of Buyer Behaviour (John, 2011).

DETERMINANTS OF CUSTOMER BEHAVIOUR

CULTURAL FACTORS

Among other elements which impact on whether a consumer decides to purchase a product, include observations, values, or wishes that originate from friends and family members. Armstrong et al., (2015), indicate that marketers should be extremely cautious when designing a marketing campaign since culture strongly influences the decision of a consumer to purchase different products, for instance, cosmetic brands. In African families, for example, the influence of male dominancy decision-making is evident. This case is a somewhat different in Western cultures, where both male and female consumers in family scenarios make purchasing decisions impartially (Zhang and Kim 2013). More importantly, according to Goh et al., (2013), marketers keep a keen eye on cultural dynamics, which affords a potential chance to launch new products and capture untapped opportunities. Social class informs unique consumer behaviour among groups of people who share diverse similarities, for instance, in terms of education, wealth, income, occupation, power and prestige. Consumers under this group usually purchase similar cosmetic products or brands, as they share almost the same values. Kaur (2013) observes that marketers show their interest in social class as it proves an easy and profitable task to launch a uniform marketing program that targets the whole social class.

ECONOMIC FACTORS

Economic factors also determine customer decision behaviour. For instance, the financial ability of a customer will determine what he or she purchases. In the case where one is financially stable, one will opt for expensive beauty products because they are in a position to purchase them with ease. On the other hand, a customer with low level of income will opt to purchase cheap

products because they can afford to pay for such products with ease (Kaur, 2013).

SOCIAL FACTORS

Jansson (2010) explains that friends, family members, their roles and status, are some of the social factors that significantly influence the decisions of consumers to purchase a product or brand. When a family member uses a cosmetic product and receives high quality results, other members of the family are likely to purchase a similar product. In relation to friends, church leaders, schoolmates, distinguished persons, among others, they also play a big role in the customer behaviour of people they know (Howard 2013). Secondly, family, as an example of a source of information, forms the basic influential unit towards consumer behaviour. According to Durmaz (2014), families set patterns of values, attitudes, and behaviours that influence purchasing decisions among its members. For instance, in most families, the male or female adults set consumption patterns for most products. Consumers may also consider a cosmetic product considering the role and status of people who use a particular product (Carrington et al., 2014).

PSYCHOLOGICAL FACTORS

Psychological elements, such as individual perceptions, beliefs and attitude, learning and motivation significantly influence the consumer behaviour and decision to purchase a product (Bagozzi et al., 2002). According to Bagozzi et al., (2002), some psychological needs such as recognition, belonging and esteem may intensify and motivate a consumer to be satisfied by a product they purchase. Theories of motivation of the human mind, such as Freud's theory of motivation, best explain the psychological needs of an individual consumer (Foxall, 2014). Freud's theory provides that the behaviour of an individual changes unconsciously with psychological pressures (McGuire, 2012).

Although an individual is motivated to act on the fulfilment of his/her needs, the action varies from one person to another, based on their perceptions (Dweck, 2013). The variation in the perceptions of consumers on a single product/brand or stimuli is grounded on three distinct perceptual processes, namely selective attention, distortion, and retention (Taormina and Gao, 2013). Under selective attention processes, an individual narrows his/her focus onto a small number of stimulus (Hajli 2014). Other psychological aspects that define the behaviours and decisions of customers to purchase a product or brand include learning, beliefs and attitude (Wang and He, 2014).

PRE AND POST PURCHASE BEHAVIOUR

A customer's decision to buy a product is a continuous process of interaction involving behavioural factors and environmental factors. The process of customer behaviour consists of pre-purchase information as well as

post purchase results. Pre-purchase behaviour entails recognition of a need and then proceeding to search for information on a cosmetic product of their interest. The customer will gather information on product variation, product brand, alternatives of the product and quality of a product (Dweck, 2013). The search of information from various sources will depend on the education level of the customer, acceptance and price of the product, age, risk and gender.

Second, is the on-going activity where the customer searches information for a period before they come into conclusion on the type of product they will purchase (Allegra et al., 2012). The third search of information activity is the incidental activity. In this activity, the customer receives information incidentally or naturally from unexpected sources. The incidental source of information may be form external sources or internal sources. Internal sources are within an individual whereby the customer recalls a product they may have used in the past which was not in mind at the time they started the search of information. This may be helpful to the consumer because they know what outcome they will get from purchasing a product they have used in the past. The external sources of incidental activity include any interaction with people and then incidentally talking about a cosmetic product that was being researched a customer. Other external sources may include advertisements, marketing personnel, friend and family members (Ramanuj, 2010). Post-purchase behaviour involves all experiences and activities that take place after one has purchased a product of interest. After purchasing a cosmetic product, customers may have different experiences. They may be satisfied by the product or regret purchasing that particular cosmetic product (Sadia, 2018).

CUSTOMER DECISION BEHAVIOUR

Customer purchasing behaviour is a process entailing the development of a decision in making a market transaction prior to, during and after a procurement of a product or service (Yang and Carmon, 2010). It surrounds the precincts of cost-benefits analysis vis-à-vis the available alternatives. In order to acquire a product, a customer decision-making process entails five key stages normally. Prior to a purchase, a consumer recognizes the need of a product, collects information regarding that product, appraises various available product alternatives, and finally makes the decision (Noble et al., 2009). However, Coulter et al., (2003) assert that in a routine purchase of a single product, a consumer can always skip some stages in the usual decision-making processes. The Pictures 3 and 4 below model the definitions of decision-making process leading to the purchase of a product.

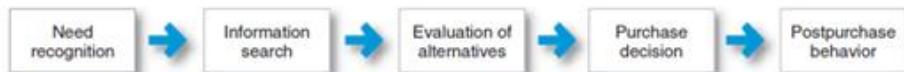
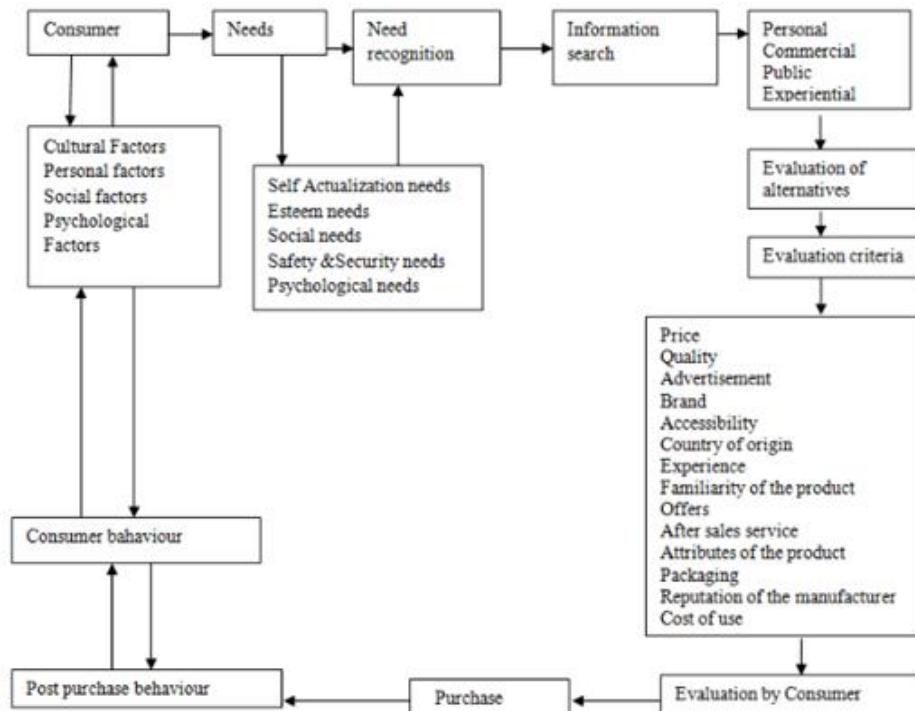


Figure 1. Decision-making process of a consumer

Picture 2. A Model for Consumer Decision Process Behaviour

Source: Armstrong et al. 2015



Picture 3. A Conceptual Model for Consumer Behaviour and Purchase Decision Process

Source: Khan, 2007

The decision of a customer to purchase a product normally begins with the recognition of a need which needs to be satisfied (Khan, 2007). According to Khan (2007), such needs can surface with the existence of both internal and external stimuli. Among the internal stimuli, include emotional factors and basic needs, while the external stimuli may encompass factors that affect the mood of a potential customer, which are aroused by advertisements from mass media, or following interpersonal interaction with peers or family members (Choi, 2014).

Hence, marketers strive in designing advertisements of their products and product lines by defining stimuli for needs recognition (Yoon et al., 2012).

Information search is another crucial step when a customer is in the process of making a purchase decision, and which elaborates whether the product is best fit in satisfying the customer needs (Carlton 2014). It entails evaluation of the endogenous and exogenous business conditions of the product in search for information delimited to the buying decision (Wang et al. 2014). Depending on the magnitude of need, desire and availability of the product, customers overlook the stage of information searching and purchase the product or brand instantly (Dewey, 2007). On the other hand, customers gather relevant product information from friends particularly, work-mates, neighbours, family members and friends with whom they frequently interact. In many instances, the marketers control customer stimuli (Coulter et al., 2003). Marchington and Wilkinson (2008) suggest that a marketing message should be designed such that it captures the interest of customers regarding product validity and effectiveness in satisfying their needs. According to Keller and Kotler (2009), one can understand the intensity of product liking based on customer interest of that product with respect to its ability to satisfy customer needs. Further, it is required for a company to continue displaying promotion messages on the effectiveness of a product to attract and create positive attitudes towards the product (Freeman et al., 2007). The decision to purchase the product is defined by customer needs and intentions following search of appropriate information and alternatives from friends and family. Finally, future repeat purchasing is linked to how excellent the product quality and experience with the product has been in meeting customer expectations (Zhang, 2008).

FAMILY DECISION-MAKING

As identified above in the customer decision behaviour model, the decision-maker in a family with regard to buying of a product is important. Equally, the process of purchase decision-making in a family entails recognition of a need, searching for product information, assessment of quality and alternatives, and buying capability of the product (Rossiter and Bellman, 2005). The culminating decision is influenced by the 4Ps encapsulated in product marketing mix of the available product (Blythe, 2008). The manner in which a decision-maker in a family defines a purchase decision influences the way other family members perceive the purchase of the product or related products (Kotler et al., 2009).

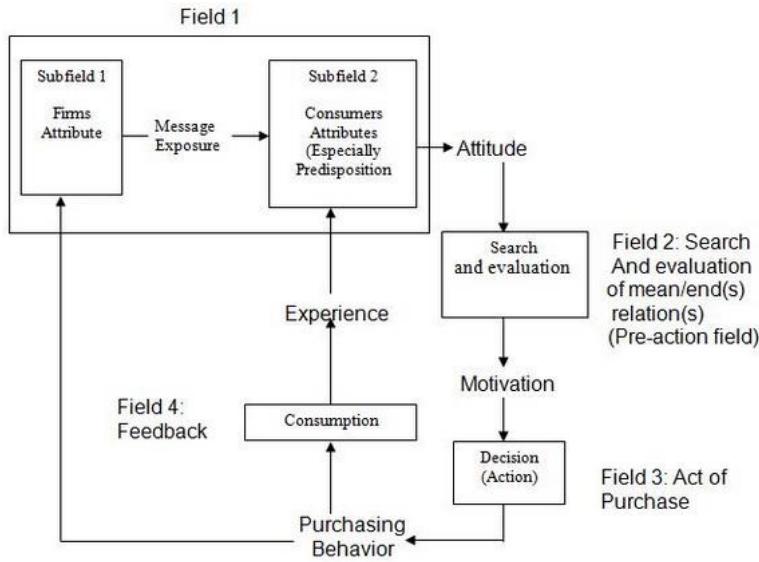
In many cases, family decision-makers are the sources of financial input towards the purchase of products and services consumed in a family. They endeavour an information search prior to making a purchase, and assess the cost and benefits accrued to the family on deciding to buy (Blythe, 2008). Evaluating the prevailing information in the market and a final decision to buy is embedded on the available income from the family to allow implementation of the decision

(Blythe, 2008). Moreover, the behaviour of the family post-purchase may influence loyalty regarding future purchases. Income level and capacity to support a purchasing decision is a major factor influencing a family's decision-making process (Foxall, 2005). Even if the quality of a product meets a family's need, it is income which dictates the final decision, and hence impacts on family decision behaviour and buying behaviour in the procurement of products and services (Rossiter et al., 2005).

NICOSIA MODEL OF CUSTOMER MOTIVATION AND BEHAVIOUR

The Nicosia model explains the link between potential customers and product marketers. It defines the communication from marketers to customers via marketing approaches, such as advertisements, and back to marketers via purchasing responses (Khan, 2007). The Nicosia model, therefore, exhibits the influence of marketers on customers, and the interaction between the two entities in the buying process. According to this model, messages that come from product marketers initially stimulate the need in the customer towards the product or brand (Milner and Rosenstreich, 2013). Depending on the prevailing situation, a customer will show a certain attitude towards the product (Brythe, 2008).

This model offers four basic fields that best explain customer buying behaviour in making purchasing decisions. The first field is specified into two sub-areas: attributes of the customer and attributes of the marketing firm (Khan, 2007). Dependent on the route taken, the customer receives the ad message detailing particular product attributes, which define the characteristics of the second field. The first subfield highlights the communication efforts and marketing environment influencing customer buying and decision behaviours, such as product characteristics, customer attitudes, competition environment, attributes of the targeted market, and attributes of apposite mass media. The second subfield, on the other hand, defines customer characteristics, particularly promotional messages from marketers and customer personality experiences. According to Milner et al., (2013), the second field in the model represents the search and evaluation of the advertised brand or product that the customer is interested in, and assesses the available substitutes. If the presented product information and evaluation motivates the customer to purchase the product or brand, it forms the input in the subsequent field as shown in the model Picture below.



Picture 4. Nicosia Model of Consumer Motivation and Behaviour

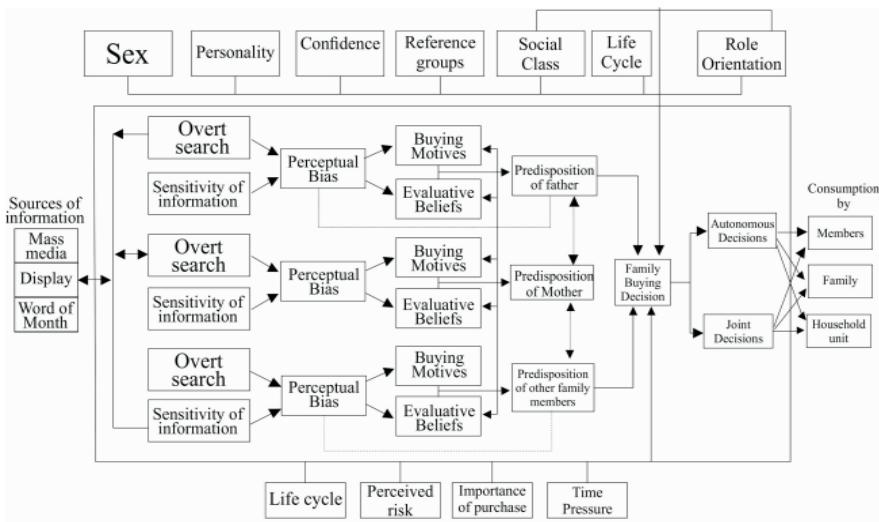
Source: Prasad, 2009

In the third field, the customer purchases the product or brand in actuality. The fourth field, which forms the last section of the model relates to the utilization of the product that the customer purchases. Thus, it acts as an output to collect responses regarding the trade outcomes to the marketer (Milner et al., 2013). Several external variables influencing customer decision behaviour have been identified but not included in the Nicosia model. These factors include time pressure, customer personality traits, significance of the purchase, and financial status, a crucial consideration in family decision-making model. Exogenous variables affect product segmentation, including the customer decision behaviour of individual family members.

SHETH FAMILY DECISION-MAKING MODEL

The Sheth family decision-making model explicates the purchasing decision process within a family. The left aspect of the model deliberates on psychological factors which impact on customer decision behaviour of individual family members, while the right aspect depicts influential factors that define lifestyle, social class, role orientation, family life cycle and significance of perceived product risk (Prakash, 2017). These elements wield influence on the purchasing decision process of a family. In addition, the model asserts that a joint decision making process is more rooted in middle class families and young married couples, as well as families with limited roles. Individual family

members present with divergent buying motives, which assert different roles when a family is making a purchase decision.



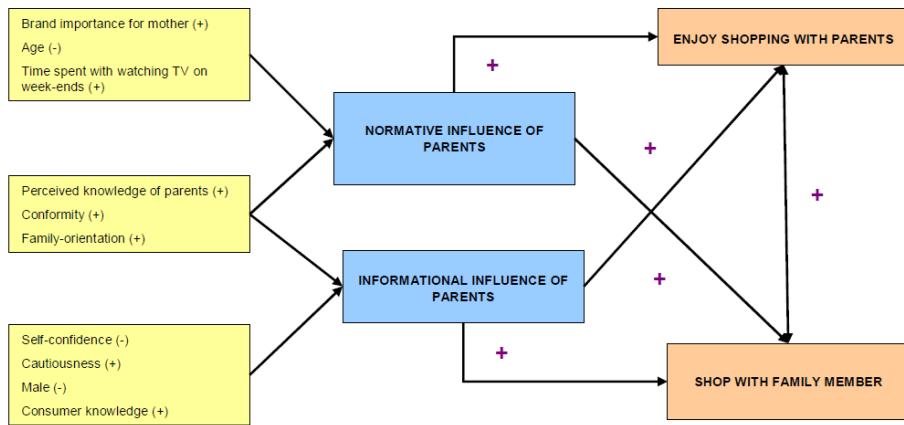
Picture 5. Sheth Family Decision-Making Model

Source: Prakash, 2017

A distinct psychological system detailing particular predispositions of different members of a family unity, leads to a family buying decision. The development of a decision may be autonomously derived or jointly determined by coalescing individual predispositions (Rogers, 2003; Prakash, 2017). In the event of a purchase of household items, a family car, a house, including consumer durable products, the resulting purchase decision is most likely a joint decision. The model put forward that decision-making in a family is more complex as compared to individual decisions since many players are involved, and there is a need to assign decision roles to multi-parties and resolve to a common purchase decision (Rogers, 2003).

Influence of Family Members on Cosmetics Buying

In addition to the role of family and friends in influencing opinions, attitudes, beliefs and behaviours, they constitute a source of inspiration while functioning as role models. Marketers target friends based on their influence on interpretations to product information and the decision to purchase.



Picture 7. A Conceptual Model of Relationship between Buying Decisions and the Influence of Parents as Examples of influencers in buying decision-making

Source: Sadia, 2018

Family and friends form an essential part of marketing communication (Hawkins and Mothersbaugh, 2007). Currently, marketing research progressively recognizes the influence of children on several family buying choices. With this knowledge, corporate marketers realize that children are able to shape some purchasing demands in their families, particularly on parents. According to Bearden and Etzel (1982), customers will only accept a product or brand that does not conflict the behaviour pattern of their friends, since friend and family members form the basis of communication of product knowledge among other peers.

Coulter et al., (2003) postulates that, other than cultural influences, friends and family have either direct or indirect impact on the purchasing decision-making process of an individual customer when buying cosmetic products or brands. Since families form a primary source of information, it becomes the most influential factor with respect to customer decision behaviour. Family members directly influence purchasing decisions of an individual through introduction of new appealing product information or behaviours and styles that influence the self-image and attitudes of potential customer (Bearden et al., 1982). Equally, family members may create pressure aimed at influencing the product or brand buying choices. Conversely, Widing et al., (2003) argues that the influence from family members as a formal source of reliable information on cosmetic products is only limited, since a customer only purchases cosmetic products or brands to satisfy their needs.

In another study, Wilson and MacGillivray (2009) state that most parents shape the consumption pattern of their children, as they remain rigid in their financial decisions. Since parents are the primary decision makers, Wilson et al., (2009) purports that when children are the users of cosmetic products or brands, where buying decision is because of the experiences of their parents. In support of this observation, Rani (2014) provides that many cosmetic firms are increasingly interested in the influence of family members on buying behaviour of their customers considering that mothers are ideal models as influencers stimulating desire in children to purchase cosmetics, such as toothpastes and deodorants, among other personal care products. Ali (2016) confirms that cosmetic companies manipulate kids, through advertisements, to influence their parents deliberately to buy some cosmetic products. Teenagers are a group of individuals with diverse needs for beauty embedded on the need for a sense for belonging, independence, responsibility, and approval. According to Ali (2016), all the needs of teenage children are motivated by increased experimentation. Increased appetite for shopping in families with teenage children is characterized by a large budget on cosmetic products, such as facial makeup, soaps and detergents, colognes and fragrances, among other personal care products (Hawkins et al., 2007).

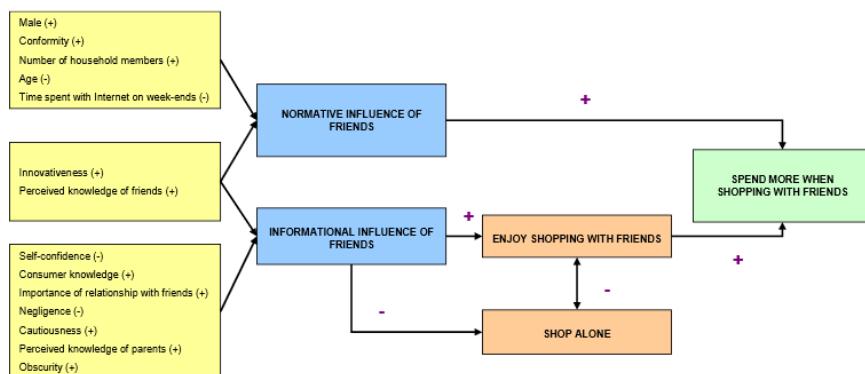
Additionally, Groeger and Buttle (2014) appreciate the power of mouth-to-mouth information dissemination, as it is the basic influential means of advertisement within a family set up. Continuous reminder via a word-of-mouth is an impulsive communication between family members, particularly in the consumption of a cosmetic product or product line. As much as the family members consume a certain cosmetic product or brand, they are more likely to communicate their experiences with a particular product. Shared experiences depend on the enthusiasm of a user, and individual taste and preference, which guide the purchase decision for cosmetic products or brands (Groeger et al., 2014).

INFLUENCES OF FRIENDS ON COSMETICS BUYING

According to Mascarenhas and Higby (2013), friends are a source of information among themselves for evaluation and correction of their own behaviour, attitude or beliefs. Consequently, these scholars believe that friends act in a way that significantly influences their purchasing behaviour as well. Mascarenhas et al., (2013) further states that a number of people belong to different groups and aim at belonging to several other groups. To justify this observation, friends perform an essential role in determining consumers purchasing behaviour with regard to cosmetic product or brand choice. The influence of friends on an individual's purchasing decisions entirely depends on three key factors namely, an individual's attitude towards his/her friends, the nature of the cosmetic product in market, and the nature of friends. Moreover, according to Villeneuve and Pasquier (2017), it is natural for an individual

consumer to relate attitude with his/her peers in order to decide on the most favourable cosmetic product to purchase.

Friends have influenced the purchasing behaviour of their fellows through online referrals. Although media has played a great role of associating customers with cosmetic brands, friends, through online reviews, blogs, or online chats on Facebook, WhatsApp and YouTube, among other social platforms, exchange rich information, advice or ideas concerning cosmetic products and brands, thus, influencing consumer purchasing opinions (Niu, 2013). Online platforms offer a prevalent social environment in which customers interrelate by swapping information, ideas and advice concerning their shared interests (Anderson et al., 2014). Friends influence their fellows through sharing their opinions concerning their recent online experiences with regard to purchases of cosmetic products, as well as information regarding newly introduced brands, which may be outdoing the existing brands in terms of quality and better prices as illustrated in the Picture below.



Picture 8. A Model Depicting the Relationship between Buying Attitudes and Influence of Friends

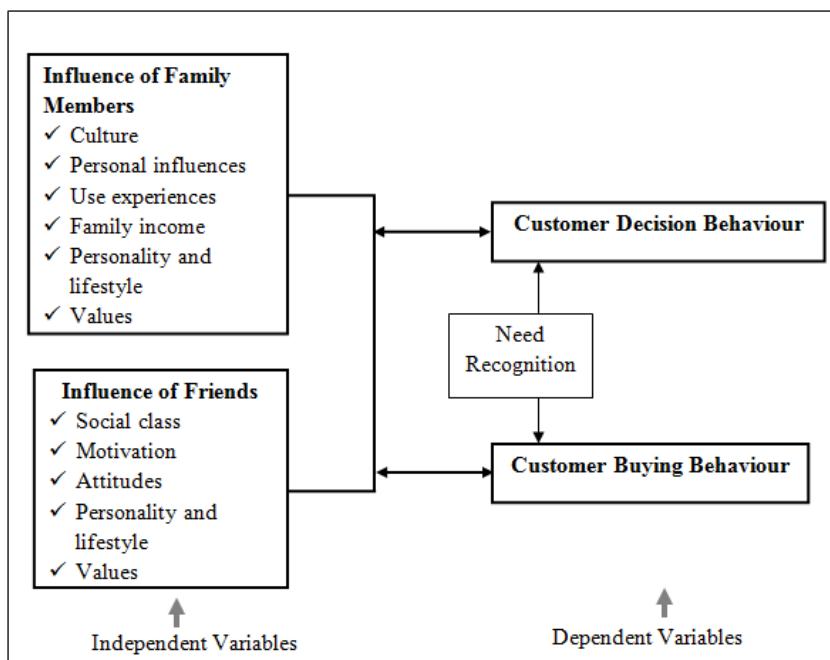
Source: Sadia, 2018

Sivanesan (2014) confirms that a survey which included randomly selected US nationals conducted in 2013 indicates that 54.7% of peers learn about cosmetic brands from their friends who refer them to company websites instead of other means of advertisements. According to the survey, at least 75% of the respondents hinted that they would embrace company websites in accessing newly introduced cosmetic brands. Additionally, Shallu and Gupta (2013) observed that a higher number of consumers who view cosmetic brands online promote the sales of cosmetic products through internalizing the knowledge,

thus, satisfied online viewers are more likely to re-view the website and further recommend it to their friends, parents, or any other member of their families. However, Mortimer and Pressey (2013) depict that friends influence purchasing behaviour of their peers based on social status, including purchasing cosmetic products or brands with the intention of showing off their social class.

CONCEPTUAL FRAMEWORK

A conceptual framework defines a visual illustration of observational and analytical perspectives that the study process takes (Bogdan and Biklen, 2007). With respect to this study, the conceptual framework explains the hypothesized link between the study variables, and at the same time as proving the hypothesis and answering identified study questions. In particular, it delineates possible explanation to the study phenomena in comparison with the abstract model stipulated in the research questions (Smyth, 2004). The below Picture is the conceptual framework used in this study defining the operationalization of variables, and the distinctive relationship of how independent variables are impact on the dependent variables.



