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THE IMPORTANCE OF PROFESSIONAL SKILLS FOR PROFESSIONAL DEVELOPMENT IN THE FIELDS OF INNOVATIVE MANAGEMENT, LEADERSHIP, AND COMMUNICATION

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Abstract: *Within the framework of development of the Erasmus + Joint online program for professional development in innovative management, leadership and strategic communication ("e-PROFMAN"), we researched the professional development needs and expectations of employers for professional skills, the most frequent obstacles to efficiency of human resources in companies/organizations, and the most common personal needs of professional knowledge of the young people in the areas of innovative management, leadership and strategic communication in six countries: Bosnia & Herzegovina, Croatia, Macedonia, Serbia, Slovenia, and Turkey. In this paper we present some interesting findings from an online survey of five countries (Bosnia & Herzegovina, Croatia, Macedonia, Serbia, and Slovenia). The survey results will help us to develop and create the curriculum for the online lifelong learning professional development program in the field of innovative management, leadership and strategic communication.*

Keywords: *professional skills, innovative management, leadership, strategic communication, professional development, survey results*

1. INTRODUCTION

The European Communication Monitor (ECM) reports that between 2007 and 2015 '*linking communication and business strategy*' has been identified as the most enduring challenge for communication professionals within the next years and how to build and maintain trust for the business of the organization in a digital era where active audiences have their own social media, demand transparency and produce enormous volumes of information at high-speed (Zerfass, Verčič, Verhoeven, Moreno, & Tench, 2015; Verčič, Verhoeven, & Zerfass, 2014; Zerfass, Tench, Verčič, Verhoeven, & Moreno, 2014; Zerfass, Moreno, Tench, Verčič, & Verhoeven, 2013). Interviewed professionals said that most important factors for career development are further education and networking among peers and colleagues. Interviewees said that the three most important factors for career development and obtaining their current work position are further education' on or off the job, and networking among peers and colleagues.

Furthermore, the European Commission's Opening up Education Initiative (European Commission, 2013) stimulates the development new business and educational models of curriculum development, more open learning environments and innovative ways of teaching and learning through new technologies and digital content. The initiative proposes developing new business and educational models of curriculum development and OER in different languages.

This process is entirely applicable to professions like management and communication, which reflect the importance of globalization, entrepreneurship, and ICT in today's business environment. Young people should have a competitive edge in a rapidly changing transnational market.

Within the framework of the Erasmus + Joint online program for professional development in innovative management, leadership and strategic communication ("e-PROFMAN"), DOBA Faculty of Applied Business and Social Studies Maribor (Slovenia), together with the School of Journalism and Public Relations Skopje (Macedonia) and the University of Istanbul (Turkey) intends to develop a professional online education program to equip the program`s participants with appropriate skills and abilities to achieve a competitive advantage and effective leadership behavior in a transnational corporate environment. With this program, we would promote progressive pedagogical approaches, virtual mobility, intercultural cooperation and internationally recognized competences. The project will provide dissemination of teaching and learning innovations in in countries from Central Europe to Turkey; open and expand access to open education resources (OER); and transnational networking through mutual recognition of knowledge and skills, fully in line with the Bologna credit-transfer system.

Even before the preparation of the curriculum for the online professional program as a part of lifelong learning, we studied the most common obstacles that get in the way of the effectiveness of human resources in companies/organizations, and the most common personal needs of professional knowledge in the areas of innovative management, leadership and strategic communication. In this context, we are particularly interested in the skills and trends in innovative management, leadership and strategic communications.

2. LITERATURE REVIEW

CEDEFOP (2014) prepared a Terminology of European education and training policy with a selection of 130 key terms, including skill, basic skills and new basic skills. The definitions are as following. Skill: "The ability to perform tasks and solve problems." Basic skills: "The skills needed to live in contemporary society, e.g. listening, speaking, reading, writing and mathematics." New basic skills: "The skills such as information communication technology skills, foreign language, social, organizational and communication skills, technological culture, entrepreneurship.

Skills have a major impact on each individual's life chances as well as enterprises and countries in today's globally connected and complex world, as analyzed by an OECD (2013) survey of adult skills (PIAAC). The survey focuses on the skills of literacy, numeracy and problem solving. As individuals age and spend more time out of education, other factors become increasingly important for enhancing and maintaining these skills. These are participation in adult learning activities, the tasks they perform at work and engagement in activities involving the use of literacy, numeracy and problem-solving skills outside of work. OECD (2012) also prepared the OECD Skills Strategy, an integrated, cross-government strategic framework to help countries understand more about how to invest in skills, to transform lives and drive economies. One of these activities is the development of skills through education, which should result from labor market needs. This is also the focus of our study and the project e-PROFMAN.

Chell (2013) stresses that there are a set of baseline skills that young people learn thorough education. They are then built upon through experience and training. These skills are for life, employability and entrepreneurial/innovative capability. Leitch (2006) recommends investing in the following skills: literacy and numeracy of young people to improve their chance of employability, enhance productivity at company-level, and competitiveness internationally.