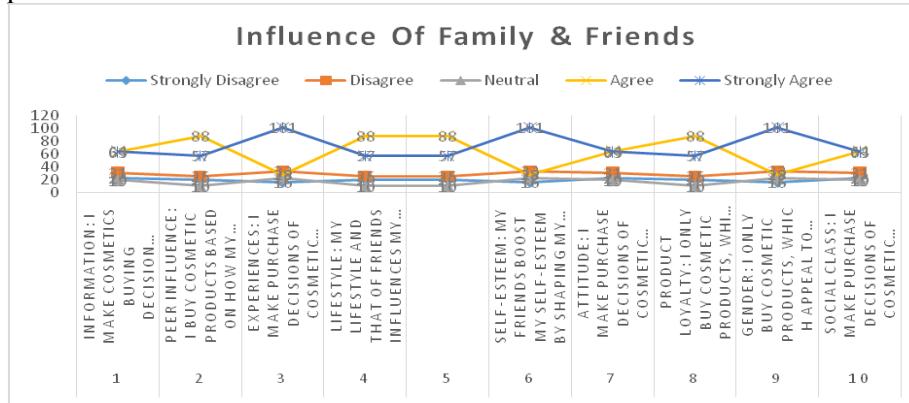
Picture 9. A Conceptual Model Showing Operationalization of Variables

Source: Zhang, Kim, 2013

As shown in the Picture above, different attributes of family members and friends impact on decision and buying behaviours during interpersonal interactions following a need recognition to make a purchase of a cosmetic product. In this study, need recognition and purchase decision are stimulated by external environment with the help of marketers.

METHODOLOGY & RESULTS

This study aimed to critically analyse the influence of friends and family on customer decision behaviour and customer buying behaviour in the purchase of cosmetic products. Using a quantitative study design, the investigator carried out a survey via questionnaires on 258 participants to collect raw data on social factors linked to family or friends influencing decision and buying behaviour of cosmetic products. Quantitative data analysis was performed to establish descriptive statistics and regression analysis of the findings, which established that conventional audio-visual advertisements, social media advertisements and word of mouth advertisements are primary sources of information on cosmetic products. Additionally, there was a direct link on the influence of social factors aligned to family and/or friends on decision and buying behaviour of cosmetic products. Lastly, individual experiences with a product define the pre and post purchase behaviour, including whether to recommend a product for or against purchase.



Picture 10. Influence of Family & Friends

The study has established that information on cosmetic products is acquired from various sources, including conventional audio-visual advertisements, social media, and word of mouth advertising. Effective communication is crucial in the business world by facilitating marketing of products and services, especially by combining audio and visual aids. Audio

-visual advertisements include advertisements propagated via visual aids and an audio storyline. Advances in ICT have transformed the business world to

revolutionize it to use new advertisements mode. Many people depend on this mode of advertisement, particularly through TV sets, radios, banners and electronic billboards to get information on products for social consumption. While comparative friends include individuals, defining relative attributes to compare one-self, normative friends directly affect attitudes, norms, morals, values, and decisions of an individual directly through interpersonal interactions. The parent informs a child of the right food to eat, dressing style and the right way to behave. Conversely, depending on the type of decision influence, friends to the same child fall under both comparative and normative categories. Bagozzi (2007) purports that children find satisfaction in contending with lifestyles, behaviours, or traditions that they believe are admirable.

In the corporate world, however, both the normative and comparative friends are significant and interdependent. Whereas the former define the basic standards of behaviour with regards to decisions to purchase products, the latter depends on the influence of normative friends in defining the specific brand a customer purchases (Perna, 2000). The influence of parents, as examples of advisers on cosmetic products, are relevant for marketers as they influence decisions of consumers by conveying to them product or brand information. Thus, firms use family members and/or friends to manipulate product purchase decisions of a customer through advertisement messages.

CONCLUSION

There are significant evidences here to suggest that peers do influence the buying behaviours of consumers. However, it is worth noting that cosmetic products, unlike other goods, are such products whose information is readily available, with elicitation of the simplicity of methods of application, and anticipated outcomes – therefore, for companies to capitalise on and generate sales through family and peers, they will have to re-adjust their marketing strategies. Apart from peers` influence, among others, firms could take advantage of the use of audio-visual advertising messaging which are highly effective in facilitating decision-making and enthusing buying behaviour in first-timer customers. Unilever Global has taken an initiative to invest on audio-visual advertisements, particularly over televisions and electronic billboards. Their design and contained message is to directly target children. An example is the use of school-going children to advertise hand wash detergents, and use of young female adults in the advertisement of body lotion and moisturizer. In addition, Unilever uses marketing messages to stimulate customer decision and buying behaviour by informing customers of novel innovations in their products and the benefits of using their products, for instance, the marketing campaigns launched to sell Dove by redefining beauty stereotypes. The future research should seek to highlight the new e-Wom platforms and how they impact on firms` marketing approaches.

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ANALYTICAL APPROACH TO BUSINESS INTELLIGENCE THROUGH MARKETING MIX MARKETING MARKETING INTELLIGENCE

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ABSTRACT

Survival, success and performance of the company depend on the quality of sensors of perception, sensitivity and agile management of responsible managers. For example, it is impossible to drive Formula 1 with a car that is tested and repaired with one tool. A definite need for a blend of intelligence is whether it is immediate, such as speed per circle and coverage of the circles or less immediate, such as position, how many rounds of the race, and how much fuel is needed to the end. Big Data analysis is accepted as a technology that will transform the analytical approach to BI - Business Intelligence as information support for better decision making. Big Data analysis is being explored, but this time through the objective of the marketing mix framework. Namely, the marketing function through the so-called marketing intelligence approach emphasizes the marketing of BI domains by formulating data relating to the market in which companies operate and make decisions. The business and marketing intelligence relationship is clearly direct and significant. MI has traditionally relied on market research to understand customer behaviour changes and improve the design and characteristics of products and services. In this way, sources of data, methods and applications are crystallized in relation to five important marketing perspectives. The goal of the paper is to determine the future directions in the field of data analysis and marketing related to business intelligence and generate a huge amount of data much faster than ever before using mobile and Cloud, after defining the starting elements and concepts, BI solutions - Cloud Business Intelligence. Specific advantages but also the vulnerabilities of BI on the cloud, as well as applications from the BI arsenal, emphasize the dominant feature of Big Data in relation to marketing mix perspectives and maintaining an intelligent marketing function.

Key words: Big Data, Marketing Mix And Intelligence, Mobile Bi, Cloud Bi

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THE POINT AND ROLE OF BIG DATA IN THE CONTEXT OF BUSINESS AND MARKETING INTELIGENCE

Information and reliable data are the basis for making any decision by the management. Also, information forms the basis of the process of diagnostics and forecasts of managers. If the marketing function is a point of view, business problems can be expected, identified, analysed and resolved or prevented if accurate and reliable, relevant information can be quickly obtained from internal and external sources. This dominant significance of the information that produces marketing activities is so obvious that any quality marketing manager or CEO makes intentional and sustained efforts to generate, analyse, and use reliable information related to the marketing function of the company.

The market environment changes dynamically, so the need for intelligent and real-time information has never been more urgent. Changes have been frequent, from local to national and global levels of marketing, from customers where it is necessary to accept wishes, to monitor the behaviour of all participants, from price to non-price competition. As companies expand their geographic coverage in the market, executives require more information even faster, and revenues encourage customers to become more selective in choosing goods and services. In order to anticipate customers' responses to different design, style and other product attributes, the seller must rely on marketing intelligence. How sellers increase the use of branding, product differentiation, advertising and sales promotion, and therefore require adequate information on the effectiveness of these marketing tools.

The main problem for managers today is to manage the changes and complexity that arise from the company's interaction with the turbulent market environment. However, today it is imperative for managers to be far more sensitive to the current changes in the business environment. It is critical that marketing managers, marketing researchers and other employees in the organization understand well how the market environment is changing. Arousal and environmental sensitivity are very important elements of business success, survival and long-term business, due to the dependence of the company through input resources and services.

Successful companies take into account the external aspect of their business. They recognize that the marketing environment is constantly presenting new opportunities and threats that can be detected, generated, analysed and used with the implementation of marketing intelligence, and should also insist on the importance of continuous monitoring and adaptation to the environment itself. Many organizations do not see changes as an opportunity, ignore them, or oppose it while it's not too late. Their strategies, structures, systems and organizational cultures are becoming increasingly obsolete and dysfunctional in the contemporary environment.

The need for marketing information regarding the organization's market environment must emphasize a better understanding of marketing intelligence as well as an understanding of the concept of a marketing information system. However, marketing information systems, the concept of marketing intelligence and marketing research systems are used to collect and analyse data for different marketing plan segments. In particular, the business intelligence aspect of the Big Data platform enhances marketing activities through the marketing mix.

Big Data analysis is accepted as a technology that will transform business intelligence (BI - Business Intelligence), whose domain relies on analytics of data that obtains information support for better decision making. Through the work, the Big Data analysis of data through the elements of the marketing mix is being explored. Data sources, methods and applications are identified in relation to five important marketing perspectives, that is, in relation to people, products, places, prices and promotions, which set the foundation for a new approach called Marketing Intelligence (MI). The MI concept connects with the strategic aspect of the planning process and defines it as "an intelligence that ensures that the company is one step ahead of the competition by collecting information that could be converted into usable intelligent data and which can then be applied to both short and long-term strategic planning." After defining the starting elements and concepts, several challenging research related to issues and future directions of research in the field of data analysis and marketing related to business intelligence, in general, are considered.

Technological revolutions such as, among others, social media that have recently reached their full potential, allow us to generate a huge amount of data much faster than ever before. The notion of Big Data analysis and its applications in business intelligence has caused enormous interest in recent years due to the great potential in creating business results and competitive advantages. Big Data is defined as "the amount of data that exceeds the ability to apply technology ensures efficient storage, management and processing." Also, the term can be characterized through three important dimensions, namely, quantity, speed, and diversity. Business executives sometimes ask: Are not Big Data just another way to say information analysis?

In fact, there is a connection: a large amount of data, like analytics before it, tries to generate intelligence from data and translate it into a competitive advantage. As for the volume of data as the dimension that bundles Big Data, by 2012, 2.5 Exabyte (1EB = 1 billion gigabytes) of data are created each day, and this number is doubled every 40 months or more. Today, more data is generated every second than it was on the Internet just 20 years ago. This production and distribution of data gives companies the opportunity to process data of the petabytes size (1PB = 1 million gigabytes) in only one dataset in their databases - and still online. For example, it is estimated that the Walmart chain collects more than 2.5 petabytes of data per hour from its transactions that it loots with service users. Petabyte is one quadrillion bytes, or equivalent to about 20

million digital memories expressed in the text. When the speed is concerned. For many applications, the speed of data creation is even more important than some other performance. Information created in real time or in real time allows the company to be much more agile than its competitors.

For example, a survey conducted by Alec Sandy of Peatland and his group at MIT Media Lab showed that by using location data that smart mobile phones generate to find out how many people were at parking spots, the Macy Black Friday - at the beginning of Christmas buying season in the United States. These customer location information made it possible to estimate sales of retail stores on that critical day, even before Macy Company itself recorded sales in its facilities. The data transmitted in information formed in such fast conditions can provide obvious competitive advantage to analysts from Wall Street and Main Street managers. The latest dimension of Big Data analysis is related to diversity. Big Data takes the form of messages, software updates and images uploaded to social networks; application for reading sensors; GPS signals from mobile phones and more. Many of the most important sources of Big Data are relatively recent, some are very new. For example, huge amounts of information formed on social networks are the same as "old" as the networks themselves.

Namely, the Facebook social network was launched in 2004, Twitter in 2006, these are relatively new sources of information compared to databases dating back to the 80s, 90s of the last century. The same goes for smartphones and other mobile devices that now provide enormous data flows for people, activities and locations. Since these devices are essential because they are present in everyday life, it's easy to forget the fact that the iPhone smartphone was discovered just five years ago, and the iPad's portable tablet device in 2010. In this regard, structural databases, archives that have kept many confidential corporate information up to a few years ago are no longer suitable for the storage and processing of Big Data. At the same time, the constantly declining costs of all information and computer system elements, memory, processing, bandwidth and so on - shows the fact that previously expensive approaches related to intensive processing and data usage are fast becoming more economical.

How the trend of digitalization of business activities, the emergence of new sources of information and the ever-cheaper equipment for processing large amounts of data is driving us to the path of a new era, an era where there is a large amount of information in digital form, practically every topic of interest for business. Mobile phones, online shopping, social networking, electronic communications, GPS and instrumented architecture, produce a strong and fast process of data formation as a by-products of everyday business. Anyone who uses these devices, channels and instruments is part of the flow and distribution of data. The available data are often unstructured - unorganized and accumulated in the formed database, but there is a huge amount of usable signals and indicators just waiting to be used. Systematic computer analysis of

data or statistics has brought rigorous decision making techniques; Big Data is simpler and more powerful. As Peter Nerving, director of Google's research department, says: "We do not have better algorithms. We just have more data".

Whether there is a difference between business intelligence and marketing intelligence, of course, there is, when we see what is happening on the market, it means full insight into the interior in terms of what competitors are doing, how the market works, what clients demand and expect. With business intelligence, it is obviously crucial that we, as a company, work with information, the way we interpret them as users, to make decisions at the strategic level.

If you want to understand better and the interior of the market, marketing intelligence defines much more specifically the specific market aspect of the business, since it is considered strategically a whole range of activities of a company, it is inevitable to apply the concept of business intelligence through tools and applications of information use in a strategic sense. The strategic dimension of business intelligence creates the right marketing intelligence based on a thorough understanding of the company's market and this is certainly a close relationship, but a key clue is intelligence. Essentially, an IT tool can be used to develop these types of intelligence in the company, but this is not necessarily in itself, business intelligence is a much wider and more complex phenomenon than the need for IT implementation in the decision-making process. Intelligence in the company is a human process or a cultural approach. It is mostly the most important human process of understanding what is happening in the company's business, this human process of understanding what is happening in the environment, internally and externally, to understand what it actually means for a company, what are the resources needed to carry on it data processing, understanding of information and use at the strategic level. This requires a special team because it is a job where every human task must involve the human mind and produce this intelligence. Since the introduction of the marketing concept for business purposes, the consumer has in the foreground taken over the strategic plans and activities of the company. The need for satisfying consumer demands covered a whole range of business and investment activities. It has encouraged acquisitions and mergers, restructuring and removal and innovation in products, services and production processes. This strategy was effective in the early stages of the life cycle of the industry.

However, in the moments of the recent date stagnation is in many industries, and turbulence in the market is a permanent feature of the modern market environment. Trends and fashion are changing faster than ever before. A survival strategy is the flexibility that implies the ability of the organization to adapt itself again in a very short period of time. In addition, since many companies, if not all, are aware of the need for flexibility, a successful company must achieve agility in the market as quickly, much better and cheaper than its competitors. The business environment is extremely dynamic, unstable and uncertain. The challenge of companies is to continuously engage in new

opportunities and transformation of goals, skills, resources and opportunities in order to create competitive opportunities and gain an advantage. Organizations must focus on long-term results, but they must act in a short time to ensure their future survival and yet a successful outcome. Therefore, the exploitation of key competencies of the company is very important in the modern business arena. The company achieves key competences by investing in complex improvement systems and business performance concepts, thus investing in intelligent ways of achieving competitive advantage. In the given context, the survival, success and performance of the company depend on the quality of sensors of perception, sensitivity and better management of responsible executives. For example, it is impossible to drive Formula 1 with a car that is tested and repaired with one tool. There is a definite need for a blend of intelligence whether it is immediate, such as speed per circle and coverage of the circles or less immediate, such as position, how many circuits is and how much fuel is needed to the end. Moreover, it is important to even have an idea of the weather forecast: if the rain is inevitable, any lost time when changing tires is important for the final position at the target. The company is no less sensitive and different from the descriptive example of Formula 1 car because it works in what is certainly a hostile environment. That's why the company should timely compile an adequate mix of intelligent data to improve its performance. This will ensure that information is received at the right time, as there is a risk that until the moment the company becomes aware of the lack of information, it may be too late. In this way, senior managers in charge of managing the company are looking for real intelligence at the right time.

Without intelligent procedures, where data and later information are viewed through a prism of significant critical and competent tools, executives drive the company as if they were blind. In a large number of companies, the available data is old and incomplete and all decisions are currently made and implemented using incomplete and outdated data. The decision-making process at the strategic level is not an easy task, because there is much to think about and many factors can influence the decision-making process, such as competitors and what they do, the volume of marketing sales, etc. Business intelligence is about making the right decisions based on the right factors and giving managers a new perspective on the capabilities and government. The Business Intelligence System provides a complete insight into all information that can affect business and pulls out of the grey area with smart and clear reports to accelerate the decision-making process, especially in marketing. In marketing intelligence, which emphasizes the marketing aspects of business intelligence, information relating to the company's markets is collected and processed in the form of information providing information support for decision-making. Marketing intelligence has traditionally relied on market research to understand consumer behaviour changes and improve product design and product characteristics. For example, companies use customer satisfaction surveys to examine customer opinions. With large analytical data

technologies, key factors for strategic marketing decisions, such as consumer opinion about the product, service and support, or the company, can be automatically monitored by the so-called process of mining of social networking data.

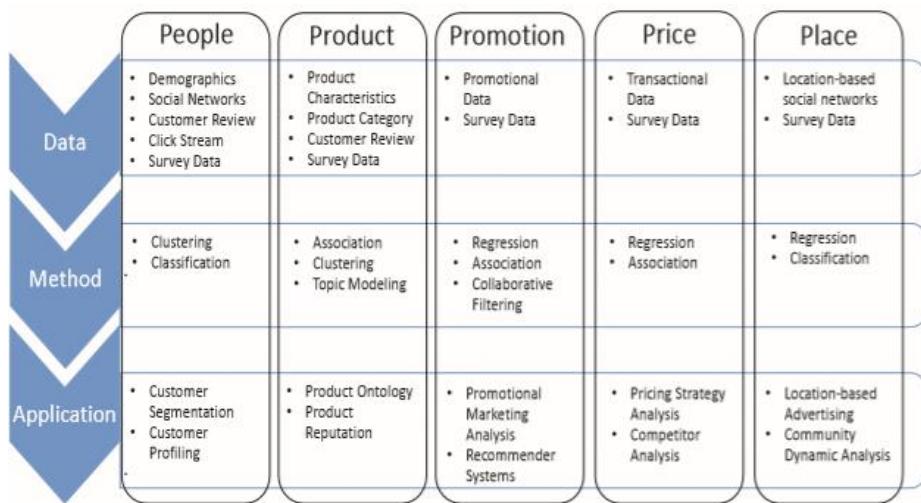
Business intelligence uses methodological tools and data modelling to collect and structure information. It transforms huge databases into useful information that is presented to enable improved marketing decisions that are made internally and externally. Namely, the conceptual basis of business intelligence through marketing activities includes client behaviour, analysis, digital data processing, event and mood analysis, predictive modelling, database content management and text management, and much more. Business intelligence applications generate a large amount of data from consumers and consumer behaviour on social networks and converts them into accessible reports and presentable information sets. It is no longer necessary to manually create milieu of usable complexes with complex data and create reports as they help sellers to address inefficiencies and hidden patterns in marketing activities and discover new opportunities for improvement. Based on an initial understanding of the connectivity of business and marketing channels and intelligence, critical business information resources are generated. Namely, intelligence gives sellers the ability to understand, improve and predict the effectiveness of marketing based on previous preferences and behaviours. However, while accessibility to numerous databases creates unprecedented opportunities for marketing intelligence, it also implies challenges for practitioners and researchers. Big Data analysis mainly relates to three types of challenges: storage, management and data processing. In the case of typical marketing intelligence tasks, such as the process of managing consumers, companies today have many different ways to solve them, namely, collecting data from social networks, transaction data, survey data and other different sources of information. Based on the characteristics of the collected data, various methods for the discovery of marketing intelligence can be applied. The analysis models developed for only one source of data can provide only a limited elemental insight into the observed variables, leading to potentially poor quality and sometimes biased business decisions. In order to solve this problem, the integration of heterogeneous information collected from different sources provides a holistic view of the problem and generates more accurate marketing information. Unfortunately, the integration of Big Data from multiple sources to generate marketing intelligence is not an easy task. This involves research into new methods, applications and frameworks for effective data management in the context of marketing intelligence. The paper examines different marketing intelligence perspectives in order to form a framework for data management in this context. First identify the popular data sources for marketing perspectives of intelligence. Then methods that are suitable for different data sources and marketing perspectives. Finally, examples of applications are given in different perspectives.

CONCEPTUAL MANAGEMENT FRAME OF BIG DATA THROUGH THE DIMENSIONS OF MARKETING MIX

The marketing mix framework is a well-known framework that identifies key components of marketing decisions, where it implements marketing philosophy, research, and practice (McCarthy, 1960). The retired professor, emeritus marketing and Harvard advertising Neil Borden (1964) was recognized as the first to use the term marketing mix and proposed a series of 12 elements. Elements of Marketing mix of manufacturers: 1. Product planning; 2. Price and procedure policies; 3. Policies and procedures for branding; 4. Distribution channels; 5. Personal sales policy and procedures; 6. Advertising policies and procedures; 7. Promotions; 8. Packaging policy and procedures; 9. Display policies and procedures; 10. Service policies and procedures; 11. Physical handling; 12. Finding and analysing the facts (McCarthy, 1964).

McCarthy (1960) points out that "the number of possible marketing strategies is infinite" and (1964) grouped 12 elements of Borden into four elements or 4P, that is, product, price, promotion, and place. Model 4P is considered most relevant to consumer marketing. However, critics point out that this classification of elements is a production-oriented definition of marketing, so researchers propose a fifth P perspective – people (Goi, 2009). The 5P model of marketing mix marketing mix is accepted and includes perspectives that play key roles in the development and impetus of successful marketing strategies of modern business. The paper proposes the conceptual framework of marketing mix for managing Big Data through the business intelligence tool and the development of marketing intelligence (Fan et al., 2015). The field of marketing intelligence research implies five perspectives that are identified with the dimensions of the marketing mix framework. Each perspective identifies common elements and data, methods, and applications that are applied from the arsenal of business intelligence applications, and the emphasis is placed on the dominant feature of Big Data in relation to each perspective (Kaptein et al., 2013). The conceptual framework provides guidance for decision making on a marketing function based on the Big Data analysis.

Picture 1 presents an overview of the proposed Big Data Management Framework in the concept of Marketing Intelligence. First, data from various sources is returned and used to create vital marketing intelligence. Second, a variety of analytical methods are used to convert raw Big Data into usable marketing knowledge, that is, intelligence. Finally, both data and methods combine to support marketing applications in relation to any perspective of the marketing mix model.



Picture 1. "Big data" data management framework in the concept of intelligence marketing

Source: Customized, Fan et al., 2015)

Researchers use different methods for generating data, mostly research, interviews, focus groups, observations, and archives. It is important to emphasize that the methods of data collection differ from the research methods. For example, experiments are a widely used research method in marketing, but researchers rely on surveys, observations, or interviews to collect experimental data. Research and diaries are the two most common methods for forming data for business intelligence (Etherington, 2014). The survey is defined as "collecting information in an organized and methodical way about the characteristics of interest from some or all of the population units using well-defined concepts, methods and procedures, and compiling such information into a useful summary" (Zhao et al., 2014). Companies use data collection surveys for different purposes, such as understanding consumers' preferences and behaviours. For example, Apple sent surveys to customers who recently purchased the iPhone to get feedback on their purchase and their product experience (Kim et al., 2006).

Data template information generates information systems that record transaction logs and user behaviour. For example, Walmart began to research social media data analysis to gain customer opinions about a company or a particular product. Records and research data may vary in terms of size, quality, frequency, objectives, content and processing techniques (Liao et al., (2012).

Data collection methods complement each other in different business contexts. Surveys can be useful when we want to collect data about phenomena that cannot be directly observed. Log data is desirable when real-time conclusions about real user behaviour are needed. That the method can be

combined when we want to study the relationship between user intent and user behaviour. There are advantages and disadvantages for both methods, and it is believed that both methods need to be considered for managing large data.

METHODS

Market intelligence refers to the development of a wider picture and better perception based on data in the decision making process in marketing. Data-handling techniques can help achieve this goal by drawing out or recognizing patterns or predicting consumer behaviour from larger databases. According to the data mining literature, the usual data mining methods include database mining, classification, clustering and regression (Abbasolu et al., (2013)). The future development of methodology and data mining applications suggests that there are increasing numbers of applications in practice and develop mining applications that are problem-oriented domains. We need to choose the appropriate data management methods based on data characteristics and business problems because the marketing paradigm develops, the long-term relationship with clients becomes important. The competitive advantage depends on the ability of the company to build and maintain loyalty to consumers and increase the value of their relationship.

APPLICATIONS

From the point of view of forming applications through the marketing mix, client segmentation and client profiling plays an important role. Effective marketing activities involve identifying a particular group of customers sharing similar preferences and showing relatively similar behaviour to a particular marketing signal. Business intelligence applications that serve customer segmentation can help identify different customer communities that can share similar interests and requirements when shopping. Professor Kim and other authors suggest the grouping of customer groups in relation to the product life cycle characteristics. Typically, different methods for classification and segmentation are used, but also for profiling users. However, consumer segmentation becomes more challenging when it comes to an environment where a vast amount of data is being circulated, which are characterized as Big Data. For example, in order to separate users by user groups related to telecommunications applications, it is necessary to analyse call information, of course, in addition to demographic data. The scope of the call-to-call database is enormous, and it is necessary to take into account a variety of data (e.g., qualitative demographic data and quantitative call records), which complicates the analysis further. In fact, in identifying and appropriating the best-quality target group of consumers through marketing (e.g. one-to-one marketing, one-on-one marketing), it is not meant to identify groups of similar customers, but to

"profiling" each individual customer, thus to ensure that the most adequate products and services are sold to an individual requiring just such a product, with regard to the customer-generated customer – generated data base in real time (Morinaga et al., (2002).

The dimension of the marketing product-oriented mix implies the ontology of the product, that is, the general, fundamental and constitutive characteristics and the management of its reputation (<http://instagram.com/press/#>). Essential, the problem of management and of itself and the formation of reputation and product recognition can be mitigated through data analysis and research in an automated environment to monitor the reputation of different products by mining Web content (Lau et al., 2014). Clustering, association and linking methods are among the most common methods for application support and reputation management. Recently, a group of authors proposed a product reputation management method that not only captures textual data about reputation from the Internet, but also takes into account the graphic representations of products published on the Internet. What's more, by the time of this writing, more than 50 billion different photographs have been uploaded to the current Instagram social network (Srinivasan et al., 2004). Given the so much base of images archived on the Internet, it is extremely difficult to analyse a strong volume of images in terms of management the reputation of the product, and even if the diversity of the source data format is taken into account. In order to carry out an automated analysis of textual information published on the Internet to manage product reputation, it is necessary to develop rich computer systems based on the recognition of product information. The method of automation of ontology of products, which is based on latent modelling of the topic, has been practically researched. This is done to create an ontology product based on textual descriptions of product characteristics where it is possible to extract information from social media on the Internet (Dias et al., 2008). An automatically constructed product ontology can be used as a basis for supporting product reputation management applications and many other applications for application of the concept of marketing intelligence. However, given the information complexity involved in the process of automatically generating information about the product from social media, it is necessary to create new computer methods in order to deal with the size, speed and diversity of Big Data on social networks.

ANALYSIS OF MARKETING ACTIVITIES AND PRODUCT RECOMMENDATION SYSTEMS

In an increasingly competitive business environment, billions of dollars are spent each year on promotional activities (Noble et al., 1999). Therefore, the analysis of the marketing activities and costs incurred by them has attracted the attention of practitioners and researchers. Effective promotional strategies are one of the key success factors for companies that increase sales and revenue. In

the Web 2.0 era, there has been an explosive increase in consumer commentary on social media and websites specializing in e-commerce activities.

The application of state-of-the-art methodology for social applications and software to analyse consumer preferences that are hidden and embedded in customer comments makes it easier to decide on the process of formulating a company product strategy and analysing the purchasing of individual consumers. However, there is a significant limitation because existing methods of applications on social media often recognize rigid and contextual behavioural analyses. Consequently, such rigid methods may not be effective enough to support consumer demands through the prism of marketing intelligence in terms of fine extraction of information and data. Guided by the methodology of the scientific and research process, the main contribution of many authors is precisely the design of a new methodology for the analysis of social and mass media. Management implies a research based on applied social media analysis tools to fit into collective social intelligence that rules on the Internet, and hence to improve the design of its own products and the implementation of a marketing strategy.

Promotional marketing analysis can also include factors from other marketing mix perspectives, such as price and location. For example, thanks to smartphones and location-based technology, companies can use customer location information to improve their promotion strategy and choose target customer groups. In order to improve product awareness and promote products to potential customers, product recommendation systems have been widely used in the context of e-commerce (Bao et al., 2008). Methods for filtering based on a consumer's estimation or content-based content removal methods are most commonly used to develop product recommendation systems. Therefore, it is quite challenging to increase the existing product recommendation systems for customers to deal with large databases and generate appropriate recommendations to potential customers in real time, as expected in e-commerce settings. Here is the answer why "speed" is one of the most challenging issues for the "promotion" perspective in the context of marketing intelligence (Dhar et al., 2011).

FUTURE RESEARCH IN BUSINESS AND MARKETING INTELLIGENCE

Numerous literature and authors suggest the use of marketing frameworks for conducting research in the field of Big Data management platform for marketing intelligence (Becerra-Fernandez et al., 2007). The paper identifies sources of data, methods and applications in different marketing mix perspectives. Next, the current issues related to managing Big Data in the context of different marketing perspectives are considered. Based on the established business and marketing intelligence framework, future research guidelines are -highlighted in the Big Data management (Tamer et al., 2013):

- How to choose the appropriate sources of data for specific goals? The amount of data available is constantly increasing. Current techniques do not allow us to process all available data in a timely fashion. So, the choice of data is a critical decision for marketing information management. How to choose the data that can give the highest value to business decision making future research on data alignment and marketing intelligence goals?
- How to choose the appropriate methods of data analysis? There are many types of methods that can be used to process data. Considering a particular data set, many methods can be applied. Regression and classification are commonly used for prediction, while the description is used so-called, mining management of clusters and formed associations. Further, Big data brings problems such as unbalanced data distribution and a large number of variables that cannot be efficiently managed by existing data handling methods. We need to improve existing methods to increase efficiency and accuracy;
- How to integrate different data sources to study complex marketing problems? Most of the existing studies use data from a single source of data. However, some complex business issues require combining data from different sources. For example, in order to examine the impact of social media behavior on purchasing behavior, we may need to combine data on social media and transactions;
- When using different data sources to study the same marketing problem, how do you overcome heterogeneity between data sources? For example, customer reviews and social media information can be used to study client opinions by company or product. However, methods of data collection and analysis may be different because of different structures, quality, granularity and objectivity. Further, research data and log data can also be used to study the same marketing problem. How to conduct social media research and verify the results of social media diary surveys will become an important topic in e-commerce research and e-commerce applications;
- How to balance investment in MI techniques? Large data enabled by the tools of intelligence marketing will become a competitive source of consumer behavior and product planning; therefore all companies must invest in a large data infrastructure including data scientists and large data transmission platforms;
- Data of different formats and quality will continue to grow and be digitized. Even on the fifth data scale (eg 5-digit customer records) can be considered large data now, the same number of data cannot be considered large for several years. It is important to continually improve the framework, methods and techniques we emphasize in this paper to address the challenges for current business intelligence in the next period of generating the data management process.

The concept of intelligence marketing is necessary due to the general fact that the factors of the environment in which the firm operates is dynamic. This changing nature of the market environment makes it imperative for every marketing manager to efficiently manage his marketing information. Marketing information is particularly important for the following reasons. Accelerated changes in the environment are conducive to changes where target markets are moving faster and in habitual, established patterns. As new markets emerge, others are increasing or decreasing in size. Old strategies and tactics are no longer used because they change quickly. Technological changes affect the life cycle, distribution channels and marketing activities. Government regulations affect advertising, prices, labelling, packaging, distribution and much more.

The uncertainty of the future event highlights the well-known fact that the heart of the marketing task is just managing the future and managers are surrounded by information relevant to this task. Therefore, the marketing information needed for use and organization in a way that will help the manager in anticipating and controlling current marketing activities. The complexity of market activities implies that more and more competitors enter the market, the company's need to survive in the combat arena requires monitoring and information gathering as well as analysing information to force the forces to overcome abilities, opportunities and threats, both in relation to competitors and the environment. Also, the increased number of products sold and the market that saved a lot of organizations creates greater need for information. Each product requires different strategies and tactics of the market combination. To make these marketing decisions, more and more diversified and high-quality information will be needed in the analysis. The information processing technology plays an important role because more information can now be processed faster, with greater precision and accessibility than ever before, with the Big Data platform a system that provides managers with extraordinary reports through the computer and removes the problem of decision making from the normal crisis management where the manager devotes a large portion of their everyday activities.

Use and use of marketing intelligence:

- For decision-making purposes, an intelligence marketing system is an important tool for collecting relevant information for marketing managers, managers and decision-makers for security, uncertainty and risk;
- MI provides faster, cheaper and more complete information for organizational use;
- Storage capacity and MI system detection allows a wider variety of data to be collected in and used. This is because the marketing information system stores the incoming data in the database so that they are available when needed;

- It allows managers to decide, but also to make better decisions. This is possible because the MI system provides marketing managers with a decision support system;
- Helps sellers in the first line of sales to monitor product performance, salespeople and other marketing units in detail, and if there is any deviation, the stakeholder will be aware;
- It makes marketing managers greedy for informing. This is because when one manager of marketing sees how MI can help in decision making, they are eager to get more information;
- Helps in market segmentation;
- It is an effective tool in the competition both in price and non-cash;
- If it is well managed it also gives the organization a competitive advantage in the business environment.

With the advancement of modern human society, basic essential services are usually provided so that everyone can easily access them. Today, utility services, such as water, electricity, gas and telephony, are considered necessary to fulfil everyday routines. These utility services are accessed so often that they must be available whenever the consumer requests them at any time. Consumers are then able to pay service providers based on their use of these utilities. A vision of a software program based on a service model envisages a massive transformation of the entire computing industry in the 21st century, with computer services being available on demand, as well as other utility services available in today's society. Similarly, users of computer services (consumers) have to pay providers only when accessing computer services. In addition, consumers no longer need to invest heavily or face difficulties in building and maintaining a complex IT infrastructure. Software practitioners face a number of new challenges in creating software for millions of consumers who are used as a service instead of running on their individual computers. Over the years, new computer paradigms have been proposed and adopted with the advent of technological advances such as multicore processors and network computing environments in order to come closer to achieving this great vision. The computing services must be highly reliable, scalable and autonomous to support a comprehensive access, dynamic discovery and composition. In particular, consumers can determine the required level of service through service quality and service level (SLA) service parameters. From all these computer paradigms, the two most promising appear to be Grid Computing and Cloud technology. Today, the latest paradigm appears in the form of Cloud technology, which promises reliable services that come with next generation databases built on computer virtualization and storage technologies. Consumers will be able to access applications and data from Cloud on request - anywhere in the world. In other words, Cloud technology looks like a unique access point for all possible consumer needs. Consumers are convinced that, Cloud infrastructure is very robust and will always be available at any time. Several computer researchers

and practitioners have tried to define BI Cloud in different ways. Based on our notion of the essence of what the concept promises, we propose the following definition: Cloud technology is a type of parallel and distributed system consisting of a set of interconnected and virtualized computers that are dynamically provided and presented as one or more unique computational resources based on service level agreements by negotiating between service providers and consumers. "On the surface, clouds seem to be a combination of clusters and networks, but this is not the case. The core of the core is obviously a new generation with nodes virtualized through hypervisor technologies dynamically secured on the basis of a search as a personalized resource collection to satisfy a certain level of service agreement that is established through negotiation and available as a composite service through Web 2.0 technologies (Gurjar et al., 2013).

MARKET-ORIENTED ARCHITECTURE CLOUD (MARKET CLOUD)

Since consumers rely on, Cloud technology providers to meet all their computing needs, they will require certain benefits provided by providers in order to fulfil their goals and maintain their operations. Cloud providers will have to consider and meet the different needs of each individual consumer, as agreed in certain agreements on the level of service provided. To accomplish this, cloud providers - but can no longer develop the traditional architecture of the resource management system because they do not tangle a system that provides incentives to share their resources, and still finds that all requirements for providing services are of equal importance. Instead, market-oriented resource management is necessary to regulate the supply and demand of Cloud resources on the market equilibrium, provide feedback in terms of economic incentives, both for, Cloud, consumers, and for providers, and promotes allocation mechanisms based on the quality of services that distinguish service requirements and are based on their usefulness.

The latest, Cloud technologies have limited support for market-oriented resource management and need to be extended to support: negotiating between users and providers for establishing SLAs; mechanisms and resource allocation algorithms for completing SLAs; and manages the risks associated with SLA violations. Moreover, interaction protocols need to be expanded to support interoperability between different providers, Cloud services.

CONCEPTUALIZATION, CLOUD TECHNOLOGY OF BUSINESS INTELLIGENCE

Most decision support systems have promises. However, due to the ever-present digital presence of data, many BI manufacturers offer tools on Cloud (Ouf, Nasr, 2011). Cloud-based BI solutions, Cloud, BI technology, or BI

services on demand. Cloud technology made BI tools more accessible. Organizations do not need to implement and support large amounts of data, as well as mass processing power. Cloud BI is a model that accesses software and hardware resources on demand with minimal management effort (<http://ec.europa.eu/digital-agenda/about-cloud-computing>). Cloud technology is a new way to do BI. Cloud BI is said to be a revolutionary concept of delivering business intelligence capabilities as a service that uses cloud-based architecture that comes with lower costs and faster deployment and flexibility. It is available through any web browser in the so-called software-like-service model. It is recognized that Cloud technology transforms the BI economy and closes the opportunity for smaller companies to compete using the benefits that BI provides. Cloud BI solution has a special interest in organizations that want to improve agility while at the same time reducing IT costs and utilizing the benefits of Cloud technology.

Usually, the cloud platform of the BI is used to address some of the basic needs of customers (Olszak, 2014):

- as a horizontal BI tool for providing independent, internal reporting problems and analysis applications - probably using a traditional relational database (or data market) as the primary source data system;
- as a logon framework or a pre-designed form for reporting and analysis of system integrators used to construct customer-specific solutions. These solutions have functional or specific domains and contain reuse components and application logic (but are uniquely assembled for each customer);
- as a development platform that allows embedding, an external environment for applications that solve a problem specific to data analysis (for example, CRM analytics, financial analytics, or supply chain analytics). There are many options, both from traditional BI manufacturers and new users, providing a variety of BI-based functionality based on different architectures and platforms.

Despite its undeniable advantages, BI in Cloud comes with a number of risks. The most significant is the threat to the safety of users. In the following, some of the most important advantages and risks of BI on Cloud are being investigated.

BENEFITS OF BUSINESS INTELLIGENCE ON CLOUD

The literature review states that Cloud technology transforms the BI economy and opens the possibility of organizations compete in the global marketplace. According to research (http://www.hostalytics.com/sites/default/files/HostAnalytics_CIO-v4.pdf), Cloud BI solutions are considered

useful with 78% for value creation. Several survey respondents confirmed that the demand for data analysis in the BI solution is very uneven, making it particularly suitable for Cloud as a new solution. Participants in the research highlighted the different benefits of using, Cloud, BI technology. They include, among other things, easier access to data that is stuck in application silos (54%), provide increased visibility of operational and financial data across the organization (46%), faster application than traditional BIs (42%), easier for business players 36%, no benefit 22%, others (3%). Gartner's survey dismissed the fact that almost one-third of users of the BI platform use or plan to use the cloud (Petty, Goasduff, 2012). A detailed overview of literature makes it possible to determine the benefits of, Cloud technology BI can have a technological, financial and organizational nature (Al-Aqrabi et al., (2014).

The first group used is the following:

- Easier technology development. Cloud technology allows software companies to make the new processes available to evaluators on a self-service basis, avoiding the need to download and install free downloads or obtain hardware adaptation to technology (Gurjar, Rathore, 2013),
- Increased elastic computing power. Cloud lets users avoid the need to upgrade the computing power of their original systems to use BI. Allows BI users to complement computing power as needed (Darrow)
- Accelerate adoption of BI technologies. The field becomes the default platform for evaluating new software (Ouf, Nasr, 2011).

Financial benefits relate to the following:

- Potential cost savings. Cloud allows companies to reduce their operations cost and use a subscription-based solution. This eliminates the need for long capital requirements (Thomoson, Vander Walt). Long-term cost reductions are more difficult to quantify, but include the potential for reduced personal costs and reduced IT support costs;
- Saving time. Clouds drastically reduce BI implementation (Menon, Rehani);
- Increased short-term ad-hoc analysis. Cloud makes short-term projects very economical. Data March can be created in a few hours or days (Deshpande, Joshi, 2014);
- Easier and cheaper evaluation. Cloud enables companies to make new evaluation technologies available to evaluators based on self-service services, avoiding the need to download and install free software downloads.

Organizational benefits include mainly:

- Easy setup and increased flexibility and agility. Cloud makes it easier for a company to adopt a BI solution and quickly experience value. Deployment requires less complicated upgrades for existing processes

and IT infrastructure. Cloud technology allows scaling up and down as a capacity, and the enterprise requires a gradual payment to the supplier, Cloud technology. Cloud allows isolated business units to respond faster than competitors and increase the quality of their setting and execution of the strategy;

- Support to nomadic computing. BI cloud allows employees and BI users to move from place to place without losing access to tools and information systems (Taths);
- Storing large amounts of data. Cloud technology provides the right infrastructure for storing large amounts of data at a low price;
- Focus on the core strength. Launch BI applications to professionals and focus on basic features.

In a self-sustaining environment, there is a suspicion that business intelligence (BI) will ultimately face the crisis of the situation due to the incredible expansion of data warehouse and the concept of online analytical processing (OLAP) required at basic networking. Cloud technology has spurred a new hope for future BI prospects. However, how will BI be implemented on Cloud and how will the connection and demand profile look like? This research attempts to answer these key questions about downloading BI in Cloud. Cloud BI support technology has been demonstrated using simulation on the OPNET-containing model, Cloud technologies with multiple OLAP application servers that apply parallel requests for queries to a host of servers that host relational databases. The results of the simulation are reflected in the expansion of parallel processing of the server through the Cloud database where it is possible to process OLAP requests throughout application on Cloud technology.

Benefits of Cloud BI technology.

Cloud technology BI are gradually becoming popular among companies, many companies understand the benefits of data analytics. Companies need a quality insight that has instigated accurate data more than ever. Providers serve as the primary interface for the user community of users. Cloud BI technology is the concept of delivering business opportunities as a service. The following are the key benefits of, Cloud business intelligence technologies (Sabherwal, Becerra-Fernandez, 2011).

Cost Efficiency.

In the cloud, companies do not require a budget for large purchases of software packages or the implementation of time-consuming tasks on local servers to set up the BI infrastructure. They will treat this as a service, paying only the computer resources they need and avoid expensive procurement and maintenance of assets by reducing the entry barrier.

Flexibility and scalability.

Solutions, Cloud BI technology allow for quick change of flexibility in order to allow technical users to access new data sources, experiment with

analytical models. With Cloud technology BI solutions, business users will be able to maintain better fiscal control over IT project and have the flexibility to increase or decrease the use if the need changes. In addition, in Cloud, resources can be automatically and quickly scaled and can be supported by a large number of concurrent users. This means that users can easily increase the use of software without delay or the costs of installing and installing additional hardware and software.

Reliability.

Reliability is enhanced by using multiple redundant locations, which can provide reliability and secure storage locations, and resources can be expanded through a large number of users, which makes Cloud technology suitable for disaster recovery and business continuity. Enhanced capabilities for data sharing. Cloud technology applications allow remote access to data and allow for easy data exchange in different locations, because they are used over the Internet and outside the company's firewall. No capital costs. Low TCO (Total Cost of Ownership) is a key advantage of the Cloud model. They pay the service they use with the Cloud of the company. With this policy, Cloud technology allows companies to better control CAPEX (capital expenditures) and OPEX (operating costs) that are associated with unsuccessful activities. Therefore, the benefits of BI can be used more quickly for more users within the organization. Cloud technology is an important part of the future BI and offers several advantages in terms of cost efficiency, flexibility and scalability of implementation, reliability and improved data exchange capabilities. Cloud technology has the potential to offer a new lease of life for the BI and OLAP framework. Cloud technology includes three modes of service - SaaS, PaaS, and Infrastructure-like services (IaaS). These services can be provided by the same or different providers depending on the business arrangement. However, the SaaS provider needs to define the settings on PaaS and IaaS, Cloud technology to define according to applications provided through the Web Services Architecture Component. Clouds include service rendering services and routing engines that can effectively sensitize loading patterns on basic resources. In spite of the numerous benefits of adopting cloud BI, there is a lot of risk and vulnerability. Cloud technology also triggers significant challenges such as the lack of security and security in the cloud, insufficient availability, legal issues or fear of the vendor. In addition, in many cases the integration of the cloud solution may be meaningless for economic reasons or simply cannot be realized due to technological constraints. Risks and Vulnerabilities of Business Intelligence on the Cloud Many scientists argue that Cloud technology requires transparency in data processing, rules and models, and the security of intellectual capital. Unfortunately, many organizations, like countries, do not have an appropriate developed strategy in this area. Recently UE tried to solve this problem.

In September 2012, the European Commission adopted a strategy for the Release of Potential Cloud technologies in Europe. The strategy is designed to accelerate and increase the use of Cloud technologies in all economic sectors. This strategy is the result of an analysis of the overall policy, regulatory and technology landscape and broad consultation with stakeholders in order to identify the ways to maximize the potential offered by Cloud technology.

According to Tamer (2013), Menon and Rehani (2014) the concept besides numerous advantages, also has many limitations and risks that resulted in very slow adoption by now of Cloud BI.

They mainly refer to:

- Data security. For some organizations, security concerns can be a barrier that is not possible today. With Cloud BI, the data is stored and delivered over the Internet. As a result, there are many risks of loss or compromise on data. Data transfer can be unreliable or unsafe, with potential for data leakage. However, in many cases, cloud manufacturers provide a safer environment than what exists on user sites;
- Data integration. The ability to integrate data, one of the basic BI capabilities, is critical to defining a successful and robust BI solution. Cloud represents the potential for compromised data, metadata and application integration. However, sudden movement to the cloud is not feasible and phase approach is usually recommended;
- Lack of control. It is difficult to get Service Level Agreements (SLAs) from Cloud Provider. Data control and ownership of data, reliability of service challenges are some of the main reasons for customer concerns. In order to alleviate this, organizations should already have basic standards models for managing IT standards and service delivery;
- Seller maturity. Too many Sellers of BI Clouds, hosting providers with different offers, etc. They seem confusing to choose the right supplier on the basis of what their needs and capabilities of the manufacturer;
- Performance. It limits the size and performance of a data warehouse in the cloud, a significant problem occurs if applications exist in the cloud, but data exists at the client location, especially when large amounts of data are processed and returned;
- Price models. Lack of standardized price models makes it difficult for buyers to choose the justifications of analysts that the returns to investment in cloud-based BI solutions have not yet been fully proven or measured.

CONCLUSION - REQUIREMENTS IN THE FUTURE

Future research tools require reliability and validation testing to determine the constructive power of the Business intelligence framework. So far, several studies have shown the above-mentioned premises. Further study goals should address the issue of volume. It is noted that the intelligent wheel or cycle is too

wide to be adequately measured in a single study. This paper identifies four different processes within the Big Data: planning and focusing, collecting, analysing and communicating, with the process and structure and culture and knowledge, in the attitude that are indisputable effects of success. Trying to measure all these elements in a study will inevitably deceive researchers and produce dilution of information in the quality and richness of data.

While academic literature comes out of the quantum framework, there is little consistency in terms of measurement and output quality, since in solving critical business intelligence and usable data, there must be some agreement within the scope of how to operationalize the BI platform. Although the definition is generally known and accepted, measurement of contributions and development is not. Given the holistic and integrative nature of intelligence, researchers should rely on already accepted measures within the framework of planning, marketing, knowledge management, information systems, organizational design, analysis and organizational behaviour.

It is time for the studies to focus on the isolated parts of the intelligent model shown in Picture 1. It is necessary to try to fully understand how each of these elements really works in practice. Country-specific or industry-specific studies have little relevance, as they, either by default or design, always take place at a macro level. No value-worthy business opens the door to intelligent practice for occasional analysis, so building relationships and new approaches that will stand behind the reality of BI practice must be found to improve the knowledge that is currently on the ground. This will be beneficial both for practitioners and academics. Finally, the instruments so far are largely based on the assumptions about how intelligence should be implemented, when a real-life case study in the real sector is about how the BI platform is practiced. A rigorous study case study can help us better understand which BI units work and whether their activity corresponds to what we teach. These projects have already been designed by leading academic workers and practitioners and have been welcomed as a refreshing and useful approach that will advance knowledge within this field. Only then will practitioners and academics really recognize the benefits of BI programs.

The main conclusion for this study is that Cloud computing trends cannot be ignored in the BI domain. Cloud technology promises significant advantages. Cloud BI technology has been developed to improve the efficiency and productivity of business intelligence and enhance the performance of BI software. Helps to shorten BI implementations, reduce costs of BI applications. Cloud technology makes it easier to test and upgrade BI programs. Despite these indisputable advantages, there are various risks and vulnerabilities in the use of Clouds. Security, data protection, lack of control and several other barriers prevent the wide adoption of BI clouds. It also seems that many factors (including the size of an organization, its nature and its strategic goals must be considered a reasonable estimate of the use of cloud BI.

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EVOLUTION OF THE VALUE CHAIN CONCEPT THROUGH THE DEVELOPMENT OF THE SUPPLY CHAIN CONCEPT

Miodrag Cvetković²⁸

ABSTRACT

The Value Chain Theory is one of the most important economic theories in the last few decades. Its phenomenon had enormous influence on the further development of the economic theory towards competitiveness and competitiveness factors. It can be said with certainty that Theory also had an exceptional influence on changes in business practice. In the 1980s, there were still strong traces of classical corporate governance, so author professor M. Porter created the theory based on the context of the company, but radically directed management practices towards customers, competitiveness, according to the process system, and according to activities as the "unit of measure of everything". Through the analysis of activities, strategic and operational sustainability, competitiveness, efficiency, effectiveness, profitability can be investigated and controlled. With the development of the supply chain concept, the Value Chain Theory has gained even more significance. It can be argued that only with the development of the supply chain concept, have been created conditions for the full development and understanding of this significant theory. The concept of the supply chain has unblocked the process of further developing the theory of the value chain. At the same time, the study of supply chain management is an opportunity to clarify the meaning of the terms "value chain", "supply chain", "demand chain", "process approach", and other concepts essential for managing the business in the conditions of the modern environment, as well as their role, connectivity and interactivity.

Key words: *Value Chain, Supply Chain, Demand Chain, Activity, Supply Chain Management.*

JEL classification: *M10*

INTRODUCTION

The value chain theory, by its appearance in the 1980s, caused major changes in economic theory and in the management approach. It could be said that it was a quiet revolution, which is still going on. The Value Chain Theory was a new strategic focus and provided new opportunities for finding strategies that could create superior value - from the customer's point of view. The value chain is defined as a combination of a set of activities that add value to the

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product in order to achieve the final value (output) that customers are willing to pay. The concept and methodology of the value chain theory disaggregates the company to strategically important activities in order to understand the cost behavior and find opportunities for improvement and the existing and potential possibilities for differentiation in the market. Chain value per M. Porter is defined by primary activities that add value and supportive business activities that are necessary.

The supply chain, which is jointly managed, represents an operational response to the modern environment and business conditions, to the needs of the market and customers, and enables the achievement of a company's competitiveness strategy in the supply chain. In the context of the supply chain, new opportunities are provided: not only is the firm (enterprise) disaggregated to strategically important activities, but also to achieve the optimal organization of activities and processes throughout the value delivery system - from the furthest supplier to the end consumer. The concept of the supply chain, through joint management, allows us to examine the value and contribution of each activity to the total value, to move activities to the optimal places where they add the highest value, to eliminate redundant and duplicate value-added activities. The supply chain concept has provided, in particular, the ability to monitor and improve operational performance that brings new quality, dynamics and acceleration of the process. The supply chain essentially contributes to business excellence and improves the performance of the value chain.

The supply chain starts from the supplier and moves downstream towards customers. The value chain in the supply chain is defined by the upstream flow of the "supply chain" and monitors the process of adding value along the supply chain process. Each stage or point is upstream representing the supplier, and each stage downstream represents the buyer. According to the supply chain concept (in the integrated supply chain) there is no essential difference between internal and external customers. Each subsequent phase defines the performance requirements of the previous stage. By focusing on buyers and upstream flows, value creation is realized "in the eye" of the customer. And then, by focusing on suppliers and downstream flows, the basic integration of suppliers and production is realized in order to achieve efficiency and eliminate losses in value delivery. The realization that customers are able to define demand and value performance is important for an effective strategic approach, business model and the necessary organizational and business actions. There is a selection of activities that use the necessary resources, decisive for the efficiency and competitiveness of the supply chain. On the other hand, financial accounting does not provide information about the necessary activities and their performances. Along with the development of the concept of supply chain, management accounting and cost-based management system have been developed.

The supply chain concept is to support the concept of the value chain, its integration and improvement. That is, the supply chain has to comply with the desired value chain performance. Customers determine the value of the product, but it is created through selected and coordinated activities of material and delivery transformation and through the provision of necessary resources, in the appropriate organization. By integrating the supply chain activities and processes, it seeks to identify the value of the value and to eliminate unnecessary cost-creating activities that do not add value to the product.

The supply chain concept revitalized and integrated many of the important economic theories that have arisen in the last decades, which together contributed to further evolution and the development of the value chain theory. Thus, the theory of total quality management (TQM) through the supply chain gained a lot of meaning and enabled the reengineering of the overall process and the consistent creation of a value chain in line with the quality of perception of customers. With the concept of supply chain and the theory of business process reengineering (BPR) itself, it has been revitalized. The inventory management model has also gained a new meaning and significance.