Katz (1955; 1974) first argued the importance of identifying management skills for successful performance in managerial roles. He proposed a three-category typology of skills - technical, human and conceptual. These are general categories, but within each category, more narrowly focused abilities could be identified. Management authors (Peterson & Fleet 2004; Bigelow 1991; Carrol & Gillen 1987) believe that only a set of managerial skills, coupled with technical skills enable managers to manage effectively. Davis et al. (1996) emphasizes that a successful manager and an effective leader should have certain skills: be able to communicate clearly, resolve conflicts, analyze problems, coach and develop subordinates, and make decisions. Burke and Collins (2001) in their study analyzed the following management skills: delegating, conflict management, coaching and developing, personal organization and time management, communicating, personal adaptability, problem analysis and decision-making, and their association between leadership styles.

In our study, we are interested in the importance of certain management and leadership skills to fill the vacancies in companies/organizations: organizational skills, problem-solving skills, making strategic decisions, strategic planning and creative thinking.

The history of the discipline of communication is the story of identifying, investigating, and teaching social skills. There is also an ethical aspect to communication skills in that they can be used for good or ill. The integration of behavioral and psychological approaches has been, and continues to be, one of the greatest challenges in the study of communication and social interaction skills.

Within the field of public relations, practitioners have been noted to assume a variety of roles, which are necessary specific competencies, knowledge and skills. Dozier (1992) distinguishes between the managerial and technician role of communicators: “Managers make policy decisions and are held accountable for public relations program outcomes,” whereas “technicians carry out the low-level mechanics of generating communication products that implement policy decisions made by others” (p. 333). He argued that communication managers enact elements of the expert prescriber, communication facilitator, and problem-solving process facilitator roles whereas the communication technician role could be conceptualized as separate and focuses on the technical aspects of public relations work. The top communicator plays a strong managerial role and participates in strategic planning and programming for the organization, and has close partnerships with the dominant coalition of the organization (David M. Dozier, Grunig, & Grunig, 1995; Grunig, 2008; Grunig et al., 1992). Skills and competencies required for most occupations today differ from those required in the twentieth century due largely to the emergence of complex information and communication technologies. Arising from this dual role of communicators, the following main communication skills are required: social and intercultural skills, information literacy, analytical, critical thinking and problem solving skills, strategic communication planning, digital/social media use, and intercultural communications.

In our study, we are interested in the importance of certain communication skills to fill the vacancies in companies/organizations: strategic communication planning, digital/social media use, intercultural communication, marketing communication, issues management, and risk and crisis communication.

3. METHOD

The survey is based on a questionnaire, and was conducted online by using 1ka.si web platform, developed by the Faculty of Social Sciences of the University of Ljubljana. The survey was carried out from 15 January to 15 February 2016 in six countries: Bosnia and Herzegovina, Croatia, Macedonia, Serbia, Slovenia, and Turkey. The simple random sampling consisted of representatives from various levels of employees and management from public, private and non-profit organizations, students from three higher education institutions and unemployed graduates. Most of the questions were closed-ended with a 7-point Likert scale of possible answers. In some survey questions, it was possible to give multiple answers.

The online questionnaire consisted of four sets of questions:

I. About professional development needs and expectations of employers for professional skills in management, leadership and communication (only managers answered these questions).
II. About obstacles in the efficiency off the human resources in companies / organizations and personal needs for professional development – all who are employed answered these questions.
III. About trends in the business environment, innovative management, leadership, and strategic communication – all respondents answered these questions.
IV. About the company / organization profile and personal background of respondents (socio-demographic questions).

Respondents who were not identified as a managers, students or unemployed, started to answer questions about the obstacles and needs for professional development.

4. RESULTS AND DISCUSSION

Answers from 1,305 respondents were received; the realized sample consisted of 33 % of managers (at all three levels - at 12 % peak managers and middle management and 9 % first-line managers), 35 % of respondents were employed at different organizational levels and 32 % of students and the unemployed. In this paper, we present only some results for the first five countries, which were until 25 years ago in the same state, Yugoslavia: Bosnia and Herzegovina, Croatia, Macedonia, Serbia, and Slovenia.

Professional development needs and expectations of employers

The surveyed managers consider that the most important managerial and leadership skills to fill the vacancies in their organizations are problem solving, as they gave an average assessment of 6.47 on a 7-point Likert scale. Following by importance, are organizational skills (average score 6.33), creative thinking (6.27), the ability to make strategic decisions (5.85), and the ability to network (5.84). Problem solving is the most important managerial skill in filling vacancies in their companies for managers in Croatia (score of 6.47 on a 7-point Likert scale), Serbia (score of 6.82) and Slovenia (score of 6.26). Organizational skills are most important for the managers in Bosnia and Herzegovina (6.62), and creative thinking is the most important skill for managers in Macedonia (6.55).

Issue management, risk and crisis communication are the most important communication skills when recruiting personnel for the surveyed managers of all the countries considered, except for the surveyed managers from Macedonia – in their case, digital / social media use is the most important communication skill.