Generally, managing the performance of a company and creating a value chain has completely changed in the context of the supply chain, and the management of the performance of an isolated company, both in theory and in practice, has become useless.

Value Chain represents a combination of a set of activities that add value to the product, that is, to which the product is produced and services are performed, in order to achieve the value (output) that customers are willing to pay to meet their needs. The Value Chain shows how the exact business process creates value for customers. Therefore, to make it easier to analyze, processes disaggregate into activities and groups of activities, in order to understand and analytically determine their contribution to value creation.

M. PORTER'S CONCEPT OF VALUE CHAIN

Value Chain represents a combination of a set of activities that add value to the product, that is, to which the product is produced and services are performed, in order to achieve the value (output) that customers are willing to pay to meet their needs. The Value Chain shows how the exact business process creates value for customers. Therefore, to make it easier to analyze, processes disaggregate into activities and groups of activities, in order to understand and analytically determine their contribution to value creation.

According to the theory of the value chain of M. Porter, the activities are primarily divided into primary and supportive. Primary (or linear) activities are accompanied by the process of transformation and delivery of values. Supportive (or overhead) activities are those that do not add value, but are necessary (Picture 1).

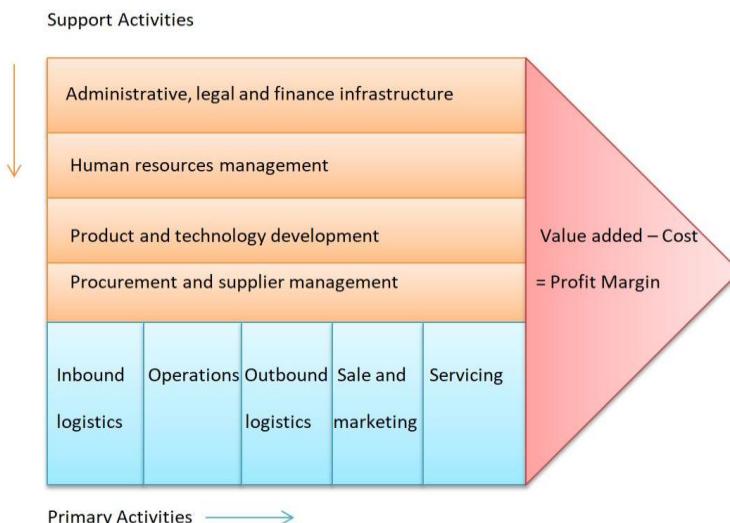
The generic supply chain model provides many control options. Value chain defines value according to customer perception and provides (defines) the necessary resources and management and other infrastructure. Some value chain activities provide resources, some infrastructure, and primary activities provide key production and delivery operations.

A value chain also includes a profit margin, which represents the difference between the added value and the cost of activities that add value.

According to the value chain theory, the primary activities are:

- Inbound logistics activities (communication and coordination with suppliers, acceptance, storage, handling, control, transport and distribution of materials),
- production activities - operations (material processing, assembly, packaging, control, maintenance of equipment - converting input into outputs),
- output logistics activities (storage of finished products, handling, preparation of delivery, transport),
- marketing and sales activities (communication with customers and consumers and information about services, market research and definition, pricing, promotion, bidding and sales conclusion, invoicing),
- Customer service activities (installation, training in product use, servicing, provision and delivery of spare parts).

Primary activities directly produce inputs for other organizational units or for other companies, and therefore focus on the organization of the supply chain.



Picture 1: M. Porter's Value chain

Source: According to Porter, M. (1985), *Competitive advantage*, Free Press, New York, p. 5.

Supportive activities are supportive of primary activities, but the question arises as to whether they are always necessary. These are the activities of administrative, legal and financial infrastructure, labor-related activities (inventory, scheduling, etc.), research and development of products and technology, market testing, equipment management activities and other infrastructure, procurement and supplier management activities. Customers are not always ready to pay for the costs of these activities, so they often need to be eliminated from the process, not reducing the quality, or giving them to partners.

The best choice of required activities and resources should link suppliers, products, distributors and customers who will be satisfied, with the role of logistics being of particular importance for an efficient physical flow and the implementation of management decisions. In the value-creation and service system, today some of the supporting activities are also significantly included: research and development, equipment maintenance, and more. These activities are often subject to outsourcing.

Activities can be the basis for researching the operational process, but also for exploring the built capabilities and skills of the business system. However, it is of the utmost importance to explore activities in relation to different strategic options and alternatives and opportunities to acquire competitive advantages.

On the operational level of business of particular importance is measuring, analyzing and improving the performance of the value chain activity, which directly manages the use of resources and their spending. Decomposition of the process to activities is the first step of measurement and analysis. Disaggregation creates opportunities to better understand inputs and outputs in the process through the flow of activities, to develop an intuition in creating alternative options. Activities create a workflow and include people, raw materials, technologies, methods, and space. Activities are a source of opportunities for (re) designing, implementing, and initiating processes in order to achieve outputs that have value for customers, both internal and external. The key activity in the process model is the process trigger, as is the key process of the business model initiator (Rademakers T. 2012, p. 3).

An analysis of the value chain activity implies first the disaggregation of the process and the recording of primary and supporting activities. Subsequently, each activity, all performances and potential weaknesses, costs and possible contribution to value and the realization of strategy and strategic goals are analyzed. Activities can generally be grouped into three groups: (1) activities that add value and contribute to the product having lower costs than competing, (2) activities that contribute to operational efficiency, but do not add value (supportive), and (3) the activities that affect to increase the cost of the product, but do not contribute value and which should be eliminated. The choice of activities that can be key in the value chain depends primarily on the chosen strategy - product differentiation or cost management. The competitive

advantage comes from many discrete activities of the company in the field of design, production, marketing, delivery and support activities. Each of these activities can be a special ability and a basis for differentiation on the market.

The selection of activities will always be linked to core competencies and key competitiveness factors. At the same time, the choice of activities will affect the type of organization.

Under conditions where the focus is on customers, value is a subjective category and depends on the environment and context. It should be borne in mind that the value here is about a particular product and specific categories when the value is determined from the customer's point of view. With the average market conditions (or market segment), value becomes an objective category - a standard, as a result of the "encounter" of a set of specifics of supply and demand. However, for today's conditions, it is characteristic: 1. that this objective value changes very rapidly, and 2. that the products are adapted to all the smaller market segments, to the "mass adjustment" situation. This is a qualitatively different "objectification" when it is difficult to apply the formula of elasticity of demand in a traditional way (whether price, whether income), where it is primarily a physically standardized product. The reason for this is above all the extremely high dynamics of changes in the environment and the inclusion of too many variables on the basis of which is a service aspect. This is influenced, inter alia: high segmentation of the market and continuous innovation of production programs, high diversification of products, high market openness for new competitors. Therefore, the modern organization of business constantly seeks new competitive solutions through new management models and new strategies based on the agility and flexibility of the system.

In the period of the traditional economy, by the half of the last century, the dominant activities that added the highest values were the activities of production - production operations. Today, this is often not the case. Production operations are often transferred to other companies (companies) as an outsourcing subject, and companies are primarily engaged in marketing, for which a significant portion of revenue is allocated, and sales. Such is the case, especially with companies that own the largest global brands, such as Coca Cola Company and Nike. The dominant activities of Coca Cola as the brand owner are in the field of marketing and research and development. Coca-Cola produces and sells its partners (bottling plants) with concentrates, bases and syrups and marketing. Chargers produce juices and sell and distribute. At the same time, the bottles strictly adhere to the strategic direction (<https://rs.coca-colahellenic.com/rs/o-nama/coca-cola-hbc-srbija-i-crna-gora-kratak-pregled/>, 05.07.2018.). The Nike company primarily deals with marketing and sales. Production is subject to outsourcing and takes place in over 800 factories around the world, and Nike is not the owner of any one (<https://www.google.rs/search?q=lanac+vrednosti&tbo=u&source=univ&sa=X&ved=0ahUKEwjXxNjUw8DYAhXEBiwKHRsRBHcOsAOIMg&biw=1440&bih=794#imgrc=jISGBOJKYFBsM>). For companies that have core competencies in production

operations, the dominant activities will typically be the management of supplier relationships and research and development, in order to achieve competitiveness in the branch through the best supply chain partnerships and product quality.

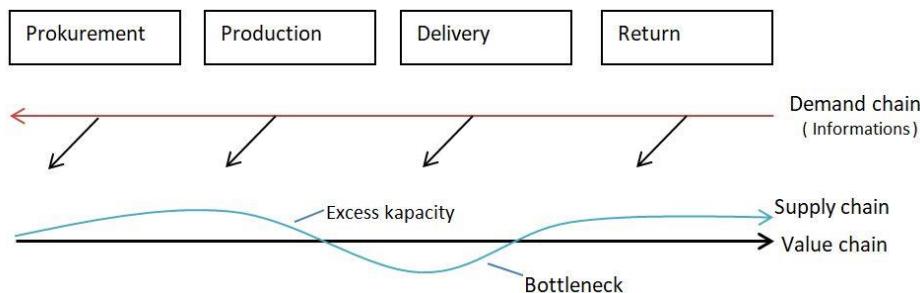
In the context of the supply chain, the value chain is defined by the "demand chain" moving from customers upstream to suppliers. These upstream supply chains actually formulate the performance of the value chain to be embedded in a product with associated services or services in the service sector (A supply chain can be viewed as a strategic category, as part of the research of customer and market needs when configuring business and creating a business model. A demand chain is considered here, which refers to the level of improvement of activities and processes.). The values, therefore imply the level of performance that customers want. "The primary difference between a supply chain (like a physical flow) and a value chain is shifting the focus from suppliers and supply base, to customers and their needs" (Feller A., Shunk D., Callarman T., March 2006).

"Demand chain", as the opposite flow from the supply chain, is the flow of information: starting from the end customer, requests are upstream-orders or requests with the specification of the characteristics of the output of the previous phase, upstream to the most distant supplier. The value thus arises from the demands of customers, while the supply chain has the opposite flow and starts from the requirements of the product, from the need for integration in order to achieve process efficiency and lower costs, as well as the quality that would satisfy customers. The value is realized along the supply chain, through the transformation process, through other processes and activities, and through a series of exchanges and transactions (Picture 2). The value chain can thus be viewed as a planning category, and the supply chain is an operating system that needs to meet demand chain requirements and value chain performance. The value chain in the supply chain, thus follows the process of adding value in line with demand requirements. The supply chain starts from the supplier and moves downstream towards customers. Each stage or point is upstream representing the supplier, and each stage downstream represents the buyer. Under these conditions, the supply chain may have operational disagreements with the value chain needs. In addition to the spare capacity that can be acceptable, chains in the chain may also have excess capacity, which increases costs, but may also have bottlenecks in the operating system, which can reduce the level of service to customers due to delays. Problems in the supply chain may also be due to a poor organization that may cause poor quality.

Value chain activities are integrated into processes and come from different functional areas. The competitive advantage depends on the selection of activities and the way these activities are performed through the supply chain, that is, they need to be performed better than competitors. If this is not the case, then it is better to give it to partners who will perform the activity with lower costs or with higher value. Activities that are performed only due to poor

organization (multiple inspections, unproductive relocation and handling of materials, etc.), which are unnecessary, should be eliminated. By visualizing, mapping activities and processes it is easy to see which activities add value, which are needed but should be given to partners and which should be completely eliminated. A good analysis can show that it is possible and necessary to abolish the whole processes.

Value chain activities come from different functional areas and are integrated into processes. The competitive advantage depends on the selection of activities and the way these activities are performed through the supply chain. They need to be done better than competitors. If this is not the case, then it is better to give it to partners who will perform the activity with lower costs or with higher value. Activities that are performed only due to poor organization (multiple inspections, unproductive relocation and handling of materials, etc.), which are unnecessary, should be eliminated. By visualizing, mapping activities and processes it is easy to see which activities add value, which are needed but should be given to partners and which should be completely eliminated. A good analysis can show that it is possible and necessary to abolish the whole processes.



Picture 2: Demand chain, Value chain and Supply chain

With the development of the supply chain concept, company processes are organized in this broader context in order to achieve the business (competitive) strategy of the company and the interests of all stakeholders, and above all customers and consumers, through the efficiency of the supply chain. The process, as an associated set of activities, and the activities itself, provides the possibility of modeling, connecting with other processes in an enterprise and outside the enterprise, and creating a complete business process of delivering value, and which can be managed through a supply chain in order to achieve company strategies. When mapping the overall supply chain process, particular attention should be paid to key processes that support key performance, which

are the source of competitiveness. An effective value chain, thus enables the company's competitiveness strategies to be achieved in the supply chain.

SUPPLY CHAIN CONCEPT

Martin Christopher defined the supply chain as a network of organizations involved in downstream and upstream connections and flows of processes and activities that produce end-consumer products or services (Christopher M., 2011, p. 3). Supply chain processes represent a group of required, selected and associated activities of different stakeholders in the company and outside companies that take certain inputs, transform them through processes and add value to them by creating outputs according to the demand of internal or external customers. In general, the supply chain is an operational response to the environment and the needs and requirements of customers.

The business process of the supply chain also includes control components. The management process is a process that focuses on cooperative management in order to make the most efficient use of the resources of the distribution channel in order to best satisfy the consumers, and thereby achieve competitiveness (Kanji G. K., Wong A., 1999).

On the one hand, the supply chain is seen as a system in which operational activities take place, the activities of transforming materials and information into products that customers are looking for, and, on the other hand, as a network of relationships between different companies. Michael Hugos emphasizes the definition of supply chain management as a systemic and strategic coordination of traditional business functions and tactics through the business functions of individual companies in the supply chain and through supply chain operations, in order to improve the performance of the company and the supply chain in the long run. Hugos then gives its own definition which reads: "Supply chain management is the coordination (activities) of production, stock, location (location) and transport between the participants in the supply chain in order to achieve the best mix of responsiveness and efficiency in order to service the market" (Hugos M. , 2003, p. 4).

The business process of the company, thus contains three related elements: the operational process, the management process and the management information system. The flow of information through a business process usually plays the role of a trigger of new tasks within the process (Novičević B., 2012, p.74).

By creating a supply chain process and linking them, business strategies become operational, that is, the supply chain strategy is adopted, through the agreed goals and organizational design, to the business strategies of the company. Through the supply chain strategy, interests, but also the contribution of all companies and other stakeholders in the chain, as well as synergistic effects through targeted performance are represented. The supply

chain is conPictured in a complementary way with the activities of the company in the supply chain, which are activities that are crucial for those enterprises, and which companies can contribute most in creating value for customers, which makes it necessary to fully understand the demands of customers and the role of the company in the supply chain. The core activities of the company are the subject of coordination and integrative initiatives. Non core activities may be activities of support to core competencies (such as human resources management, infrastructure, development management), but there may also be side-by-side and intermittent activities that can be abolished, transferred to other enterprises, or connected to other supply chains.

OPERATIONAL ACTIVITIES AND PROCESSES OF THE SUPPLY CHAIN

The supply chain concept is support for the concept of the value chain, its integration and improvement, and the supply chain must be consistent with the desired value chain performance. Buyers determine the value of the product, but it is created through coordinated resource security, material transformation and product delivery. Through the integration of the supply chain process, it seeks to improve the flow of value and eliminate unnecessary activities that do not add value to the product. In this way, eliminating the losses in the process and achieving the performance of the supplies that customers purchase. That is, the purpose of the process approach is to improve the value chain. The value chain of a company is linked to the value chains of other companies, especially with suppliers and distributors. This row of different value chains is often referred to as a "value chain" or a chain of value in a supply chain (Evans N, 2003, p. 63).

The purpose of establishing a supply chain is the operationalization and implementation of a competitive strategy through the synchronization of operations in a supply chain with consistent goals. Today's enterprise competitiveness strategies are now associated with supply chain management strategies, information sharing and joint planning, with shared resources utilization, in order to achieve efficiency, ensure customer loyalty and competitiveness. Thus, competition is no longer occurring between individual firms, but between supply chains, and competition is driven by the acquisition and loyalty of customers and consumers. Management is placed in the supply chain context and unified management of it, that is, the company is managed from a supply chain perspective.

According to the theory of the value chain, the competitive advantage is achieved through the selection of activities and necessary resources. A more complex definition of the supply chain activity might be: activities represent a set of related specific tasks that, within the business process, participate in creating value for customers and consumers, while consuming specific tangible and intangible resources, causing certain costs. In the supply chain, each the previous phase is a supplier, included in the "demand chain", whether internal or

external, such as in the downstream flow of the supply chain, each next phase is a buyer who expects to deliver a certain value.

Operational activities in the supply chain are common (Evans N., 2003, p. 63):

- Procurement activities (or purchases) that initiate the flow of material through a chain by sending an order; this is the most important process link in the upper flows of the chain;
- transport - movement of materials towards the organization that has delivered the order;
- the receipt of material (or goods) - checks are carried out, if necessary, and accepts the order;
- storage or delivery at the place of production or in stores - in case of storage of material and ensuring that the material is available when needed;
- inventory control - recording, monitoring the level of inventory, defining rules (re-ordering);
- material handling - a general term for the movement of material within an organization;
- preparation of delivery - preparation for re-launching of products, selection and preparation for loading into vans;
- transport of goods (from wholesale to retail);
- Physical distribution activities - delivery of finished products to customers, the main link for launching downstream operations;
- return, recycling and disposal of waste - river logistics or distribution, return from customers (for any reason);
- communication and data processing - in addition to the flow of materials, activities related to the flow of information and money are also needed; the coordination of information flows is increasingly complicated because it requires and processing (processing) numerous information.

Logistics marketing activities are integral part of the order execution process, linking orders and delivery with upstream activities and processes.

With the new supply chain strategies and in the modern organization, a new strategic approach has been adopted that the demand of buyers is the driving force of business activities, and instead of "push" production where the goods produced "push" through the distribution system, we have a "pull" strategy where demand initiating processes and "pulling" products through a supply chain. The center of the "pull" system is the execution of orders and this process is integrated with the internal operating processes and the dynamics of customer demand (Picture 3). "Order execution control is a gear that allows everything to go smoothly in the supply chain" (Hugos M., 2003, p. 131). This observation is important because it emphasizes the understanding that the customer is the source of all business initiatives and the process engineer. In this way, the "pull"

organization is supporting the supply chain and value chain, because business initiatives are based on customers, from their effective and real demand, which drastically changes the attitude towards inventories (stockpiles).

Synchronization of distribution processes (as a management process) and process of execution of orders with upstream processes is the most important for the operating system of the supply chain. Market distribution has the role of servicing customers in the best way. The market distribution cycle connects internal processes (previous transformation phases) with customers (Bowersox D., Closs D., Cooper Bixby M., 2002, p. 58). Operations of the market distribution cycle concern the processing and delivery of orders to customers and the achievement of an optimal level of service. Market distribution is integrated with sales and marketing because it ensures that the product is timely and economically available to the customer. The overall distribution process can be broadly divided into: transaction creation activities and physical execution activities - ordering, processing, selection, transport, delivery to customers.

Supply chain processes are organized in a way to achieve target value chain performance.

Business processes in the supply chain can be repeated in the same way, they can happen successively, or in parallel, and can be very complex in terms of participants and procedures, which can all be the subject of special attention to management processes and decision making at different levels. It is important that the business process has operational, management and information components that enable process management.

The business process of the supply chain, and the supply chain itself with its structure, is considered to be a corporate strategic asset, given the importance of having differentiated values for customers and shareholders (owners). All kinds of changes in the process design in the supply chain are always related to the objectives of the enterprise value chain and the total supply chain. A holistic approach implies that the process is designed to connect people, activities, and technology to achieve operational efficiency and customer satisfaction performance, and other goals throughout the organization. Among all the goals, there is a high level of interactivity and interdependence, which is particularly evident at the level of the results of the overall business process. Management processes deal with these changes.

Processes in the supply chain, apart from the interactional character, also have an interorganizational character, and the management of business processes in the supply chain is the most effective and the most comprehensive way of improving the value chain and the business of the companies themselves in the supply chain.

MANAGEMENT PROCESSES IN THE SUPPLY CHAIN

Processes in the supply chain, apart from the interactional character, also have an interorganizational character, and the management of business processes in the supply chain is the most effective and the most comprehensive way of improving the value chain and the business of the companies themselves in the supply chain.

The business process in the supply chain is managed from several companies and from different hierarchical levels, depending on the subject, both with the help of quantitative performance measures, and with the help of qualitative measures of the operational process, such as speed and flexibility. The supply chain process has the purpose to enable the efficiency of delivery of value that customers are looking for. Likewise, the business process of managing through the supply chain system provides the ability to direct the activities and processes according to the desired, targeted performance. The organization's performances of flexibility are particularly important. Depending on the demand profile, the process can be fixed in the sense that it is highly standardized and cleared of all redundant activities. Numerous processes in the supply chain are linked, integrated, synchronized and coordinated, ranging from the furthest supplier to final consumption. Some processes (information exchange processes, logistic processes, etc.) are important for the entire supply chain, and some (production, retail) are primarily for individual enterprises. Thus, some processes are under the direct control of one company, and some may involve more companies, where the specific processes of the supply chain are largely manifested. Particularly specific are the order execution processes where synchronization and coordination includes all functions, from sales to procurement, production and distribution. Intermediates, in the integrated supply chain and processes that take place within an enterprise, are also interested in other companies because there is high interactivity, but also a concerted interest in the overall supply chain to be efficient and competitive.

The concept of supply chain management, through cooperative relationships, enables the integration of processes, eliminating unnecessary costs, delays, losses and damage, eliminating redundant activities and optimizing the overall process. In this context, the company is, for essential reasons, interested in the work of all its partners in the supply chain. Organizational design of the supply chain, which reflects the company's competitiveness strategy and supply chain strategy, should support business strategies and business models of the company, as well as the total supply chain value chain. In order to achieve the effectiveness and target performance of the value chain, it is necessary to adjust the supply chain and to align it with the needs of the value chain.

The purpose of defining these processes and configuring the supply chain is primarily to connect the supply chain with the company's strategic goals and their business-competitive strategies and with the target performance of the

delivery values. Focusing only on the physical flow and efficiency of operations would be to reduce the supply chain capability as a business entity and such a function could be achieved through logistics management. However, the supply chain provides much greater opportunities through management processes, which can influence business configuration, eliminate excessive activities and losses, and streamlines and continuously develop and improve the operating system of the overall supply chain and value chain. This is the reason that the supply chain is the strategic assets of the company in the chain.

Through the strategy of the supply chain, companies are trying to achieve their business strategies in the most effective and efficient way. In the supply chain strategy, the primary purpose and strategic vision of the company in the chain is then incorporated, and then the design of the network of activities and processes, the way they function to best use the resources, capabilities and competencies of member firms, as well as performance measures and processes in order to monitor the realization of strategies and move towards strategic goals. Based on the results of the measurement, expert, interactive and interorganizational teams, can carry out strategically analyzes on the basis of which changes can be made to strategic elements, supply chain organization and operational elements. The system of measures monitors the contribution of the stakeholders as well as the achievement of their goals, but in the context of the functioning of the overall supply chain.

The essence of configuring supply chain activities and processes is to synchronize and integrate the overall operational process, in order to achieve the best performance of market servicing. In this sense, companies give part of their sovereignty through the transfer of some activities or through the acceptance of other activities, through joint coordination and control activities, in favor of the overall supply chain efficiency, which in the final result should contribute to the effectiveness and efficiency of the company. In fact, in reconfiguring enterprise activities through a supply chain, a new business model is created in which companies will take responsibility for their core activities, and activities that are not left to partners through outsourcing (Hugos M, 2003, p. 134). The supply chain in this way represents an organization in which processes are synchronized and coordinates the activities of the company in order to achieve the target performance of efficiency and effectiveness and customer satisfaction.

What is particularly important is that there are decision points at certain points in the business process, which leads to their separation according to the set goals or conditions. Information is needed to make decisions, that is, the defined information flow and the management information system (MIS).

Between processes in the supply chain there are similarities in design and execution in that each process is servicing the requirements of the next phase, but at the same time it upstream specifies specific requirements that are in line with downstream demand. In such a system, the account can be taken of the

view that internal and external customers are of the same characteristics (with the ultimate goal being the satisfaction of end-users and consumers).

Logistic processes link and integrate supply chain operations in order to achieve the attainability of materials and goods, contributing to operational efficiency and reliability of services. Logistics processes and processes are typical for the supply chain entity. Management of the supply chain process includes, in addition to managing material flows and logistics, also marketing, product development and financial flows. For every supply chain, where fast and synchronized material movement is needed and synchronized information exchange with customers and providers, logistics are of the utmost importance.

Coordination of different execution cycles is critical in all phases and aspects of the business process, i.e. there is always operational uncertainty. If there is uncertainty in carrying out logistics operations, there will be many variations in the process. In the logistic process model, the time cycles (leading times) for all tasks in the overall cycle of performance, the delivery of finished products, and the average time must be defined. Deviations in time are possible in all phases and are accumulated in the final stages of the process. Delivery delay will require security supplies (or there will be a stock out problem), and early execution of tasks will require the handling costs of inventories (Bowersox D., Closs D., Cooper Bixby M., 2002, p. 63).

Supply chain management has an essential stakeholder approach. At the time of the creation of a stakeholder concept, he was actually the basis of strategic management. For one company it was important that not only the owners of capital, but also other partners and employees, ask about business and strategic plans. A well-known practice nevertheless suggests that relations, especially with customers and suppliers, have been often transactional or purchasing, not partnership. However, after several decades, with changes in the environment, the involvement of customers and suppliers has become the main basis for the development of the supply chain concept, which further led to the consistent implementation of the stakeholder approach. The involvement of employees is particularly important.

In the organizational sense, today's biggest challenge is to achieve the agility of supply chains, which primarily means the ability to adapt to changes in demand, both in volume and in product variants. Agility can be harder to achieve in individual companies than in a network organization, primarily thanks to the partners who are constantly ready to adapt to changes in scope and type of demand, with a high level of information exchange and coordination of activities, simultaneously in all processes of the business network.

The supply chain strategy allows, on the one hand, the organization of activities and processes, and, on the other hand, the development of key competencies of the supply chain, which is actually the most important resource and source of synergistic effects for the enterprise. In addition to achieving key goals (customer satisfaction, etc.), the supply chain strategy should anticipate

and provide the means to achieve these goals, i.e., it is necessary to develop a business model of the enterprise and a model of organizational action through the supply chain. Supply chain management will be successful if to customers are delivered a high level of services (value) at low prices, compared to competitors' offerings, that is, if the company's competitiveness strategies are realized. In this sense, supply chain management is one of the key management processes that need to provide a synchronized and coordinated business process as a key infrastructure for delivering value assignment tasks.

Supply chains are very complex and consist of a network of production and distribution facilities and transport links and each of them handles potentially a large number of products. It is necessary to develop a model of the entire chain of supply chain, including the interrelationship of all costs and services. An alternative approach to researching the supply chain is to decompose the problem and confuse it. It is the approach to break down the complex supply chain chain to parts where each consists of one source and the supply of one destination with a single product, as well as consideration of the transactions of individual products in different directions. However, the results of this simplification must be re-checked in a complex structure.

Through the use of various supply chain management techniques, operating costs can be reduced in an enterprise. However, this does not have to be advantageous if the stocks are only pushed to the second row of the supplier who re-built the costs into the price of the component. Collaborative planning requires the company to constantly work with customers and suppliers to ensure that their production and delivery activities are carried out according to a schedule that is in line with consumer preferences and that the end-effects are favorable. Some firms use Advanced Planning and Scheduling (APS) software to improve their communication. Using this tool, various methods of joint planning and forecasting of sales and production can be developed, based on which the schedule of a company is immediately transferred to the next partner (Fredendal L. D., Hill E, 2001, P. 23). In order for this to be effective, there needs to be an effective model for streamlining the processes and methods of transferring information between the APS system, at least with the main customers, but it is also necessary to measure the performance of the supply chain.

The system of performance measures in the supply chain and the isolated company differs because companies that are legally independent and do not enter into the supply chain process all their resources and activities. If there is a surplus of capacities or activities that are not objectively needed in the supply chain to meet the existing demand in the supply chain companies, then the company has to solve it only. This part of the resource or activity should not be measured through the supply chain, but internally. In this, the key difference between the system of performance measures in the company and in the supply chain: the company that has been invested must measure everything; in the

supply chain, only the activities necessary for the smooth delivery of the process of delivering value, from the furthest suppliers to the end customer, are measured. A lack of capacity of any kind may occur in the company. These problems can be solved within the supply chain, but only if there is an interest of other companies, which implies changing goals, plans, organizations, and often also supply chain strategies. A company's surplus capacities can also be engaged in another supply chain, and a lack of capacity and activities can be compensated by engaging subcontractors or outsourcing.

VALUE CHAIN IN SUPPLY CHAIN

The basic goals of the value chain management activity are achieving the target performance of product quality, customer satisfaction and competitive advantage. These are consistent goals that lead to the achievement of a favorable business success. The value chain management activities address the questions: what are the relevant markets and what products the market wants? How much product, quality and when to produce? What kind of activities are necessary? In relation to these issues, marketing and logistics activities, as well as support activities related to capacity planning, balancing costs and execution activities, quality control and maintenance of equipment, are taking place.

Value chain activities through the supply chain integrate into a unique process flow. The physical-operational process is simply defined as a "logically connected series of related transactions that convert inputs to outputs or results" (Handfield R. B., Hichols E. L., 2002, p. 46). The definition of the company's operational process, according to ISO 9000: 2000, states that the process is an "integrated system of activities that uses resources as inputs to transform them into outputs". Also, the process can be viewed with all its components and context: the operational processes are transforming materials and information, using appropriate technologies, capacities and adopted procedures (including synchronization), in order to more efficiently transform and achieve higher value or value adequate to the requirements of customers / consumers.

With a change in the behavior of consumers and customers and the growth of competition, the strategic focus and business management model has been changed. By focusing on customers and then upstream, it means that the creation of value performances is realized from the perspective of the customer. Then, by focusing on suppliers and downstream flows, the basic integration of suppliers and production is realized in order to achieve efficiency and eliminate losses in value delivery. Understanding that customers are able to define demand and performance values is important for an effective strategic approach, business model and necessary business actions. An effective supply chain in this sense implies compliance between customers' requirements and the supply chain capability. Supply Chain Management aims to provide resources (physical, financial and human), cost reduction and operational excellence, and value

chain management has a focus on innovation, product development and marketing (Feller A., Shunk D., Callarman T, 2006).

In this sense, the analysis of the operating system derives from the value chain perspective, in order to achieve the synchronization of the supply chain process with the performance and the required value chain dynamics. The consequences of such an approach to business management are: increasing competitiveness and focusing on innovations as an element of the strategy, the evolution of enterprise business management towards the management of the expanded enterprise and the supply chain - in order to satisfy the ultimate customer. Other management features include the globalization of supply and production, the development of a model of discontinuity management in the market, and not primarily production and sales. In these conditions, the value chain decisively influences the definition of the supply chain strategy, as well as the modeling (structuring) of the supply chain and the creation of a system of targeted performance and system of measures.

Globalization of supply and production means that there is a tendency to equalize the added value around the world, that is, to achieve the process of global equalization of the value chain. Engineering and Operations Management seeks to continuously improve processes and activities through the application of different models, methods and techniques such as life cycle management, limit control, lean manufacturing, TQM, Six Sigma, and more. Supply chain efficiency and synchronization with value chain is realized by customers who often quickly change their requirements. Discontinuous phenomena in the environment require the development of flexibility, agility and supply chain responsiveness in order to maintain synchronization with the supply chain value chain. Today, it is not just about synchronizing the process, but also about the tendency to equip the supply chain and the total value chain. A suitable means is also a "target cost" method to which associated internal processes and limits market conditions. Product design, physical and financial resources and their flows must be fully aligned with information coming from buyers upstream to supply sources. The evolution of the management model is strongly supported by new information and communication technologies, which has led to collaborative virtual associations. Generally, information technology strongly contributes to reducing the difference between theory and practice, or between modeling and execution. In this case, the difference between the value chain model and the realization through the supply chain system is reduced. The reason for this is the possibility of precise implementation, simultaneous monitoring, analysis and control.

Business processes that produce physical products are known as manufacturing processes. The service is often described as the flow of business activities, as an administrative process. Physical products are consumer goods, durable consumer goods, buildings, etc. Examples of services include consulting services, insurance, banking services, etc. However, in the

interpretation of the physical product in today's practice it is no longer so easy. Today, the product implies a physical aspect with all the characteristics and specific values that the product has for the customer, and additional services that accompany the product (Reijers H. A., 2003, p. 4). Often the term "extended product" is used. The problem of value analysis is especially related today to the services that accompany the product and are often provided by other participants in the business network or supply chain, such as distributors, logistics companies or retailers. The role of procurement is no longer so "secondary" in the supply chain. The value-added contributor is not only indirect through improving the process through new supply models (just-in time, and other). Suppliers often participate in product quality improvement programs and directly contribute to the value of products.

The development of collaboration between companies in the form of outsourcing (Business Process Outsourcing, BPO) is a significant implication of Porter's value chain theory which says that for each activity it has to be determined whether it is done in a competitive way. If this is not the case, then it is better to give these activities to partners who specialize in it. This has been accepted in practice and in recent years, outsourcing cooperation has been on the rise. The development of outsourcing confirms that the value that is created in the supply chain is not the value of an organization and that value chain management is extended to the entire supply chain. The aim is to eliminate excessive activities in enterprises and to integrate everyone in their core activities in order to achieve high efficiency, synergistic effects of joint action and competitive position in the market. It is a particularly significant effect from the application of outsourcing, as a direct consequence of the value chain concept, that created conditions for radically restructuring of enterprises and creation of flexible (network) organizational structures of supply chains. In the future, this will only have a positive impact on the ability to create strategies, efficiency and flexibility (Cohen S., Roussel J., 2005, p. 15).

Along with the theory of the value chain, the expansion of outsourcing has also contributed to the development of an ABC method to determine the real costs and the contribution of the activity. This method has also resulted in broader management possibilities – activity based management (ABM). As a matter of fact, the issue of outsourcing is connected with the consideration of the question "to buy or produce?". Another author defines the advantages of outsourcing in the following way: making a strategic decision on outsourcing is counted on one of the following benefits: improvement on a cost-effectiveness scale due to cost reduction and the ability to engage resources for own capacity; the ability to penetrate new markets through these partnerships, especially if providers are located in remote geographical areas (offshore); technology advancement - providers can bring new technology, products or processes so that the company is also forced to invest and improve its technology, according to technology newspapers with its partners. With the global development of

telecommunication infrastructure, outsourcing is successfully applied at the international level.

The value chain theory, as one of the most important economic theories in contemporary economic theory, has gained its full significance with the development of the concept of the supply chain. With this concept of "unblocked" is further research and development of this theory.

VALUE CHAIN MANAGEMENT IN SUPPLY CHAIN

The value chain activities and supply chain activities are linked. Creating a Value Chain is part of the planning process, and value chain performance is concretized and operationalized through the operating system, through the activities and processes of the supply chain. According to the value chain theory, a competitive advantage provides a selection of activities that connect in the processes, as well as through the organization and configuration of the supply chain. In the supply chain, the company's competitiveness strategy is supported and the operational performance of the supply chain is determined. The selected activities simultaneously define both the necessary resources and, therefore, the level of (target) costs.

The values of the value chain start with an analysis of the market and the environment (assessment of the wishes and needs of customers and the overall market, understanding of socio-political, economic and technological changes, competition analysis and assessment of the possible positioning of the value chain). It also explores the possibilities for product development, existing and necessary competencies, and finally, the necessary activities, resources and capacities.

Processes in the enterprise value chain relate primarily to the creation of product performance and internal processes, and then to the definition of operations and processes in order to ensure the continuity of delivery of target values. These goals can be concretized primarily through the selection of the necessary activities throughout the supply chain. Supply chain management activities relate to the creation, direction and improvement of supply chain activities and processes, in order to achieve value chain performance. Thus, the value chain performance determines and optimizes the supply chain operating system. Value Chain refers to the product and services and to the necessary activities and resources, and the supply chain to the management of processes and activities. Standard supply chain management processes are processes of synchronization, coordination, improvement, and re-engineering. The difference between the value chain process and the supply chain is the difference between the target performance of the activities that can create the product that the customers want and the performance status - in a particular organizational and technological context. Value chain determines the supply chain, and the supply chain should enable the value chain performance to be realized and contribute to

the improvement of the value chain and business excellence, so that the customer is not only satisfied but also delighted.

The performance of the value chain process can be defined and analyzed from a strategic, tactical, operational and financial point of view, that is, from the point of view of customers, businesses, processes and activities, and from the point of view of business success:

- From the buyer's point of view (voice of customers, VOC) - what value processes need to be achieved - what products, what level of quality and service, what level of business process flexibility is needed;
- from a business point of view (voice of business, VOB) - which strategic determinations and capabilities should support processes, which markets are the results of the process, which are risks and protection against risks;
- from the point of view of the process (Voice of process, VOP) - why the process is needed, what activities, people, business units, resources and technologies, what level of simplification, performance and measures of the operational process and what information is needed for the process;
- from the point of view, performance of business success (where the synergetic effects of the supply chain can be quantified), ROI - how processes support return on investment, EVA, cash flow.

The value chain management processes in IBM Corporation focus on the following areas (IBM Corp., 2009, p. 2):

- harmonization of internal and external performance and results with core competencies, strategy, strategic and business goals,
- understanding and documenting business processes so that they can be implemented consistently,
- measuring, monitoring and controlling the performance of the process (defining procedures), including key inputs and outputs,
- Active design and improvement of business processes in order to achieve or exceed customer expectations, while simultaneously achieving the goals of the organization (for example, the level of costs and revenues).

In order to create a value chain process in the supply chain, it is necessary to define: who participates, which functions, which actives are necessary, what equipment and technology, who are the key stakeholders, what information and what the results are being evaluated. It is also necessary to establish the "owner of the process" and the relationships of superiority and subordination. Defining the Value Chain is part of the planning process and in that sense must take into account the conditions of supply of materials, distribution conditions, and more. In other words, it is necessary to bear in mind certain strategic orientations (bearing in mind the mission and the vision) and the organizational context. Also, the value chain must match the elements of the business model and market strategy.

The competitive advantage comes from the strategic values and core competencies, through the organization and efficient management of the selected activities and the supply chain operating system. The supply chain context as an operating system is actually supporting the strategic options of the entire reproductive chain of the company. The strategic options are no longer just low costs through economies of scale or a high level of capital investment and technical equipment that prevents competition from entering the industry, but a combination of a series of tangible and intangible factors in the business environment of the company - the supply chain. Value is not created and not realized only by improving primary activities, but also through the integration of both primary and secondary (supporting) activities anywhere in the supply chain, activities that contribute to increasing the level of service for customers and consumers. It is that the supply chain, through the creation and delivery of value, is conceived and directed to the efficient service of customers and consumers, in order to achieve all other business goals.

What connects value chain and supply chain in particular is the organizational context that, through the supply chain, operations and concretises the target values, that is, it allows the direction of activities and processes towards target values.

Core competencies are still the epicenter of creating and creating values and a core of competitiveness, but only in an appropriate organizational context that respects all the activities that contribute to increasing the level of services. Core competencies are not the same as primary activities. They can be in any functional area or sphere.

Based on these considerations, the hierarchy of managerial decisions in an enterprise can be defined as follows:

- Creating an enterprise's competitiveness strategy - based on corporate strategy, mission and vision,
- creating a value chain performance,
- creation of a supply chain system in accordance with the target performance delivery,
- operational decisions and coordination of activities,
- decisions on improvements and improvements.

The greatest evidence of the evolution of the value chain theory lies in the area of supportive activities. With the new concept of the value chain, the value of procurement activities are involved in inbound logistics processes and have received a primary, strategic and fully impact on the integrity and quality of downstream processes, but also on product quality.

Employees are direct value creators at all stages of the process, aware of the strategic values and goals and their roles in achieving these goals.

Technology management and product development also increasingly affect competitiveness and value-added. Technology and operational equipment is

digitized, flexible and operations are automated. Computer Aided Design, Computer Aided Manufacturing Systems (CAM), Flexible Manufacturing Systems (FMS), Computer Integrated Manufacturing (CIM) and other techniques allow for achieving system flexibility, as well as quality control and inventory control, which makes production systems and equipment included in the information system. All digital systems (production and information) represent the most significant logistical support that enables integration, competitive advantages and added value across the supply chain. With the help of new IT companies in the supply chain can really deal with their core competencies and leave non-essential activities to partners, tracking them as their own units outside the company (Hugos, 2003, page 134), which increases the quality and reduces costs.

As for the activities of creating a value chain infrastructure, accounting has become managerial, and planning is common, partnership and integral, which has dramatically improved management processes. Management infrastructure has thus acquired a strategic value in value creation.

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As for marketing and sales, as primary activities, marketing has expanded its activities across the supply chain, and sales can be considered as administrative activity. Through the supply chain, *through the mediation of marketing and the information system, customers became participants in the management processes of the company*.

Sales as a primary activity is no longer the essence. The essence has explored the needs of customers and consumers, whereby the supply chain is strategically oriented and operatively coordinated and adapted in order to create value and meet these needs. Over 30 years or more, sales could have been a primary activity that adds value because the operating models were mainly based on manufacturing for a warehouse by pushing the product into the market, when sales had to be repeatedly negotiated with promotional marketing activities. In the pull system where processes are triggered when there is a demand signal or customer demand is confirmed, sales are administrative activity. Marketing, on the contrary, today is primarily concerned with needs research, but is involved in engineering and logistics processes and in the promotion that is increasingly related to the quality and reliability of the supply chain system, which always needs to deliver the values that customers want.

Measuring activity and process performance relative to target value chain performance is different in the company and supply chain. There is a difference between the total cost of all enterprises in the supply chain, the objectively necessary costs in the value chain in the supply chain and the actual costs of the

supply chain. Differences exist due to redundant activities in enterprises and excess capacities in relation to the needs of the supply chain value chain. Also, there is an (additional) difference between the costs of the required value chain activities in the supply chain (for which customers are willing to pay) and the costs of the chain of supply chain in execution (in practice). This difference exists due to the inability of the supply chain to perfectly optimize, which is why it strives for continuous misunderstandings, and sometimes it is necessary to reengineering the activities and processes. These differences are the subject of performance and process performance measurement in enterprises and supply chains in relation to the requirements of the integrated supply chain process, which is always aimed at achieving the target performance of delivering value.

REVITALIZATION OF ECONOMIC THEORIES AND MANAGEMENT MODELS THROUGH THE DEVELOPMENT OF CONCEPTS AND MODELS OF VALUE CHAIN IN THE SUPPLY CHAIN

The value chain theory, as one of the most important economic theories in contemporary economic theory, has gained its full significance with the development of the concept of the supply chain. With this concept of "unblocked" is further research and development of this theory.

Monitoring and analysis of an isolated company, today, when practice is largely overcome the traditional concept of transactional relationship in business, it is not very useful. Many valuable economic theories and performance management models must now be re-examined through the context and concept of supply chain and value chain in an integrated supply chain. For example, TQM and BPR models can not be effective unless the conditions of supply, distribution and sales are not clear, unless partner relationships are managed with suppliers, buyers and distributors, as well as by other value-added actors. Quality can not be managed if the manufacturer (as a focal company) is not interested in the mode of operation of the second or the third order supplier, for example. Through the supply chain concept, the TQM and BPR models have enabled the creation of a new model - a business excellence model that enables full control of all value-delivering activities for customers and consumers in dynamic discontinuities. In this sense, it was particularly re-gaining in importance the BPR model. Theory of Constraints, TOC, has also gained new dimensions by shifting a strategic constraint to the level of demand for supply chain products, while operational constraints can be flexibly addressed through a supply chain. The model of management by means of target costs, in the conditions of global equalization of value offerings, has gained full significance through the supply chain, because the total cost of delivering value can be determined (and controlled), which is only relevant for competitiveness on the market based on costs (competition takes place between supply chains, and not between enterprises).

Many new management models and processes typical of the supply chain have been created, such as Collaborative Planning, Forecasting, and Replenishment, and VMI - Vendor-managed inventory.

The inventory management model has been radically changed in many companies. Through the supply chain both through the JIT and the "pull" system, supplies are delivered when needed, when there is a demand from customers. The level of security stock is primarily related to the desired level of customer service.

As far as the costs are concerned, the main points of interest are primarily the total cost of the supply chain, whereby the model of target costs can also be applied.

The specifics of carrying out activities through the supply chain are reflected in the fact that the activities are jointly planned, based on the exchange of information with customers and other participants, and are deployed at optimum locations in the supply chain, and to a certain extent. This would achieve the best overall result and effectively service the market, or improve the value chain. Specificities are particularly expressed in terms of the purpose and levels of all types of the inventory. Over the stock level, many characteristics of the system are shattered in terms of rationality or irrationality, or in relation to efficiency and responsiveness and level of service to customers, on the chosen strategy of competitiveness. Stocks are held at a certain level as safety due to possible unexpected events and risk elimination. High stocks may be due to the inefficiency of the organization. In the responsiveness supply chain, safety inventory can be at a higher level due to a decision on a higher level of service (faster and more accurate delivery). In theory, there are positions and arguments that the inventory has no purpose. In practice, this is an example of Dell, which works almost without an inventory of materials and ready-made goods, by the principle of "integral transit". The only inventory is "products in progress" - computers that are currently being completed for well-known customers.

Other important issues for the supply chain are the issue of market distribution and order execution. With what location mapping (production capacity and warehouse) products can easily run towards customers, in an efficient and economical way? The answers to these questions very much condition the type and level of activity and the way of coordination. Locating capacities near customers usually means a commitment to responsiveness and a higher level of activity; centralized location means commitment to efficiency, reduction of activities and costs of the supply chain. In the supply chain it is necessary to make decisions about what information to collect, share it with others, i.e., make decisions about the activities of collecting and sharing information.

CONCLUSION

With the over-conglomerate-type organization, with vertically integrated functions, that is, with the development of the concept of supply chain, many economic theories experience different interpretation, understanding and interpretation. This primarily refers to the "value chain theory" and the concept of the value chain.

The concept of value chain focused on customer management processes and their needs and requirements. According to the value chain theory, through the analysis of activities and necessary resources, strategic and operational sustainability, competitiveness, efficiency, effectiveness, profitability can be investigated and controlled.

With the development of the supply chain concept, the value chain theory gained even more significance, that is, it gained its true significance. The reason for this is that it is impossible to manage the business without the familiar terms of supplying materials, distribution, total costs, and other terms of delivery of value to customers and consumers.

The supply chain concept is to support the concept of the value chain, its integration and improvement. Customers determine the value of the product, but it is created through selected and coordinated activities of material and delivery transformation and through the provision of necessary resources, in the appropriate organization. By integrating the supply chain activities and processes, it seeks to identify the flow of value and eliminate unnecessary cost-generating activities, but do not add value to the product.

The supply chain, which is jointly managed, represents an operational response to the contemporary environment and business conditions, to the needs of the market and customers. It enables the achievement of a company's competitiveness strategy and target value chain performance through the entire value delivery system. An integrated system of supply chain activities and processes is an environment in which the target value of the value chain needs to be achieved. In this sense, the target value chain performance is the determinant of the supply chain management organization and its management. An effective supply chain involves compliance between the requirements of customers and the operational possibilities of the supply chain. Through integrated management of supply chain activities and processes, it seeks to control the flow of values and eliminate unnecessary cost-creating activities, but do not add value to the product.

The supply chain starts from the supplier and moves downstream towards customers. The value chain in the supply chain is defined by the upstream flow of the "supply chain" and monitors the process of adding value along the supply chain process. Each stage or point is upstream representing the supplier, and each stage downstream represents the buyer. According to the supply chain concept (in the integrated supply chain) there is no essential difference between

internal and external customers. Each subsequent phase defines the performance requirements of the previous stage. By focusing on buyers and upstream flows, value creation is realized from the customer's point of view. By focusing on suppliers and downstream flows, the basic integration of suppliers and production is realized in order to achieve efficiency and eliminate losses in value delivery.

Discontinuous phenomena in the environment require that the performance, flexibility, agility and reactivity are developed in the supply chain in order to maintain synchronization with the supply chain value chain. Today, it's not just about synchronizing the process, but also about the tendency to equip the supply chain and the value chain.

Many models of governance and economic theory experience re-interpretation today and revitalize the supply chain concept (TQM, BPR, TOC, target cost theory, inventory management model). Many new management models and processes typical for the supply chain, such as CPFR and VMI, have been created, which support the integration of supply chain activities and processes in achieving target value chain performance.

The evolution of control models is strongly supported by new information and communication technologies, which has led to collaborative virtual associations. Information technology strongly contributes to reducing the difference between model and execution. In this case, the difference between the value chain model and the realization through the supply chain system is reduced. The reason for this is the possibility of precise implementation, simultaneous monitoring, analysis and control.

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IMPACT OF HEDONIC AND UTILITARIAN SHOPPING MOTIVE ON ONLINE PURCHASE DECISION

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ABSTRACT

The change in technological area all over the world has changed the concept of information and communication. The use of internet for commercial purposes gave rise to the existence of the electronic commerce (e-commerce) phenomenon. Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the Internet using a web browser. The study focuses on the impact of hedonic and utilitarian motives on the consumers buying behaviour towards online shopping. Questionnaire was used to collect the primary data. The sample size of the study was 125 and the sample design adopted was convenience sampling. This paper tried to find out the impact of hedonic and utilitarian motive on the consumer buying behaviour towards online shopping and gives suggestions to improve the same.

Keywords: *Online shopping, consumers, hedonic, utilitarian, motive*

JEL Classification: *M30*

INTRODUCTION

The development of telecommunication over the past few decades has brought out tremendous change in the consumers purchase process. Consumers often turn their attention towards online shopping, where private customers can order various products through online and receive their products through courier or postal mail.

Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are: e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. A consumer may be motivated to purchase towards online shopping. Motives are the internal factors that arouse and direct a person towards action. Motive can a driver that arouses stimulus generation and guides people to act. Consumers may go through a purchase behaviour process

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intentionally or incidentally in a conscious or subconscious process of evaluation towards benefits of buying versus involved costs. Motives and values will lead to a conscious buying process.

Consumer Behaviour that is task related and rational is termed as utilitarian behaviour and Hedonic behaviour refers to multi-sensory images, fantasies, and emotional arousal in using products. When a consumer shops with benefits in mind it is termed as utilitarian motive and it is functional, practical, extrinsic or practical benefit derived by the consumers. Hedonic motive is related to emotional or experiential shopping experience that makes shopping enjoyable and pleasant.

OBJECTIVE OF THE STUDY

- To identify the impact of hedonic motive on online shopping behaviour of consumers.
- To identify the impact of utilitarian motive on online shopping behaviour of consumers.
- To suggest measures to improve the consumer behaviour towards online purchase.

REVIEW OF LITERATURE

Batra & Ahtola (1990) finds that utilitarian motivations stimulate shopping for the accomplishment of utility, functionality and pecuniary value of a purchase. It is the consumers' evaluation of a product's utilitarian value and its functional attribute.

Cedric Hsi-Jui Wu and Hung-Jen Li (2002), states that the utilitarian value would positively affect the consumers' attitude and intention to purchase. In other words, the consumers would hold a more positive attitude toward the website and increase their intention to purchase if the travel website can provide greater utilitarian values.

Ann Marie Fiore & Jihyun Kim (2005) point out that hedonic consumption experience may terminate with pleasure from affective evaluation during the product search stage rather than the purchase decision stage. The hedonic experience during product search is intrinsically satisfying and becomes the end result sought instead of an intermediate step in the purchase decision process. Web-site features create both pleasure to affect attitude and arousal to entice the consumer to purchase and come back to the on-line retailer's site.

Subhashini Kaul (2006) finds that a personal product such as shampoo would primarily provide hedonic value to consumers in

developed economies and primarily provide utilitarian value to consumers in a developing economy. **Overby and Lee (2006)**, state that utilitarian value is stronger predictor of the purchase intention than hedonic.

To, Liao and Linn (2007), identifies that Utilitarian values are regarded as a determinant of consumers intention to search and purchase product, while hedonic values have direct impact on intention to search and indirect impact on desire to buy.

Khare & Rakesh (2011) state that the utilitarian aspects in online shopping are linked to value, information, ease of use. Sarkar (2011), find that consumers with high hedonic shopping values tries to avoid shopping online, whereas consumers with high utilitarian values perceive greater benefits from fashion online.

Fu- Ling Hu and Chao Chao Chuang (2012) say that utilitarian value and trust are more important than hedonic value in terms of influencing loyalty intention for online shopping. A comparison of utilitarian value with hedonic value revealed that utilitarian value has more influence on loyalty intention than hedonic value.

RESEARCH METHODOLOGY

The Researcher used Descriptive Research Design in this research. Primary Data's were collected using questionnaire and Secondary data's were collected from journals, books and websites. The collected data were edited, coded, classified and tabulated for analysis. The sampling technique used by the researcher is convenience sampling. Sample size taken for the study is 125.

DATA ANALYSIS & INTERPRETATION:

Table 1. Anova for significant difference between hedonic motive and age of the respondents

Hypothesis-I

Null Hypothesis: There is no significant difference between hedonic motives and age of the respondents

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
I am curious and excited to know about shopping through online	Between Groups Within Groups Total	28.090 275.894 303.984	3 246 249	9.363 1.122	8.349	.000**
It is practicable, simple and easy to find good when shopping through online	Between Groups Within Groups Total	37.076 225.340 262.416	3 246 249	12.359 .916	13.492	.000**
It makes me more secure and confident in making a decision to buy or consume a product/brand name	Between Groups Within Groups Total	53.243 325.093 378.336	3 246 249	17.748 1.322	13.430	.000**
It provides me with a joyful moment to meet my personal needs	Between Groups Within Groups Total	104.473 336.091 440.564	3 246 249	34.824 1.366	25.489	.000**
I like the increased buying power when shopping online	Between Groups Within Groups Total	55.286 334.638 389.924	3 246 249	18.429 1.360	13.547	.000**
Accessing information about price is an important reason to shop online	Between Groups Within Groups Total	42.447 302.053 344.500	3 246 249	14.149 1.228	11.523	.000**
I feel the Internet is an exciting technology	Between Groups Within Groups Total	22.824 411.672 434.496	3 246 249	7.608 1.673	4.546	.004*
Shopping online can provide a fun experience	Between Groups Within Groups Total	75.120 373.216 448.336	3 246 249	25.040 1.517	16.505	.000**

Source: From Primary data

** denotes significant at 1%

* denotes significant at 5%

Result

The ANOVA table reveals that there is significant difference between hedonic motives and age of respondents in online market. The null hypothesis is rejected since the p value is less than 0.01 with reference to curiosity and excitement in online shopping, practical, simple and easy to use, prevents from wrong buy, secure and confident mode of shopping, joyful moment of shopping, increases buying power, easy to access information about price, and fun filled experience. P value is less than 5% level and hence the null hypothesis is rejected with regard to exciting technology and age of the respondent. Hence there is significant difference between age and hedonic motives.

Table 2. Anova for significant difference between utilitarian motive and age of the respondents

Hypothesis-II

Null Hypothesis: There is no significant difference between utilitarian motives and age of the respondents

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
It benefits me to make easier product comparison in a store.	Between Groups Within Groups Total	25.011 428.013 453.024	3 246 249	8.337 1.740	4.792	.003*
It makes easier for me to make decisions which product/brand name to buy.	Between Groups Within Groups Total	26.879 303.121 330.000	3 246 249	8.960 1.232	7.271	.000**
It depicts the nutritive profiles of a product.	Between Groups Within Groups Total	49.863 364.921 414.784	3 246 249	16.621 1.483	11.205	.000**
It provides me with information about the goods and services	Between Groups Within Groups Total	13.180 486.996 500.176	3 246 249	4.393 1.980	2.219	.086
It gives me review of the product to be purchased	Between Groups Within Groups Total	17.254 425.182 442.436	3 246 249	5.751 1.728	3.328	.020*
I consider price when I buy online	Between Groups Within Groups Total	61.344 412.020 473.364	3 246 249	20.448 1.675	12.209	.000**
I use internet to buy at lower price.	Between Groups Within Groups	33.282 469.922	3 246	11.094 1.910	5.808	.001*

	Total	503.204	249			
I think online shopping can save time.	Between Groups	25.225	3	8.408	4.396	.005*
	Within Groups	470.491	246	1.913		
	Total	495.716	249			
Convenience is main reason to buy online	Between Groups	80.300	3	26.767	14.183	.000**
	Within Groups	464.276	246	1.887		
	Total	544.576	249			
I shop online when pressed for time.	Between Groups	26.444	3	8.815	4.602	.004*
	Within Groups	471.156	246	1.915		
	Total	497.600	249			

Source: From Primary data

** denotes significant at 1%

* denotes significant at 5%

Result

Since the p value is less than 0.01, null hypothesis is rejected with regard to easy to make decision, depicts the profile of the product, price factor known in online shopping and convenient to purchase. Hence null hypothesis is rejected with regard to the above factors. Hence there is significant difference between age and the above hedonic motives

Since the p value is less than 0.05, the null hypothesis is rejected with regard to easier product comparison, gives review of the product, helps to buy at lower price, saves time, and time saving. Hence null hypothesis is rejected with regard to these factors. So there is significant difference between utilitarian motive and age factor on the factors.

Since the p value is more than 0.05, the null hypothesis is accepted with regard to provision information about the goods and services. Hence there is no significant difference between utilitarian motives and provision information about the goods and services in online shopping.

Table 3. Anova for significant difference between hedonic motive and gender of the respondents

Hypothesis-III

Null Hypothesis: There is no significant difference between hedonic motives and Gender

	Gender	Mean	Std. Deviation	F value	P Value
I am curious and excited to know about shopping through online	Male	4.13	.994	24.291	.000**
	Female	3.63	1.324		
It is practicable, simple and easy to find good when shopping through online	Male	3.69	1.058	1.982	.160
	Female	3.56	.929		
It makes me more secure and confident in making a decision to buy or consume a product/brand name	Male	3.38	1.209	.005	.945
	Female	2.73	1.181		
It provides me with a joyful moment to meet my personal needs	Male	3.61	1.245	2.434	.120
	Female	2.83	1.409		
I like the increased buying power when shopping online	Male	3.61	1.266	6.152	.014*
	Female	2.97	1.077		
Accessing information about price is an important reason to shop online	Male	3.68	1.104	1.741	.188
	Female	2.97	1.231		
I feel the Internet is an exciting technology	Male	3.50	1.309	.209	.648
	Female	3.48	1.366		
Shopping online can provide a fun experience	Male	3.20	1.299	3.665	.057
	Female	3.27	1.472		

Source: From Primary data

** denotes significant at 1%

* denotes significant at 5%

Results

Since the p value is more than 0.05, the null hypothesis is accepted with regard to practicable, more secure and confident in making a decision to buy or consume a product/brand name, provide with a joyful moment to personal needs, Accessing information about price is an important reason to shop online, the Internet is an exciting technology and Shopping online can provide a fun experience. Hence there is no significant difference between hedonic motives and gender of the respondents with regard to these factors.

Since P value is less than .001 the null hypothesis is rejected with regard to the hedonic motive curious and excited to know about shopping

through online. Hence at 1% significant level there is significant difference between gender and hedonic motive curious and excited to know about shopping through online.

At 5% significant level hedonic motive (i.e) increased buying power when shopping online and age null hypothesis is rejected. Hence there is significant difference between buying power when shopping online and gender of the respondents.

Table 4. Anova for significant difference between utilitarian motive and gender of the respondents

Hypothesis-IV

Null Hypothesis: There is no significant difference between utilitarian motives and Gender

	Gender	Mean	Std. Deviation	F-Value	P-Value
It benefits me to make easier product comparison in a store.	Male	3.62	1.356	.145	.703
	Female	3.73	1.334		
It makes easier for me to make decisions which product/brand name to buy.	Male	3.61	1.054	2.612	.107
	Female	2.78	1.211		
It depicts the nutritive profiles of a product.	Male	3.29	1.293	.191	.662
	Female	2.89	1.246		
It provides me with information about the goods and services	Male	3.73	1.393	.061	.805
	Female	2.97	1.344		
It gives me review of the product to be purchased	Male	3.59	1.268	4.393	.037*
	Female	3.16	1.472		
I consider price when I buy online	Male	3.60	1.301	.303	.583
	Female	2.75	1.414		
I use internet to buy at lower price.	Male	3.44	1.463	1.679	.196
	Female	3.38	1.300		
I think online shopping can save time.	Male	3.61	1.333	3.587	.059
	Female	2.95	1.529		
Convenience is main reason to buy online	Male	3.32	1.493	.210	.647
	Female	3.11	1.438		
I shop online when pressed for time.	Male	3.44	1.399	.217	.642
	Female	3.11	1.438		

Source: From Primary data

* denotes significant at 5%

Results

Since the p value is less than 0.05 null hypothesis is rejected with regard to the utilitarian motive increased buying power when shopping online and gender. Hence there is significant difference between gender and increased buying power when shopping online.

Since P value is more than 5% significant level null hypothesis is accepted with regard to benefits me to make easier product comparison in a store, makes easier to make decisions which product/brand name to buy, depicts the nutritive profiles of a product, provides information about the goods and services, gives review of the product to be purchased, consider price when I buy online, use internet to buy at lower price, online shopping can save time, Convenience is main reason to buy online and shop online when pressed for time. Hence there is no significant difference between gender and utilitarian motive in this regard.

Hypothesis-V

Null Hypothesis: There is no significant difference between hedonic motives and Marital status

	Marital Status	Mean	Std. Deviation	F-Value	P-Value
I am curious and excited to know about shopping through online	Married	3.98	1.251	25.257	.000**
	Single	4.05	.886		
It is practicable, simple and easy to find good when shopping through online	Married	3.67	1.079	1.691	.195
	Single	3.63	.959		
It makes me more secure and confident in making a decision to buy or consume a product/brand name	Married	3.25	1.277	4.972	.027*
	Single	3.17	1.177		
It provides me with a joyful moment to meet my personal needs	Married	3.09	1.292	.116	.734
	Single	3.83	1.268		
I like the increased buying power when shopping online	Married	3.42	1.337	8.397	.004*
	Single	3.50	1.135		
Accessing information about price is an important reason to shop online	Married	3.47	1.187	.410	.523
	Single	3.54	1.167		
I feel the Internet is an exciting technology	Married	3.40	1.336	.886	.348
	Single	3.61	1.297		
Shopping online can provide a fun experience	Married	3.04	1.396	2.439	.120
	Single	3.45	1.236		

Table 5. Anova for significant difference between hedonic motive and marital status of the respondents, Source: From Primary data

** denotes significant at 1%

* denotes significant at 5%

	Gender	Mean	Std. Deviation	F-Value	P-Value
It benefits me to make easier product comparison in a store.	Married	3.67	1.412	4.770	.030*
	Single	3.61	1.269		
It makes easier for me to make decisions which product/brand name to buy.	Married	3.47	1.144	.143	.706
	Single	3.31	1.160		
It depicts the nutritive profiles of a product.	Married	3.13	1.292	.039	.843
	Single	3.28	1.290		
It provides me with information about the goods and services	Married	3.76	1.383	.448	.504
	Single	3.25	1.415		
It gives me review of the product to be purchased	Married	3.58	1.299	.592	.443
	Single	3.36	1.371		
I consider price when I buy online	Married	3.30	1.408	.342	.559
	Single	3.50	1.338		
I use internet to buy at lower price.	Married	3.35	1.430	.370	.544
	Single	3.52	1.412		
I think online shopping can save time.	Married	3.55	1.456	2.333	.128
	Single	3.30	u1.344		
Convenience is main reason to buy online	Married	3.22	1.604	17.186	.000**
	Single	3.32	1.304		
I shop online when pressed for time.	Married	3.40	1.473	2.789	.096
	Single	3.31	1.338		

Table 6. Anova for significant difference between utilitarian motive and marital status of the respondents

Results

Since P value is less than .001 the null hypothesis is rejected with regard to the hedonic motive curious and excited to know about shopping through online. Hence at 1% significant level there is significant difference between marital status and hedonic motive, curious and excited to know about shopping through online

At 5% significant level hedonic motive (i.e) more secure and confident in making a decision to buy or consume a product/brand name and increased buying power when shopping online and marital status of the respondents, null

hypothesis is rejected. Hence there is significant difference between more secure and confident in making a decision to buy or consume a product/brand name and buying power when shopping online and marital status of the respondents.

Since the p value is more than 0.05, the null hypothesis is accepted with regard to practicable, provide with a joyful moment to personal needs, accessing information about price is an important reason to shop online, the Internet is an exciting technology and shopping online can provide a fun experience. Hence there is no significant difference between hedonic motives and marital of the respondents with regard to these factors.

Hypothesis-VI

Null Hypothesis: There is no significant difference between utilitarian motives and marital status

Source: From Primary data

** denotes significant at 1%

* denotes significant at 5%

Results

Since P value is less than .001 the null hypothesis is rejected with regard to the utilitarian motive Convenience is main reason to buy online and marital status of the respondent. Hence there is significant difference between marital status and the utilitarian motive convenience to buy online.

Since the p value is less than 0.05 null hypothesis is rejected with regard to the utilitarian motive benefits me to make easier product comparison in a store and marital status of the respondents. Hence there is significant difference between marital status of the respondents and utilitarian motive benefits me to make easier product comparison in a store.

Since P value is more than 5% significant level null hypothesis is accepted with regard to makes easier to make decisions which product/brand name to buy, depicts the nutritive profiles of a product, provides information about the goods and services, consider price when I buy online, use internet to buy at lower price, increased buying power when shopping online, gives review of the product to be purchased online shopping can save time, and shop online when pressed for time. Hence there is no significant difference between marital and hedonic motive in this regard.

FINDINGS OF THE STUDY

- There is significant difference between hedonic motives and age of respondents in online shopping with regard to curiosity and excitement in online shopping, practical, simple and easy to use, prevents from wrong

buy, secure and confident mode of shopping, joyful moment of shopping, increases buying power, easy to access information about price, fun filled experience and exciting technology

- There is no significant difference between age and utilitarian motive with regard to easy to make decision, depicts the profile of the product, price factor known in online shopping and convenient to purchase.
- There is significant difference between utilitarian motive and age of the respondents with regard to easier product comparison, gives review of the product, helps to buy at lower price, saves time, and time saving.
- There is no significant difference between utilitarian motives and provision information about the goods and services in online shopping.
- There is no significant difference between hedonic motives and age of the respondents with regard to practicable, more secure and confident in making a decision to buy or consume a product/brand name, provide with a joyful moment to personal needs, Accessing information about price is an important reason to shop online, the Internet is an exciting technology and Shopping online can provide a fun experience.
- There is significant difference between age and hedonic motive curious and excited to know about shopping through online and there is association between buying power when shopping online and age of the respondent.
- There is no significant difference between gender and hedonic motive with regard to benefits me to make easier product comparison in a store, makes easier to make decisions which product/brand name to buy, depicts the nutritive profiles of a product, provides information about the goods and services, gives review of the product to be purchased, consider price when I buy online, use internet to buy at lower price, online shopping can save time, Convenience is main reason to buy online and shop online when pressed for time.
- There is significant difference between marital status and hedonic motive curious and excited to know about shopping through online. There is significant difference between gender and increased buying power when shopping online.
- There is significant difference between more secure and confident in making a decision to buy or consume a product/brand name and buying power when shopping online and marital status of the respondents.
- There is no significant difference between hedonic motives and marital of the respondents with regard to practicable, provide with a joyful moment to personal needs, accessing information about price is an important reason to shop online, the Internet is an exciting technology and shopping online can provide a fun experience. There is significant difference between marital status and the utilitarian motive convenience to buy online.

- There is significant difference between marital status of the respondents and utilitarian motive benefits me to make easier product comparison in a store. Hence there is no significant difference between marital status and hedonic motive with regard to makes easier to make decisions which product/brand name to buy, depicts the nutritive profiles of a product, provides information about the goods and services, consider price when I buy online, use internet to buy at lower price, increased buying power when shopping online, gives review of the product to be purchased online shopping can save time, and shop online when pressed for time.

IMPLICATIONS AND DISCUSSIONS:

The research reveals that hedonic and utilitarian motives substantially affect online purchase decision. Marketers can target hedonic motive of the consumers by offers delivering fun, enjoyment and mood alleviating consumption experiences. Hedonic motive might have emerged due to enjoyment attained by browsing and shopping on the internet. Hence marketers should design the website to satisfy the goals of the consumers by making it adventurous and enjoyable and fun-filled. Website should be appealing, colourful and stimulating the consumers to shop online. As far as the utilitarian motive of the consumers the marketers must ensure that website provides adequate and clear information of the product and services and it should be easy to access information pertaining to price, product features, payment option, and delivery option. Online marketers should also ensure that convenience, website with fast speed and easy to navigate. Online shopping is influences by both utilitarian and hedonic shopping motives in the consumers purchase decision process.

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RELATIONSHIP BETWEEN INNATE CONSUMER INNOVATIVENESS AND ATTITUDE TO AN INNOVATIVE PRODUCT – MEDIATING ROLE OF THE PERCEPTIONS OF USEFULNESS AND EASE OF USE

Tatyana Yordanova³¹

ABSTRACT

The present article examines the indirect impact of innate consumer innovativeness on the attitude towards an innovative product mediated by consumer's perceptions of its usefulness and ease of use. The essence and peculiarities of the above-mentioned constructs are uncovered. Attention is drawn to Davis's technology acceptance model as a theoretical foundation to the presented mediation relationship. Results of an empirical study, conducted among a sample of 1106 Bulgarian respondents, which confirm the main assumption that the personality trait innovativeness determines the attitude towards the innovative product through the perceptions of the consumer of its easy use and utility are proposed. More specifically, the multiple mediation analysis reveals a statistically significant weak mediation on the part of the two instrumental beliefs in the examined cause-effect relationship. In addition, the results are interpreted by taking into consideration the leading theoretical knowledge in the field.

Key words: innate consumer innovativeness, attitude towards an innovative product, perception of usefulness, perception of ease of use

JEL Classification: M31

INTRODUCTION

The rapid development of technology along with fierce competition and the changing needs and expectations of the market during the last decades induced considerable changes in the business environment. Creating an innovative product acquired priority importance for companies and became a major strategy for their survival and long-term development (Cooper, Kleinschmidt, 1987; Lundvall, Christensen, 2004). Companies are facing the serious challenge to continuously upgrade existing products and introduce innovative ones with a

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view to responding adequately to market dynamics. If companies fail to meet consumer demand, following the rapid development of technology, they will lose their market position and be overtaken by their competitors. The constant pursuit of innovation is a rather risky strategy which some companies effectively use to ensure market success, while others fail and get pushed out of already conquered consumer niches. Consumers and their willingness to demonstrate innovative behavioural activity have a leading role for the success of an innovative product. The way consumer respond to a particular innovation, and whether he accept or reject it as an alternative to meeting his or her specific need depends on the attitude that has been formed. The latter is a complex phenomenon determined by numerous factors, a significant one of which is consumer innovativeness. It is believed that the relationship between the two constructs is indirect, mediated by consumer's perceptions of the usefulness and ease of use of the innovative product (Davis, 1989; Davis, Bagozzi, Warshaw, 1989). The personality trait innovativeness has an impact on both instrumental beliefs which in turn are reflected in the consumer's evaluation of the product, which is at the core of the formed attitude. The present article examines the mediating role of the perceptions of usefulness and ease of use in the cause-effect relationship between innate innovativeness and the attitude towards innovative product. First, however, the essence of the constructs discussed is outlined in brief.

INNATE CONSUMER INNOVATIVENESS

There is lack of consensus in scientific literature on the essence of the construct 'innovativeness'. Generally, it relates to the individual differences in cognitive and behavioral responses of individuals to the new and unfamiliar. Soutar and Ward define general innovativeness as an individual predisposition to adopting innovations (ideas, processes, products, technology, etc.) (Soutar, Ward, 2008). It is assumed that the person's inherent innovativeness has a genetic origin (Hirschman, 1980; Hirschman, Stern, 2001), i. e. each individual is born with a certain level of innovativeness (Hynes, Lo, 2006), which, according to some authors, can be socially influenced (Hirschman, 1980; Rogers, 2003). It is also referred to as 'innate innovativeness' (Hurt, Joseph, Cook, 1977), 'innovative predisposition' (Midgley, Dowling, 1978) or 'global innovativeness' (Goldsmith, Hofacker, 1991). General innovativeness represents the highest level of abstraction of the construct, which is not domain-specific but rather reflects the general propensity of the individual to be open to innovations and new stimuli, i.e. it can be applied to various situations.

Innate (general) consumer innovativeness, being a less broad notion and more restricted than general innovativeness, reflects consumers' innovative behaviour, which means that it is manifested solely in the field of consumption. Im and colleagues define innate consumer innovativeness as a generalized unobservable trait expressing an individual's cognitive style - relating to the process of information processing and decision-making (Im, Mason, Houston,

2007). Another point of view to uncovering the essence of the construct is defining it as individuals' openness of consciousness and willingness to change in response to existing stimuli (Hurt, Joseph, Cook, 1977) in the market field.

Researchers such as Hirschman and Manning and colleagues describe general consumer innovativeness as 'innate novelty seeking' reflecting individuals' typical propensity (willingness) to look for novelty and difference in the sphere of consumption (Hirschman, 1980; Manning, Bearden, Madden, 1995). It is an inherent drive or a motivational force stimulating information activity in the consumer (Pearson, 1970). Hirschman emphasizes that the propensity for novelty seeking relates to innovative behaviour through the so called 'actualized novelty seeking' (Hirschman, 1980), that is a group of activities targeted at acquiring new information related to consumption. The latter helps transform innate consumer innovativeness (innate novelty seeking) into actual behavioural activity towards innovations on the market.

Similar is the understanding of Leavitt and Walton, who consider the construct as openness of information processing and define it from the point of view of the person's susceptibility to new stimuli and experience. The authors emphasize that individuals with pronounced innovativeness have the ability to constructively use the information received, whether it is the result of targeted search or is perceived accidentally, and have the potential to recognise the new idea and its possible applications (Leavitt, Walton, 1975).

According to Steenkamp, Hofstede and Wedel, the consumer innovativeness is individual predisposition targeted at buying new products and brands rather than remaining with previous consumer choices and patterns of behaviour (Steenkamp, Hofstede, Wedel, 1999).

In the theoretical concept of Midgley and Dowling, innovativeness is based on the consumer's communication independence and is defined as the extent to which a person decides to adopt a innovative product independently of the experience shared in the social environment (Midgley, Dowling, 1978). The authors assume that innovativeness is the one that motivates the individual's decision to behave innovatively at the market rather than information based on personal experience with the product, which is subject to interpersonal communication.

According to Midgley and Dowling, consumer innovativeness as a personality trait can manifest at three different levels of innovative behaviour (Midgley, Dowling, 1978):

- *General (global) innovative behaviour* – related to the purchase of new products across various product domains or direct expression of innate innovativeness.
- *Domain-specific innovative behaviour* – refers to the purchase of innovative products belonging to a specific product domain. It is believed to be a consequence of the interaction between innate consumer innovativeness and novelty and interest in the respective product

category. It could be motivated by any of the above-mentioned factors or combination thereof.

- *Product-specific innovative behaviour* – involves the purchase of specific innovative product. It is a result of combining innate consumer innovativeness with the interest in the product domain, the direct or indirect experience with the particular product (or similar) as well as a number of situational variables).

Summing up the above, it can be concluded that innate consumer innovativeness is a personality trait expressing the individual's willingness to change and his/her desire to seek out novelty and variety in the area of consumption. It relates to the consumer's independent decision to adopt the innovation (product or service) irrespective of the experience shared in social circles.

Innate consumer innovativeness is regarded as one of the major factors determining consumer's attitude to the innovative product (Wang, Dou, Zhou, 2008; Baybars, Ustundagli, 2011; Hsu, Bayarsaikhan, 2012), which in turn can act as an activator or become a serious barrier to its acceptance.

ATTITUDE TOWARDS AN INNOVATIVE PRODUCT

The attitude cannot be defined unequivocally, but the one definition that brings most of the others together is that the attitude has a valuation aspect with regard to a particular object or phenomenon (Bohner, Wanke, 2002). Authors such as Baron and Byrne see attitude as a result of evaluative processes. They state that the construct is relatively stable over time, i.e. it reflects the deeper regard of the individual towards the particular object and is also generally applicable, which means it can refer to various objects and events (Baron, Byrne, 1987).

Attitude is not congenital but acquired, and it is formed over the course of human life, in the process of socialization. It prepares the individual for perceiving and carrying out a particular action; goes beyond his consciousness, but at the same time strongly influences the overall content of his psychic life (Uznadze, 1985 [reference in Cyrillic: Узнадзе, 1985]).

In the field of consumer behaviour, the most commonly used definition of attitude is: a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object (Fishbein, Ajzen, 1975) formed as a result of the object's assessment as appropriate or inappropriate to satisfy the person's specific need. In other words, it is the overall assessment of the product or service, formed over time (Solomon, 2002), which satisfies a personal motif and influences the habits and behaviour of the individual on the market field.

Several models have been proposed to elucidate the essence of the attitude, one of the most popular and widely used of which is the three-component pattern, also known as the ABC model (affect, behaviour, cognition). According

to it, attitude has a cognitive, affective and conative dimension (Hovland, Janis, Kelly, 1965).

The cognitive component relates to the individual's system of perceptions, beliefs or knowledge about the attitudinal object or any factual knowledge about the latter (Simonson, 1979) acquired as a result of the direct or indirect experience with it.

The emotions and feelings which the individual experiences towards the attitudinal object during a real or imaginary encounter with it build the attitude's affective component. The emotions aroused in the individual are the result of comparing images and drawing conclusions about the subjective significance of the attitudinal object.

The conative component reflects the individual's behavioural tendency with regard to the particular stimulus. It relates to the subjective likelihood of the person undertaking specific actions towards the object of his or her attitude. This element, however, does not represent the specific behaviour that might occur but rather the predisposition towards it (Dzhonev, 1996 [reference in Cyrillic: Джонев, 1996]). In the context of innovative consumer behaviour this is the individual's willingness to adopt a particular innovative product or engage in innovative behavioural activity.

When the three components are put together, they describe an acquired, latent readiness to respond to a specific stimulus or object in a particular way, i.e. they converge in order to form the individual's attitude towards a given object (Petrova, 2004 [reference in Cyrillic: Петрова, 2004]).

It is assumed that the three components of attitude are consistent with one other, which means that if a change occurs in one component, it imminently affects the other two as well in order to reinstate the original balance. This is related to the principle of cognitive consistency, which postulates that individual is interested in maintaining his/her thoughts, feelings and behaviour in harmony (Solomon, 2002). This means that consumer will take steps to change these characteristics so as to make them consistent with his or her previous experience. The principle of cognitive consistency shows that individuals do not form their attitude in a vacuum. Quite the contrary, their attitudinal system is a structure with its own dynamics, hierarchy and internal links. When an attitude is newly formed, it does not fit in automatically with the rest but causes reorganization and the formation of an entirely new configuration (Dzhonev, 1996 [reference in Cyrillic: Джонев, 1996]).

In other words, what the attitude will be or how the innovative product will be evaluated depends on the way it fits in together with the rest of the existing interlinked attitudes.

The idea that cognitions are at the core of long-lasting attitude explains the priority importance given to cognitive component, especially when it comes to innovative products. They imply a higher level of cognitive activity on the part of consumers and the capability to thoroughly process the information received so that individuals can recognize the innovation as a suitable means of

satisfying their conscious needs. Naturally, the emotional component of attitude should not be neglected because the curiosity manifested by consumers in a particular product domain and the fear of uncertainty as a result of using innovations are powerful activators. They can affect the way in which individuals perceive and evaluate innovative products.

Although most authors adopt the tripartite attitude model, there are others who suggest that attitude is a one-dimensional construct involving only an emotional component (Shiffman, Kanuk, 2004). According to another research approach, attitude is a two-dimensional structure comprised of a cognitive and an emotional component (Bagozzi, Burnkrant, 1979).

According to Gee and Miles (2008), the attitudes that the individual is forming towards the innovative products can range from anti-innovative, linked with resistance or rejection of the innovation, to pro-innovative ones, which the person is willing to accept. The authors identify four different types of attitudes towards innovation that they designate as: rejection – extremely negative attitude, expressing unwillingness to accept the innovative product not only on the part of the individual but also on the others in the social environment, i.e. a strong rejection of innovation; resistance – a negative attitude towards product use, which may reflect in campaigns against its spreading; acceptance – a positive attitude to innovation, expressed in the desire of an individual to accept the product, whereas in some individuals this readiness is accompanied by extraordinary enthusiasm and, in others, by lesser tolerance; and the so called supporters (defenders) – a very positive attitude reflecting not only the readiness to accept the product but also the desire to widely popularise it among the other individuals (Gee, Miles, 2008).

A number of studies have demonstrated the correlation between innate consumer innovativeness and attitude towards innovative product. According to Davis's technology acceptance model, which was later adapted by Agarwal and Prasad and Lu and colleagues, the two constructs are indirectly linked through the mediating role of the perceptions of utility and ease of use (Davis, 1989; Davis, Bagozzi, Warshaw, 1989; Agarwal, Prased, 1998; Lu, Yao, Yu, 2005). Perceived usefulness is defined as the degree to which an individual believes that using an innovative product will lead to an enhanced efficiency. The perception of ease of use is the degree to which an individual believes that using the innovation will be easy and will not require any additional efforts on his or her part (Davis, 1989). Based on the technology acceptance model, the higher the consumer's level of innovativeness, the greater the likelihood that the innovation will be perceived as providing more benefit and requiring no particular effort to use, which in turn will lead to the formation of a positive attitude and an earlier adoption of the innovation. It is thought that the perception of utility is the more significant factor out of the two instrumental beliefs as it motivates the individual to invest greater effort into coping with the complexity of the innovation and overcoming the difficulty in his or her interaction with it (Davis, 1989; Subramanian, 1994; Sun, Zhang, 2003).

RELATIONSHIP BETWEEN INNATE CONSUMER INNOVATIVENESS AND ATTITUDE TOWARDS AN INNOVATIVE PRODUCT - RESEARCH

A survey was conducted among a sample of 1106 randomly selected Bulgarian respondents in order to verify the assumption that the perceptions of utility and ease of use of an innovative product had a mediating role in the cause-effect relationship between innate innovativeness and attitude towards this product. The sample has been relatively balanced in terms of gender, with 55.1% (609) female and 44.9% (497) male respondents aged between 20 and 65. The average age of the participants was 41.

Methodology

The toolbox used for the purpose of the survey comprises a set of four methods. *The first one is based on Manning, Bearden & Madden's scale*, measuring *innate consumer innovativeness*. The authors define two aspects of consumer innovativeness described as follows (Manning, Bearden, Madden, 1995):

Consumer novelty seeking: described as consumers' willingness and desire to seek information about new products. The subscale consists of eight items;

Independent decision making: defined as the degree to which consumers make decisions irrespective of the experience communicated by others (the experience shared in social circles). The subscale comprises six items. For the purpose of the present research, the full scale measuring innate consumer innovativeness has been used rather than its separate subscales.

The second methodology uses Yi and Jeon's consumer attitude scale (2003). It measures the extent to which consumer have a positive attitude (opinion) towards a particular object and are likely to recommend it to others. The scale comprises four items and is applied in the present study in order to diagnose *the consumer's attitude to a particular innovative product* (Samsung Galaxy S8 smartphone). The choice was based on the principle of subjectively perceived novelty of the product. In order to ensure that consumers would perceive the product as new, it was selected with a view to being new to the company and the market as of the time of conducting the research.

The third methodology is based on the scale of Nysveen and colleagues, which measures the utility of a particular object/product (Nysveen, Pederson, Thorbjørnsen, 2005). The instrument is based on Davis's idea and the technology acceptance model (TAM) (Davis, Bagozzi, Warshaw, 1989). It consists of three items measuring the degree to which an individual believe that using a particular object (an innovative product – Samsung Galaxy S8) provides benefits and enhances its efficiency.

The fourth methodology includes the scale of Nysveen and colleagues for the ease of use of a particular object/product (Nysveen, Pederson,

Thorbjørnsen, 2005). The instrument comprises four independent statements measuring individual's perceptions as to the efforts that he or she will need to make in order to learn or use something. In the present study, the scale has been applied on the basis of a particular innovative product (Samsung Galaxy S8 smartphone).

In all four methodologies, a five-point Likert-type scale has been used for the responses of the survey participants. The answer options vary from 1 – disagree, to 5 – agree.

The research toolbox, which has been applied to a sample of 1106 Bulgarian respondents, showed very good psychometric characteristics. The individual scales demonstrated high reliability. The values obtained for the Cronbach's alpha coefficient are as follows: $\alpha = 0.87$ for the consumer novelty seeking subscale, $\alpha = 0.79$ for independent decision making, $\alpha = 0.72$ for innate consumer innovativeness, $\alpha = 0.78$ for consumer attitude, $\alpha = 0.92$ for perceived utility, and $\alpha = 0.92$ for perceived ease of use.

RESULTS AND DISCUSSION

The verification of the main assumption that the perceptions of usefulness and ease of use of an innovative product have a mediating role in the cause-effect relationship between innate consumer innovativeness and attitude towards this product has been performed by means of a mediation analysis through two causally ordered mediators. The PROCESS computational tool created by Andrew Hayes (2013) specially for the purpose has been used instead of ordinary linear regression.

In the constructed multiple mediator model, exploring the indirect impact of the *innate consumer innovativeness* (independent variable) on the *attitude towards the innovative product Samsung* (dependent variable), the perceived utility of the product has been chosen as the first mediator because it is considered to be the more important factor of the two, driving the individual towards making more efforts (mental and physical) so as to cope with the complexity of the product (Sun, Zhang, 2003). Studies show that the perception of usefulness exerts a stronger influence on the consumer's willingness to use the innovative product in comparison with the perception of ease of use (Davis, 1989).

The sequence of regression models showed that innate consumer innovativeness has a significant direct effect on the first mediator, that is the *perception of utility of the product*, which explains 8.15% of its dispersions ($R^2 = 0.0815$, $\beta = 0.1095$, $p < 0.001$). In turn, both factors altogether are statistically significant predictors of the second mediator, the *perception of ease of use*, as they determine a large percentage of its variations ($R^2 = 0.5585$, $p < 0.001$). The perceived usefulness of the innovative product (M1) ($R^2 = 0.7214$, $p < 0.05$) demonstrates a more powerful predictive capability on the perception of ease of use (M2) in comparison with innate consumer innovativeness (X) ($R^2 = 0.1062$, $p < 0.001$) (fig. 1).

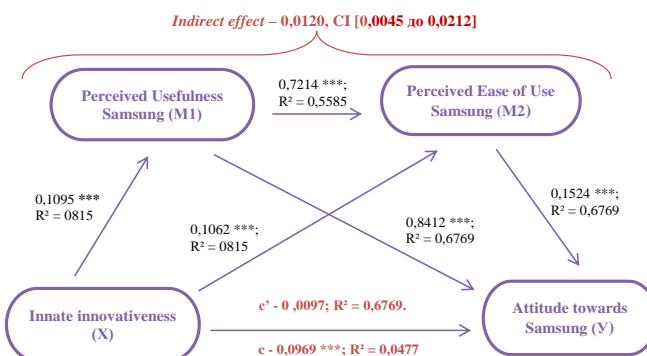
Measuring the direct impact of the independent variable (innovativeness) and the two mediators (perception of utility, perception of ease of use of the product) on the dependent variable (attitude towards the Samsung product) in the regression model showed that innovativeness alone does not have a significant effect on the attitude towards the Samsung innovative product ($\beta = 0.0097$, $p > 0.05$). Out of the remaining two predictors, the perception of utility exerts a more powerful impact on attitude ($\beta = 0.8412$, $p < 0.001$) than the perception of ease of use ($\beta = 0.1524$, $p < 0.001$). Worth noting is the fact that both mediators are very powerful stand-alone predictors so their inclusion in the regression model alongside consumer innovativeness reduces the latter's impact on the dependent variable. This means that the greater the number of benefits the consumer sees in the product and the easier it is to use without much effort on his/her part, the more positive his/her attitude towards the product would be, regardless of the his/her level of innate innovativeness.

After measuring the indirect effect in the model (Med. Effect – 0.0120 with confidence interval CI [from 0.0045 to 0.0212]), it is evident that there is statistically significant (albeit weak) mediation on the part of the perceptions of utility and ease of use in the cause-effect relationship examined hereby. In other words, consumer innovativeness has a significant positive effect through the mediators of perceived utility and ease of use on the attitude towards the innovative product. The mediation model discussed has been presented on the following Picture (picture 1).

c - pure influence of the independent variable (X) on the dependent (Y) (total effect);

c' - influence of the independent variable (X) on the dependent (Y) when the two mediators are included in the model (direct effect);

* $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$



Picture 1. Multiple mediation analysis of the mediating role of the perceptions of usefulness and ease of use in the relationship between innate consumer innovativeness and attitude to the Samsung innovative product

Source:Author

Individuals with a high level of innovativeness are adventurous and open to new experiences and stimuli. The interest in novelty determines their high cognitive level and technical competence, which allow them to see the benefits of innovative products and acknowledge the latter's advantages in comparison with other product alternatives on the market. Such consumers are capable of overcoming the challenges which innovations address towards their knowledge and skills, and they perceive them as easy to use and requiring very little effort on their part. The acknowledged ability of an innovative product to meet the consumer's particular needs, coupled with the lack of serious difficulty in the interaction with it will in turn lead to the formation of a positive attitude and willingness to use this product. Besides that, the less effort and skill the consumer needs in order to learn how to use the product, the more positive his/her attitude towards it (Davis, 1989).

The outcome of the mediation analysis is in line with the theoretical premises of the Davis's technology acceptance model (TAM) (Davis, 1989), later supplemented by Agarwal and Prasad (Agarwal, Prasad, 1998). According to the authors, individuals characterized by high levels of innovativeness will become proactive with regard to the innovative product as a result of the perceived gains and easy use. In other words, the individuals' perceptions about the innovative product will be determined by their motivation to try the new stimulus, which is at the core of their innovativeness (Lu, Yao, Yu, 2005).

Comparing the indirect effects of the two mediators showed that the perceived utility of the product has a more powerful mediation role in the examined cause-effect relationship (Med. Effect – 0.0921 with confidence interval CI [0.0703; 0.1154] than the perception of ease of use (Med. Effect – 0.0025 with confidence interval CI [0.0002; 0.0061]. In other words, innovative consumers will form an attitude towards the innovative product on the basis of their convictions regarding its utility and competitive advantage rather than the perception of its ease of use. This means that the beliefs about the innovation's benefits and advantages will have a decisive role in determining the attitude of the consumer towards it. This outcome is in line with the view of the consumer as a 'Homo Economicus', or a rational economic entity striving to maximize any benefits, be they utilitarian or hedonistic. Deep within, modern consumers remain rational and practical beings who expect innovative products to deliver additional gains and advantages over those products already existing on the market.

CONCLUSION

The attitude towards innovative products has an important role in consumers' innovative behaviour. How will a person react to an innovation, whether he will demonstrate willingness to accept it or reject it, showing resistance in a varying degree depends on the way this innovation have been perceived and evaluated, i.e. on the attitude that has been formed. Essentially,

attitude is a complex phenomenon determined by numerous factors, one of which is innate consumer innovativeness. It is assumed that there is an indirect link between the two constructs, mediated by the consumers' perceptions of utility and ease of use of the innovative product. The summarized outcomes of the study confirmed that the two instrumental beliefs are mediating factors in the examined cause-effect relationship. Consumer innovativeness affects the attitude towards innovative product in a positive way through the perceived utility and ease of use. There is a directly proportional correlation between the gains which an innovative consumer see in the product, the efforts he/she is willing to invest in the interaction with the product, and the attitude formed towards this product. In other words, innovative consumers will be proactive towards innovative products as a result of evaluating them as practical and easy to use, with the perception of utility being the more significant out of the two factors in the process of forming the assessment. It is also necessary to note that both instrumental beliefs, apart from serving as mediators, are also stand-alone factors with a very powerful predicative ability regarding the attitude towards the innovative product, which has to be taken into account by marketing specialists in their practice.

The mediating role of the perceptions of utility and ease of use in the cause-effect relationship between innovativeness and the attitude towards innovation is just one possible explanatory mechanism of the formation process of the willingness to act. Building effective communication with consumers so that innovative products are perceived and evaluated positively requires media messages to emphasize their benefits so that their significance becomes obvious for consumers; should also reduce the products' complexity by means of numerous illustrations and real-life examples demonstrating their easy use. Familiarity with the variety of mechanisms leading to a positive attitude towards the innovative product, hence the manifestation of innovative behavioural activity is instrumental in achieving effective market communication and accomplishing the marketing goals when introducing an innovative product on the market.

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THE RELATIONSHIP BETWEEN MARKETING STRATEGY ADAPTATION AND EXPORT PERFORMANCE: A REVIEW OF EMPIRICAL LITERATURE BETWEEN 2003 AND 2017

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APSTRACT

The debate concerning the relationship between adaptation of marketing strategy and export performance is present in the international business literature for more than 50 years. The last literature review on this topic covered studies published from 1975 until 2001 and it revealed diverse and conflicting results. The aim of this paper was to uncover new insights that authors gained regarding this topic between 2002 and 2017. By using the combination of electronic and manual bibliographic search, 29 studies that tested observed relationships in related period were identified. To synthesize the results of studies found, vote-counting technique in combination with narrative approach was used. Antecedents, moderator and mediator variables that researchers included in their research frameworks were also discussed. Based on the review, the directions for future research were proposed.

Key words: *export performance, international marketing strategy, export marketing strategy, adaptation, marketing mix*

JEL classification: *F23, M31*

INTRODUCTION

The achievement of superior export performance (hereinafter EP) is crucial for decision makers at government level, managers of exporting firms as well as the researchers in the field of international business (Katsikeas et al., 2000). The first attempt to empirically test the relationship between marketing strategy standardization/adaptation and EP was the pioneering work of Sorenson and Wiechmann (1975). Thereafter, the number of published studies in this field increased which testifies about the importance of this subject for researchers

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and practitioners. Theodosiou and Leonidou (2003) provided thorough review of the empirical research papers published between 1975 and 2001 that investigate the impact of marketing strategy standardization/adaptation on EP. Based on the content analysis of 36 uncovered studies authors concluded: "this stream of research was found to be characterized by non-significant, contradictory, and, to some extent, confusing findings attributable to inappropriate conceptualizations, inadequate research designs, and weak analytical techniques" (Theodosiou and Leonidou, 2003, p. 141). This fact encouraged researchers to engage in further investigation on this topic. After the work of Theodosiou and Leonidou (2003) literature reviews in this field are scarce. Schmidt and Kotulla (2011) provided a review on the topic of international standardization and adaptation strategy, but they focused their attention on all the possible consequences of international marketing strategy implementation, including business performance. The scope of their paper is wide and the importance of EP as a concept in international business literature imposes the need to observe separately the impact of marketing strategy on different aspects of EP. Thus, there is a research gap in the literature that needs to be covered.

The aim of this paper is to synthesize the empirical findings on the relationship between marketing strategy adaptation and EP during the period 2002-2017. Apart from that, antecedent factors of marketing strategy adaptation, as well as moderator and mediator variables that were shown to influence the relationship between adaptation and EP are discussed. This issue is important from both theoretical and practical point of view. In order to stimulate further research, it is essential to provide the researchers with the new insights on empirical findings in related field. Considering that a high degree of originality is expected from future empirical studies, it is necessary to guide the authors in which direction they should focus their attention. As Nikolic and Cogoljevic state "entrepreneurs are interested in raising economic activity as high as possible" (2017, p.15), so from a practical point of view, guidelines offered in this paper can serve export business managers who understand the importance of applying marketing strategy and who want to improve strategy implementation on scientific bases and as a result achieve better EP.

The paper is organized into five sections. In the second section the main concepts are defined and the theoretical concepts relevant to the topic are explained. In the third section, the methodological approach used in the paper is presented as well as the characteristics of reviewed studies. The fourth and the most important section reports about uncovered links between marketing strategy adaptation and EP and about factors that were shown to moderate this relationship. In addition, the antecedent factors that authors included in their research frameworks are discussed. The fifth section summarizes findings and offers recommendations for future research.

CONCEPTUAL BACKGROUND

The concept of the EP is nowadays considered one of the most researched topics in the literature of international business and marketing (Leonidou et al., 2010). It is defined as "the composite outcome of firm's activity in export markets" (Shoham, 1998, p.61). Despite the efforts of many authors to establish and systematize factors that may influence EP, the final framework of EP determinants has not been achieved. The main obstacles that researchers encounter on their way to this goal are (Sousa, 2004):

(1) The different EP measures used in the operationalization of this concept. There are numerous indicators used by authors and often authors use self-formulated measures, without prior relying on literature.

(2) The lack of consensus about the theoretical dimensions of EP. The most common way to study EP is through economic and strategic dimension. Although the most of the authors consider EP to be a multidimensional concept, there are still authors that use just one dimension or single indicator to define EP which hinders the comparison of the results from different studies.

(3) The level of analysis in EP research differs, and most often authors debate on whether EP should be tested at the firm level or at the export venture level.

The reasons listed above significantly hamper the formulation of a comprehensive framework of EP determinants, but according to literature reviews in the field of EP (Sousa, 2008; Chen et al., 2016) marketing strategy was always recognized as inevitable element in EP research frameworks.

Marketing strategy is one of the main strategic decisions that firms make when conducting export activities. It refers to the way firm decides to design its marketing program for export markets which includes decisions about four main elements, namely: product, price, promotion and distribution (Leonidou et al., 2002). For more than 50 years, there has been a debate in the literature of international marketing whether and to what extent the elements of the marketing program should be adjusted to the needs of the export markets, and whether and to what extent this decision will impact EP (Schmid and Kotulla, 2011). Regarding this issue, three different views emerged in the literature: total standardization, total adaptation and contingency approach.

Proponents of total standardization of marketing program, among which the most prominent is Theodore Levitt (1983), state that the process of globalization made international market become more unified, and that the applied technology become similar, therefore, consumers needs all over the world, as well as their tastes and preferences, are homogeneous. For this reason, they recommend that export firms should standardize their offer in order to benefit from the economies of scale.

Contrary to this view, proponents of total adaptation emphasize that the similarity of consumers' needs is too simplistic, that such a view is short-sighted and in contrast to marketing concept (Douglas and Wind, 1987). They believe that market is heterogeneous, and that consumers have different desires

and needs, so it is best for businesses to adapt their offer to diverse requirements of export markets.

The third point of view in the debate about the choice between standardization and adaptation is contingency approach. The idea of this approach is that one should not consider total adaptation or total standardization, since they are just two sides of the same phenomenon and they stand at different ends of the same scale. Therefore, authors can choose which term to use - standardization or adaptation; since higher level of adaptation implies a lower level of standardization (and authors usually use the term "adaptation"). According to the contingency approach, the level of adaptation may vary, depending on the situation, and the firm should decide to which extent it will adapt the elements of marketing mix considering situational (contingency) factors. As stated by renowned authors in this field, the main question is not whether the adaptation will lead to improved performance, but under which circumstances a certain level of adaptation will lead to better performance (Schmid and Kotulla, 2011). The contingency approach does not represent a particular theory, but it is rather the way in which researchers approach the research problem and explain the relationships between the observed variables (Theodosiou and Leonidou, 2003). In the essence of this approach is the concept of "fit". However, authors differently define and model the concept of "fit" (for detailed explanation see: Schmid and Kotulla, 2011, p. 494). Contingent factors can be incorporated in the model as mediator, moderator or control variables. That way, researchers actually examine the relationship between the level of adaptation and performance under certain conditions which represents the descriptive way of using contingency approach. Literal application of this approach, in fact, implies the formulation of specific variable which represents the level of matching (fit) between strategy and contingency factors, and then it is examined whether a higher level of "fit" affects performance. It is obvious that the two mentioned approaches are fundamentally different and that the obtained results are interpreted differently. Therefore, studies that approach the problem from the point of view of "fit" will not be the subject of the analysis in this paper, while the studies that examine moderator and mediator variables are included in this review.

RESEARCH METHODOLOGY

Apart from being published in the observed period (2002-2017), the studies included in the analysis had to satisfy several criteria: 1) that they are empirical in nature and that they present the results based on the collected data and verified statistical tests (which means that case studies were excluded from the analysis); 2) that the dependent variable in the research is some indicator of EP; 3) that the independent variable is represented by the level of adaptation/standardization of individual elements of marketing program (product, price, promotion, distribution) or by the level of adaptation/standardization as a composite measure consisting of all four elements of marketing mix. The second and third criteria exclude from the review studies that examine the level of "fit" between adaptation strategy and

contingent factors, since that approach differs greatly from the approach adopted in this paper.

In order to find studies that meet the established criteria a systematic bibliographic search of electronic databases Ebsco, Emerald, ScienceDirect, JSTOR, Springer Link, Sage Journals, Wiley Online Library and Google Scholar was conducted, and the examples of key words used for the search were: export/international marketing strategy, adaptation, standardization, marketing mix, marketing program, export performance, international performance, export success. The shortcoming of an electronic search is that search engine software sometimes can not identify the studies that examine related topic within wider research problem. Therefore, a manual search of the list of references in the studies discovered by electronic search was conducted.

Bibliographic search revealed 29 studies that meet the criteria listed above and which are published in the observed period. Most of the studies are published in renowned international journals such as: European Journal of Marketing, International Marketing Review, Journal of Business Research, Journal of International Business Studies, Journal of World Business, Journal of International Marketing and others.

The approach used to review the literature is the vote-counting technique supplemented by a narrative approach. Zou and Stan (1998) state that the combination of these two techniques is the most suitable for the literature review in the field of EP. Except that, this approach is widely used in EP literature (see: Sousa, 2008; Chen et al., 2016). Vote-counting technique for each independent variable counts studies that report a positive, insignificant or negative relationship with the dependent variable. This way an overview of all discovered links between observed variables can be made which gives the reader a simple but clear picture and allows him to make his own conclusions.

In Table 1 and Table 2 the characteristics of the studies found are presented (studies are sorted by the year of publication). Table 1 provides information relating to the country in which the study was conducted, the sample size, the industrial sector of the observed firms, the size of the firms included in the study, the method of data collection and the response rate; while Table 2 refers to statistical methods that were used for examining the relationship between variables, unit of analysis and key informants.

Table 1. Characteristics of studies reviewed (I part)

Authors	Country of study	Sample size	Response rate (%)	Industrial sector	Firm size	Data collection
O'Cass and Julian (2003)	Queensland (Australia)	293	25,8	multi-industry sample (industrial and consumer goods)	SML	mail survey
Calantone et al. (2004)	US, South Korea	239 (US) 302 (South Korea)	47(US), 43(South Korea)	manufacturing firms from different industries	SML (mainly large)	mail survey
Lado et al. (2004)	Spain	2.264	16,6	manufacturing firms from	SML (mainly	in-depth personal

				different industries	small and medium)	interviews
Lee and Griffith (2004)	Korea	58	32,2	electronic industry (industrial and consumer goods)	ML	mail survey
Brouthers adn Nakos (2005)	Greece	112	28	manufacturing firms from different industries	SM	mail survey
Lages and Montgomery (2005)	Portugal	519	22	multi-industry sample	SML	mail survey
Calantone et al. (2006)	US, Korea, Japan	239 (US), 205 (Korea) , 145 (Japan)	47 (US), 43 (Korea), 29 (Japan)	multi-industry sample	SML (mainly large)	mail survey
Eusebio et al. (2007)	Spain, Italy	133 (71 from Spain, 62 from Italy)	23,9	textile and clothing industry	SM	mail survey
Abdul-Adis and Sidin (2008)	Malaysia	64	31	wooden furniture industry	SML	personal interview, mail and phone interview
Karelakis et al. (2008)	Greece	110	/	wine industry	SML	mail survey
Lages et al. (2008)	Portugal	519	22	multi-industry sample	SML-mainly small and medium	mail survey
Mavrogiannis et al. (2008)	Greece	103	66,4	food and beverage industry	SML	mail survey
Sousa and Bradley (2008)	Portugal	301	34,4	multi-industry sample	SML	mail survey
Maurel (2009)	France	214	29	wine industry	SM	mail survey
Oyeniyi (2009)	Nigeria	41	82	multi-industry sample	SML	mail survey
Sousa and Lengler (2009)	Brazil	201	20,1	multi-industry sample	SML	mail survey
Navarro et al. (2010)	Spain	150	/	multi-industry sample	SML	personal interview
Tantong et al. (2010)	Thailand	252	11,9	manufacturing firms and noncommodit	SML	mail survey

				y products		
Ruzo et al. (2011)	Spain	150	/	multi-industry sample	SML	interview
Zaiem and Zghidi (2011)	Tunisia	120	/	mechanic and electronic industry, textile and clothing, agriculture and agro-business (industrial and consumer goods)	SML-mainly small and medium	interview and on-line survey
Magnusson <i>et al.</i> (2013)	US	153	/	Multi-industry sample	SML	online survey
Navarro-Garcia et al. (2014)	Spain	212	17,7	Multi-industry sample	SML (mainly small)	e-mail survey
Kahiya and Dean (2014)	New Zealand	118	23,8	manufacturing firms from different industries	SM	electronic survey
Cunha and Rocha (2015)	Brazil	173	/	commerce, industrial and services sectors	micro and small	online survey
Erdil and Özdemir (2016)	Turkey	118	/	textile and clothing industry	SML	online survey and interview
Fuchs and Köstner (2016)	Australia	115	14,4	multy-industry sample	SM	mail survey
Navarro-García et al. (2016)	Spain	196	16,3	multy-industry sample (only industrial goods)	SM	mail survey
Virvilaite and Seinauskienė (2016)	Lithuania	34	27,2	milk and meat processing firms	SML	online questionnaire
Westjohn and Magnusson (2017)	US	203	16,6	manufacturing firms from different industries	SM	e-mail survey

Codes used for firm size: S- small, M- medium, L- large

Source: Authors' research

By inspecting the second column of Table 1, it is realized that studies in developed countries are prevalent and that researches in developing countries are rare. In the field of EP, it is common that the survey is conducted in one

country and that it refers to one business year. Only three of the 29 studies found included firms from more than one country, and longitudinal studies were not found.

The size of the sample ranges from 34 to 2.264 firms considering that the sample size, except in one study (Lado et al., 2004), does not exceed the number of 519 firms. The response rate to the questionnaire ranges from 10-82%, although the response rate of 82% is very high and it was found only in one study. The most studies report a response rate that ranges from 10-25% (third and fourth column of Table 1).

In most of the studies (21 out of 29 studies), the sample consisted of firms from different sectors, with emphasis on manufacturing firms. The justification for this standpoint is the possibility of generalizing the results of the research. Also, industry specific studies were rare. Only eight studies report results from single industry. The studies that report results from service sector were also scarce.

The most of the authors analyzed firms of all sizes, and research related to small and medium firms are relatively rare. Only eight studies report results from SME sector (fifth and sixth column of Table 1).

The method of collecting the data that prevails was survey, and the authors usually preferred to send questionnaires by post (17 studies) or email (six studies). A smaller number of studies (only three studies) relied on the interview. Some authors combined personal interviews with online surveys (three studies).

Important aspect of the research on related topic is statistical method that authors used in their research, as well as the level at which the EP was studied (e.i. the unit of analysis) and since the main instrument for data gathering was survey, it is also important to whom the survey was addressed e.i. key informant. These facts are presented in Table 2.

Table 2. Characteristics of studies reviewed (II part)

Authors	Statistical analysis	Unit of analysis	Key informant
O'Cass and Julian (2003)	Structural equation modelling via partial least squares (SEM-PLS)	export venture	export managers
Calantone et al. (2004)	Stuctural equation modeling (SEM)	export venture	export managers
Lado et al. (2004)	Seemingly unrelated regressions model (SURE)	firm	export managers
Lee and Griffith (2004)	Regression analysis	firm	export managers
Brouthers and Nakos (2005)	Hierarchical regression analysis	firm	managers
Lages and Montgomery (2005)	SEM	export venture	person responsible for exporting
Calantone et al. (2006)	SEM	business unit	marketing manager, international manager, product manager, export manager
Eusebio et al. (2007)	regression analysis	firm	marketing managers

Abdul-Adis and Sidin (2008)	regression analysis	firm	export managers
Karelakis et al. (2008)	path analysis (using ordinary least squares criterion)	firm	managers and/or firm owners
Lages et al. (2008)	SEM (FIML estimation)	firm	export managers
Mavrogiannis et al. (2008)	SEM	firm	export managers
Sousa and Bradley (2008)	SEM	export venture	export managers
Maurel (2009)	Factorial analysis of variance (ANOVAs)	firm	not specified
Oyeniyi (2009)	The Pearson correlation analysis and ANOVA	export venture	officers in charge of export
Sousa and Lengler (2009)	SEM	export venture	senior managers
Navarro et al. (2010)	SEM - PLS	firm	senior managers in charge of exporting
Tantong et al. (2010)	SEM	firm	export managers
Ruzo et al. (2011)	logit modeling	firm	senior managers in charge of exporting
Zaiem and Zghidi (2011)	Pearson's correlation and ANOVA	firm	export managers
Magnusson et al. (2013)	SEM-PLS	export venture	managers, vice presidents, chief-level officers or owners of the firm
Navarro-Garcia et al. (2014)	SEM-PLS	firm	export managers
Kahiya and Dean (2014)	multiple regression analysis	export venture	managers
Cunha and Rocha (2015)	SEM	export venture	export managers
Erdil and Özdemir (2016)	Regression analysis	firm	head officer or the representative officer of the companies
Fuchs and Köstner (2016)	SEM-PLS	export venture	export managers
Navarro-García et al. (2016)	SEM-PLS	firm	specialized manager in export activity
Virvilaite and Seinauskiene (2016)	Multiple regression analysis (moderated regression and mediation-path analysis)	export venture	export managers
Westjohn and Magnusson (2017)	SEM	export venture	export managers

Source: Authors' research

The authors mainly used sophisticated statistical methods for data analysis, such as structural equation modeling (16 studies). Different forms of regression analysis were also frequently used (7 studies). Structural equation modelling (SEM) techniques are more precise than simple regression analysis as they can test intermediate relationships and moderator variables in examined model. Other methods such as ANOVA or logit modeling were rarely used in the studies found.

In the observed period, there were more studies that examined EP at the firm level (17 studies, including the one that observes EP at business unit level) in relation to the authors who measured the EP at the export venture level (12 studies). Since neither of these two approaches is wrong, the only recommendation is that the level at which the strategy is measured should be the same as the level at which the EP is examined. It is important that all the variables are defined at the same level and that the interpretation of the results should follow the level at which the variables are measured.

In almost all of the studies found, key informants were people who are responsible for exports. Authors, also, often surveyed senior or other managers in the firm. The aim of this was to get as accurate information as possible. There were no found studies that surveyed more than one informant. It could be beneficial to include more than one informant in future researches, since this increases the reliability of the data gathered.

RESULTS AND DISCUSSION

Unlike the previous period (1975-2001) in which Teodosiou and Leonidou (2003) found studies that tested the relationship between the strategy of total standardization or total adaptation and EP, in the observed period (2002-2017) no studies were found that approach the problem in this way. It is obvious that the contingency approach has made a significant impact on the research conducted in the period 2002-2017. All the studies found observe standardization and adaptation as two extremes of the same phenomenon and examine the level of adaptation, which also means a lower level of standardization. Some authors separately examined individual elements of the marketing program, while the others used composite measure consisting of all four elements of the marketing program to define the level of the implementation of adaptation strategy.

Table 3 presents the information about how authors defined and measured adaptation strategy or some of its elements (second column). In the third column, EP indicators that authors used are presented. In the fourth column, the findings of the observed studies regarding the discovered relationship between adaptation strategy and EP are summarized as follows: "(+)" is the symbol used to show that authors report on positive relationship between observed variables; symbol "(0)" indicates that the tested relationships were not statistically significant; symbol "(-)" signifies that the negative relationship between the observed variables were found. In addition, from the aspect of setting the problem and formulation of research model, it is important to gain insights to

which moderator variables authors examined in their studies. The inclusion of moderator variables also suggests that contingency approach influenced the research in the observed period. Moderator variables used are listed in the fifth column of Table 3. Except that, in two of the studies found, the authors included mediator variables in their research which are explained later in this paper.

Table 3. Relationships uncovered between adaptation strategy and EP in the period 2002-2017

Authors	Studied elements of international marketing strategy and the way they were measured	Export performance indicator(s)	Significance of the relationship between adaptation and its elements and EP	Moderator variables tested
O'Cass and Julian (2003)	Adaptation of marketing strategy: the extent of adaptation of the marketing mix variables adopted from Cavusgil and Zou (1994); multi-item scale	perceived success of the export venture	(0)	/
Calantone, et al. (2004)	Product adaptation: one-item; the level of adaptation on five-point scale	profitability of export venture (subjective)	(+) both for US and South Korea	/
Lado et al. (2004)	Product adaptation: -dichotomous variable (whether there is or there is not product adaptation in terms of product quality and/or design and/or service?) Price adaptation: -whether the price is high, equal or low in relation to the domestic market	export sales volume	product adaptation (+) price adaptation (+)	-cultural distance positively moderates the relationship between product adaptation and EP -economic distance positively moderates the relationship between price adaptation and EP
Lee and Griffith (2004)	Product adaptation: 3-items scale (adaptations to customers' tastes, product quality or safety standards, and production cost)	satisfaction with overall EP	(+) both for price and product adaptation	/

	Price adaptation: (2-items scale)			
Brouthers and Nakos (2005)	Product adaptation: A dichotomous variable was developed indicating whether products sold abroad were adapted for export or not (Product adaptation was measured by asking managers to indicate whether they (1) changed constituent ingredients of products sold to export markets, or (2) altered the packaging.)	perceived export profitability in relation to domestic market and competitors	(+)	/
Lages and Montgomery (2005)	Price adaptation: self-developed scale consisting of 4 items	annual export performance improvement (Annual export performance improvement – composite measure of economic dimension of EP that consists of subjective assessment of the improvement of: export sales revenue, export sales volume, export profitability)	(-)	/
Calantone, et al., (2006)	Product adaptation: self-developed scale consisting of 4 items	the overall success of export operations in last 5 years (managers' assessment)	(+)	/
Eusebio ^{et al.} , (2007)	Product adaptation: one-item measure (the level of adaptation on the scale ranging from 0-100%) Price adaptation: one-item measure (the level of adaptation on the scale ranging from 0-100%)	export intensity	product adaptation(+) price adaptation (0)	/

Abdul-Adis and Sidin (2008)	Adaptation of marketing strategy: multiple items scale developed based on Cavusgil and Zou (1994) and Julian (2003)	-composite measure of EP (Authors formed a composite measure from the following indicators: the level of achievement of strategic export goals, perceived success of export activities, annual export revenue growth rate, overall profitability of export activities)	(0)	-global economic situation does not moderate the relationship between and EP -certification positively moderates the relationship between product adaptation and EP -certification negatively moderates the relationship between promotion adaptation and EP
Karelakis et al. (2008)	Product adaptation: 2-item scale (initial product adaptation and adaptation of product label)	composite measure of EP which includes: export profitability, export intensity, market diversification, and export growth	(+) indirectly through cooperation (cooperation is mediator variable)	/
Lages et al. (2008)	Product adaptation (4-item scale) Promotion adaptation (5-item scale) Pricing adaptation (4-item scale) Distribution adaptation (4-item scale)	-export intensity - the achievement of export objectives - satisfaction with EP	-product adaptation negatively affects the achievement of exporting goals -other tested relationship were not statistically significant	/
Mavrogiannis et al. (2008)	Adaptation of marketing strategy: degree of adaptation of 4Ps (one indicator for every element of adaptation strategy)	composite measure of EP consisting of: -export sales growth (objective indicator) -subjective EP (9-item scale) (Degree of satisfaction with achievement of: export market share, export market growth, export sales value, export sales value growth, export	(+)	/

		sales volume, export sales volume growth, export profitability, export profitability growth, new country market penetration.)		
Sousa and Bradley (2008)	Price adaptation: level of adaptation of price discounts, margins, credit and payment security	composite measure of EP: the level of satisfaction with export sales growth, export profitability, export intensity, meeting expectations and perceptions of how competitors rate the firm's export performance	(-)	/
Maurel (2009)	Product adaptation: The level of product adaptation (1 item, 7-point Likert scale)	- export intensity	(+)	/
		- net export turnover (in kilo euros)	(0)	
Oyeniyi, (2009)	Product adaptation: measured with 1 item (the degree of adaptation on Likert scale) Promotion adaptation: measured with 1 item (the degree of adaptation on Likert scale)	overall export performance (composite measure): - the extent to which the strategic goals of the export venture were achieved - the average annual growth rate of export sales over three years -the management's perceived success of the venture	(+) both for product and promotion adaptation	/
Sousa and Lengler (2009)	Product adaptation (4-items scale) Price adaptation (4- items scale) Distribution adaptation (3-items scale) Promotion adaptation (4 items scale)	composite measure of EP which includes: export intensity, export market share, and meeting managers' expectations	(+) product adaptation (-) price adaptation (-) distribution adaptation (+) promotion adaptation	/
Navarro et al.	Adaptation of	export managers'	(0) direct	/

(2010)	marketing strategy: the extent to which firm adapts the four marketing tactics in foreign markets compared to its home market (one item for every element of marketing mix)	satisfaction with EP in terms of five objectives: growth of export sales, image of firm in foreign markets, profitability of export business, market share, and international expansion	relationship was not significant, but the results confirm an indirect relation between adaptation and EP via perceived competitive advantages	
Tantong et al. (2010)	Product adaptation: 3-item scale (the level of adaptation of design, brand and quality of the product)	composite measure of economic dimension of EP (managers' subjective assessment of: export profitability, export sales and export sales growth)	(0) the only significant and positive relationship was found between design adaptation and EP	market orientation strengthens the relationship between design adaptation and EP
Ruzo et al. (2011)	Adaptation of marketing strategy: the level of adaptation of the marketing-mix elements (one question for every element)	-objective performance (growth in export sales in the past three years) -subjective performance (the degree of satisfaction with the achievement of five export objectives in the past three years (Authors defined following export objectives: sales growth, reputation, profitability, market share and international expansion))	(0) between adaptation and objective EP (+) between adaptation and subjective EP	/
Zaiem, Zghidi (2011)	Product adaptation: the degree of adaptation of 10 elements: positioning, design, quality, features, brand, packaging, ...)	-composite measure- STEP scale (This study uses composite measure of short-term EP improvement which was developed by Lages and Lages (2004).)	(+)	/
Magnusson et	Adaptation of	-composite	(0)	export manager

al. (2013)	marketing strategy: the degree of adaptation of each element of marketing mix (one question i.e. item for every dimension)	measure of EP (managers' subjective assessment of how competitors rate EP of their firm and how customers rate EP of their firm, managers' assessment of export profitability, export sales growth and the assessment of the degree to which export strengthened strategic position of their firm)		cultural intelligence (metacognitive CQ) positively moderates the relationship between adaptation and EP
Navarro-Garcia et al. (2014)	Adaptation of marketing strategy: second-order reflective construct comprising four dimensions: product (6 items), price (5 items), promotion (6 items) and distribution (4 items) adaptation	composite measure of EP: formative construct, with two formative dimensions: qualitative (managers' global satisfaction with the EP) and quantitative EP (export sales growth and export propensity in the last three years)	(+)	export market orientation positively moderates the relationship between adaptation and EP
Kahya and Dean (2014)	Adaptation of marketing strategy: One item for every element of marketing mix	export sales revenue (export \$/number of employees)	(0)	/
		export intensity	(+)	
		export intensity growth	(0)	
Cunha and Rocha (2015)	Product adaptation (4 items) Promotion adaptation (4 items)	composite measure of EP which includes: export sales growth, perceived success of international venture, profitability, and initial strategic objectives achievement	(0) product adaptation (0) promotion adaptation	/
Erdil and Özdemir	Adaptation of marketing-mix	composite measure of EP that includes:	(+)	/

(2016)	strategy: measured using six items adopted from Porter (1985) and Helm and Gritsch (2014)	export sales per employee, export intensity and export intensity growth		
Fuchs, Köstner (2016)	Product adaptation (5 items) Promotion adaptation (5 items) Price adaptation (3 items) Distribution adaptation (3 items)	export sales growth	(0) product (0) promotion (+) price (+) <u>distribution</u>	/
		profitability of export venture	(+) product (0) promotion (0) price (0) <u>distribution</u>	
		goal achievement	(0) for all the elements of adaptation strategy	
		overall success of an export venture	(+) product (0) for other elements of adaptation strategy	
Navarro-García et al. (2016)	Adaptation of the marketing strategy: second-order reflective construct defined by product (3 items), price (3 items), communication (6 items), and distribution adaptation (4 items).	strategic EP (export intensity, number of exporting countries)	(+)	/
		operational EP (export sales growth, managers' satisfaction with EP)	(0)	
Virvilaite and Seinauskiene (2016)	Adaptation of marketing strategy: Product adaptation (8 items) Price adaptation (6 items) Promotion adaptation (5 items) Distribution adaptation (3 items)	Satisfaction with export performance	(0) adaptation strategy (+) distribution adaptation (0) product, price, promotion adaptation	the relationship between the distribution adaptation and export performance is moderated by cost leadership
Westjohn and Magnusson (2017)	Adaptation of marketing strategy: second-order construct reflected by three factors (price was eliminated):	composite measure of EP: meeting expectations in export market in terms of sales, market share, and overall marketing	(+)	psychic distance and international experience positively moderate the relationship between

	discretionary product adaptation, discretionary promotion adaptation, and discretionary channel adaptation	success		adaptation of marketing strategy and EP while product positional advantage negatively moderates it
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Source: Authors' research

The way adaptation is measured can greatly affect the outcome of the research. The biggest problem observed in the reviewed studies is that the authors independently create measurement scales and there is no unified way to measure the level of adaptation of marketing strategy and its elements. There are differences in formulation of the items, as well as in the number of items incorporated in the scale. Another problem that is noticed is that some authors (10 studies found) measure the level of adaptation with only one item (one question in the questionnaire), which is rather vague and imprecise way of measurement, as it can not capture all of the aspects of the defined variable.

A similar problem can be noticed in the way EP was measured, but there is already a lot of discussion on this topic in the literature (see: Sousa, 2004; 2008; Chen et al., 2016). In the observed period, there were seven studies found that use only one EP indicator (export sales volume - one study, profitability - two studies, overall satisfaction with EP - three studies). Authors mainly used self-developed measures of the EP. Out of 29 uncovered studies, 18 studies used a composite measure of EP which included both strategic and economic dimension of EP (14 studies) or EP was measured as the overall success of export activities subjectively assessed by managers on multi-item scale (four studies). Relatively little attention was devoted to the strategic component of EP in the observed period. Only three out of 29 studies separately examined the strategic dimension of EP (it was defined as the level of the achievement of strategic goals). This indicates that there is a gap in the literature that needs to be filled. Since the EP indicators used are numerous, and in order to facilitate the observation of discovered links, the findings of the reviewed studies are summarized in Table 5.

Table 5. Summary of the relationship uncovered between adaptation and its elements and EP indicators

Marketing strategy element	export sales	export sales growth	export intensity	export intensity	export profit	composite measure of achievement of export goals	satisfaction with overall EP	composite measure of EP	Σ
adaptation (composite measure)	1(0) 2(0)	1(+) 2(0)	2(+) 1(0)	1(0)	/	1(+) 1(0)	3(0)	5(+) 2(0)	9(+) 11(0)
product adaptation	1(+) 1(0)	1(+) 1(0)	2(+) 1(0)	/	3(+)	1(+) 1(-)	4(+) 1(0)	3(+) 4(0)	15(+) 8(0) 1(-)
promotion adaptation	/	1(+) 1(0)	2(0)	/	1(0)	1(+) 2(0)	1(+) 2(0)	1(+) 3(0)	4(+) 11(0)
price adaptation	1(+)	1(+)	1(0)	/	1(0)	1(-)	2(0)	1(+) 2(0)	1(0) 2(-)
distribution adaptation	/	1(+)	1(0)	/	1(0)		2(0)	1(0) 1(+)	1(0) 2(+) 6(0) 1(-)

Source: Authors' research

A glance at Table 5 reveals that the results are diverse, inconsistent and sometimes even contradictory.

Product adaptation as an element of a marketing program attracted the most attention of researchers. In 24 out of 29 studies, authors separately examined the impact of product adaptation on some indicator of EP. Positive and statistically significant relationship was established 15 times; in most of the cases with profit measures, as well as with the overall EP.

In the observed period, authors devoted a lot of attention to examination of the overall level of adaptation. Among the 20 tested relationships, 11 were statistically insignificant. The studies that examined the impact of the level of adaptation on the composite measure of EP in the majority of cases reported statistically significant results, as well as those that used individual indicators like export sales growth and export sales intensity.

Regarding promotion adaptation, the results are twofold, although most authors who dealt with this issue reported on statistically insignificant results. A positive link was established only with composite measure of economic dimension of EP and with export sales growth.

While price adaptation showed to have a positive effect on export sales and export sales growth, it is surprising that some authors report about negative link

between price adaptation and economic dimension of EP. Such inconsistent results indicate that there is a need for further investigation of this relationship.

Distribution, as an element of marketing mix, rarely appeared in the studies found in the observed period. Based on the uncovered relationships, it is difficult to predict how this element will influence EP, given that a positive relationship with the export sales growth has been discovered, a negative relationship with economic dimension of EP and a statistically insignificant relationship with export profitability and export intensity.

In order to better understand relationship between adaptation and EP, the authors included moderating variables in their research frameworks e.i. factors that can strengthen or weaken the relationship between adaptation and EP. Authors examined various moderators in the observed period, such as cultural distance, economic distance, psychic distance, international experience, cultural intelligence and they have shown to have a positive moderating effect on the relationship between adaptation and EP. On the other hand, product positional advantage was shown to have a negative moderating effect, which means that in the presence of positional advantage, adaptation will not contribute to the increase in EP.

In the studies found, little attention was devoted to intermediate factors. Only two studies include them in their research framework. Navarro et al. (2010) report about mediating effect of competitive advantage on the relationship between adaptation and EP, which means that adaptation positively affects EP but only if the firm has competitive advantage. Kalerakis et al. (2008) discovered that product adaptation has an indirect effect on EP through cooperation.

Apart from mediating and moderating variables, it is also important to establish which factors are related to implementation of adaptation strategy. In the relevant literature, these factors are known as antecedent factors. Even though antecedent factors are crucial for understanding of the relationship between adaptation and EP, not all of the authors in the observed period included them in their research frameworks. Table 6 summarizes the results of the found studies that tested the impact of some antecedent factor on adaptation of some element of marketing strategy or on the level of adaptation of marketing strategy as a whole.

Table 6. Antecedent factors tested and the relationships found

Authors	Antecedent factors		Studied elements of international marketing strategy
O'Cass and Julian (2003)	firm specific characteristics (product uniqueness, international experience,	(+)	adaptation of the marketing strategy

	supportiveness, resource commitment)		
	environmental characteristics (competitive intensity, legal- political environment, channel accessibility, customer exposure)	(+)	
Calantone, et al. (2004)	responsive marketing organization	US (0) South Korea (+)	product adaptation
	customer- oriented practices	US (+) South Korea (+)	
	relevant experience of business unit	US (+) South Korea (-)	
	similarity in the legal environment of the home and export markets	US (-) South Korea (+)	
Lages and Montgomery (2005)	management international experience	(+)	price adaptation
	export assistance	(+)	
	export market competition	(0)	
Calantone, et al., (2006)	export dependence	(+)	product adaptation
	openness to innovation	(0)	
	industry adaptation	(+)	
	market similarity	(-)	
Lages et al. (2008)	firm's commitment to exporting	(+) product adaptation	product adaptation
		(0) price, promotion, distribution adaptation	
	firm's international experience	(0) insignificant effect on adaptation of all the elements of marketing strategy	price adaptation
		(+) product, promotion, distribution adaptation	
	export market development	(0) price adaptation	promotion adaptation
		(0) insignificant effect on adaptation of all the elements of marketing strategy	
	prior period export intensity	(+) product adaptation (0) promotion, pricing, distribution adaptation	distribution adaptation

		prior period perf. achievement	(+) promotion adaptation (0) product, pricing, distribution adaptation	
		prior period performance satisfaction	(-) distribution adaptation (+) promotion adaptation (0) product, pricing adaptation	
Mavrogiannis et al. (2008)	management	(+)	adaptation of marketing strategy	
	export competencies	(+)		
	export market attractiveness	(+)		
	similarity of export and domestic market	(0)		
Sousa and Bradley (2008)	environmental differences between the home and foreign markets	(+)	price adaptation	
	number of export markets	(-)		
	manager's international experience	(-)		
Oyeniyi (2009)	product uniqueness	(0)	product adaptation	
Sousa and Lengler (2009)	differences between home and foreign country	(+) product, price, distribution and promotion adaptation	product adaptation, price adaptation, distribution adaptation, promotion adaptation	
Navarro et al. (2010)	export commitment	(+)	adaptation of marketing strategy	
Ruzo et al. (2011)	available scale resources	(+)	adaptation of marketing strategy	
	available experiential resources	(+)		
	available structural resources	(+)		
Zaiem and Zghidi (2011)	firm's size	(0)	product adaptation	
	company's export experience	(0)		
	type of product (industrial vs consumer)	consumer goods are more susceptible to be adapted to foreign markets than industrial products		
	business segment of	(+)		

	the exporting company		
Magnusson et al. (2013)	environmental differences	(+)	adaptation of marketing strategy
Navarro-Garcia et al. (2014)	turbulence (market and technological)	(+)	adaptation of marketing strategy
	competitive intensity	(+)	
	psychological distance	(+)	
	export market orientation	(0)	
Cunha and Rocha (2015)	entrepreneurial marketing driven by planning	(-) product adaptation (+) promotion adaptation	product adaptation promotion adaptation
	entrepreneurial marketing driven by intuition	(+) product adaptation	
	firm international competence	(+) product adaptation	
	firm international competence	(+) promotion adaptation	
	product experience	(+) product adaptation	
Erdil and Özdemir (2016)	firm characteristic	(0)	adaptation of marketing strategy
	environment characteristic	(0)	
	international commitment	(+)	
	international experience	(+)	
Fuchs and Köstner (2016)	export market experience	(+) price and distribution adaptation (0) product and promotion adaptation	product adaptation, promotion adaptation, price adaptation, distribution adaptation
	international commitment	(+) product, price, promotion, distribution adaptation	
	competitive intensity	(+) product, price, promotion, distribution adaptation	
Navarro-García et al. (2016)	human resources	(0)	adaptation of marketing strategy
	competitive intensity	(0)	
Virvilaite, Seinauskiene (2016)	differentiation strategy	(0)	adaptation of marketing strategy
	cost leadership strategy	(-) distribution adaptation (0) product, price, promotion adaptation	

Source: Authors' research

Regarding antecedent factors in the observed period, some similarities in the uncovered studies could be noticed. Internal factor which authors most often included in their research framework is international experience (export

experience or export competencies). In most of the cases, tested relationship was found to be positive and statistically significant (in eight out of 11 studies). Two studies report insignificant results on the relationship between international experience and adaptation and one study reports negative results. Other internal factors that were shown to have positive impact on adaptation or adaptation of some element of marketing mix were: available resources, export assistance, commitment to exporting. Customer satisfaction is one of the strategic categories for organizations (Daragahi, 2017). Thus, market orientation and customer orientation also drove authors' attention in the observed period, but the results were twofold. Two studies uncovered positive and one study uncovered insignificant relationship between market orientation and adaptation strategy. Regarding external factors, authors usually tested the relationship between competitive intensity and adaptation. From six studies that examined this relationship, three studies report on insignificant and three studies report on positive results. Another external factor that was frequently studied was the difference between home and export market and this factor appeared in researches in different forms like: similarity/distance between home and export market. In most of the cases, it was shown that the more export market differs from the host market, the higher the level of adaptaion is.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

Considering the great importance that the relationship between adaptation strategy and EP has in international business and marketing literature, a review of the empirical studies published in the period 2002-2017 was conducted. Systematic bibliographic search revealed 29 studies which examined the relationship between adaptation starategy or the adaptation of some element of marketing program and EP in the observed period.

Findings of the reviewed papers are diverse and inconsistent. It can be noticed that the elements of marketing program, as well as the adaptation strategy as a whole, have different effect on different EP indicators. In the observed period, product adaptation was the most frequently examined element of the marketing program. The vast majority of the relationships have been confirmed, which leads to the conclusion that product adaptation will positively affect EP. Particularly important are the findings that clearly show the positive impact of the product adaptation on export sales and export profitability, since these are the most important economic indicators of EP. It would be useful to verify these results in different external settings. Adaptation strategy, as a whole, also attracted the attention of researchers in the observed period but the results are twofold. Approximately half of the studies that tested the relationship between adaptation and EP report on positive results and the other half report on statistically insignificant results. Regarding other elements of the marketing program, findings are unclear and evidence is scarce. Given the inconsistent results, it is necessary to further examine these relationships.

Drawing final conclusions is hard due to the numerous ways in which EP was measured. Therefore, in future research, it is advisable to use affirmed measures of EP that were already used by renewed authors. It is also preferable to use more than one indicator to measure EP and to examine EP through all of its dimensions in order to gain clearer insights in the nature of the relationship between adaptation and EP. In addition, in the observed period little attention was devoted to the impact of adaptation on strategic outcome of export activities. Thus, it would be valuable to include strategic dimension in future research frameworks.

The inconsistent results are partly the consequence of the inconsistency in the way authors measure adaptation strategy. If more precise and comparable results are to be achieved, a unified measurement scale has to be developed. Future research could be based on the exploration and formulation of a unique scale for measuring adaptation. This would greatly facilitate the comparison of the results from different studies.

In the observed period, increased influence of the contingency approach can be noticed, which is reflected in the increasing inclusion of moderator variables. Mediator variables were rarely tested, only two studies report on indirect effects through which adaptation influences EP. Thus, it would be beneficial to further examine intermediate factors through which adaptation can affect EP.

Apart from the fact that confusing empirical findings require further examination of the relationship between adaptation strategy and EP, review of the uncovered studies revealed some additional gaps in the literature. This primarily relates to the country in which the research was performed. Studies from developing countries are rare, implying the need for researchers from less developed countries to engage in the research of this important topic.

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