The surveyed managers from Serbia are the least satisfied with the skills of employees (average score of 4.28 on a 7-point scale Likert), and the most satisfied respondents are managers from Macedonia (average score of 4.99). The surveyed managers from Bosnia and Herzegovina (average score of 4) and Slovenia (average score of 4.1) are the least satisfied with systemic thinking approach of their employees, and Bosnian (with average score of 5) and Serbian surveyed managers (average score of 4.6) are the most satisfied with practicality - the ability to use knowledge (hands on know-how) of their employees. The surveyed managers from Croatia are the least satisfied with the digital / social media use literacy of their employees (average score of 4) and the most satisfied with the communication and collaboration of their employees (an average score of 5). Managers from Macedonia (average score of 5.3) and Slovenia (4.9) are the most satisfied with the information literacy of their employees. Finally, the surveyed managers from Serbia are the least satisfied with creativity and innovation, and flexibility and adaptability of their employees (both times the average rating 4).

The most frequent obstacles in the efficiency of human resources in companies

In all of the five countries, according to the surveyed managers, the biggest obstacles in the effectiveness of human resources in organizations are problem solving skills, communication skills, creative and critical thinking skills. Respondents therefore consider that the obstacles are more in soft skills than hard skills (see Image 1).

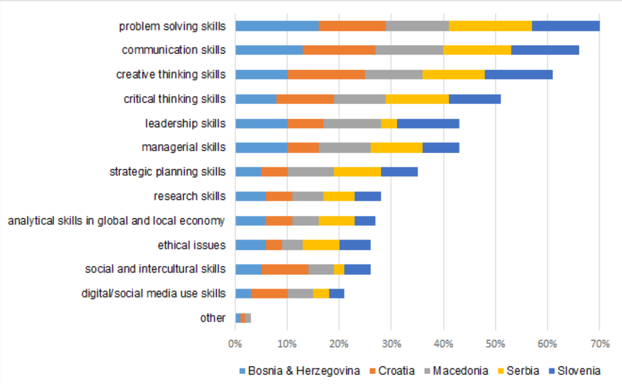

Image 1: The most frequent obstacles in the effectiveness of human resources in organizations (1.533 answers).

70 % of respondents stated that the biggest obstacle in the efficiency of human resources in their organizations is the lack of problem solving skills, not to mention the lack of communication skills and creative thinking skills.

Soft skills also prevail in response to a question regarding personal needs for professional development, since they are among the top five along with only one so-called hard skill (strategic planning skills), as can be seen in Image 2 below.

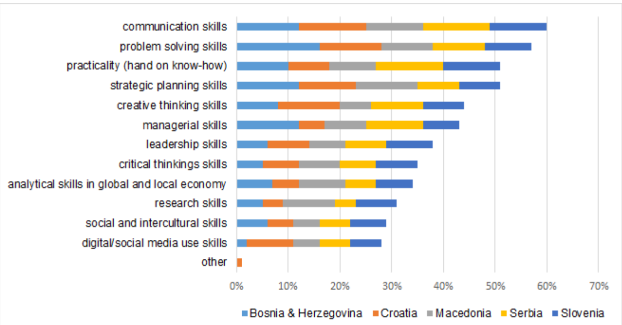

Image 2: The most frequent personal needs for the effectiveness of human resources in organizations (1.528 answers).

The importance of trends in business environment, innovative management, leadership and strategic communication

Not only do respondents on average give the highest rating to the importance of '*knowledge and information as a source of competitive advantage and the challenge of security of cyberspace*' as a trend in business environment, but also show the highest differences in assessing the significance of this trend. Respondents from Croatia, Serbia and Slovenia provided the highest value of this trend, while respondents from Bosnia and Herzegovina marked '*mobility in production and consumption'* as the most important trend. Respondents from Macedonia consider that 'the new ('social networks') technologies led to rethinking consumption' is the most important trend in the business environment. Respondents in all countries gave the lowest importance to the trends of '*the potential for radical political shifts is rising'*, '*cross-border investments'* and '*reshaping the financial system'* (see in Image 3 below).

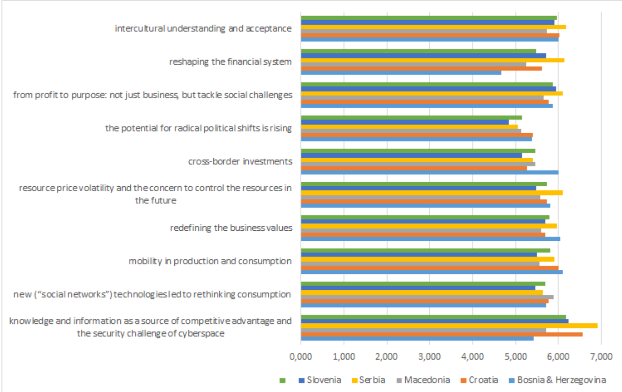

Image 3: The importance of trends in business environment

Respondents in Bosnia and Herzegovina, Croatia and Slovenia consider that the most important trend in innovative management is '*stronger cross-industry collaboration*'. Respondents from Macedonia believe that the most important trend is '*internal expert innovation networks / intra-company crowdsourcing*'. Respondents from Serbia however, indicate that the most important trend is '*organizations can demand a direct contribution of innovation to reach business goals*' (see Table 1).

Table 1: The importance of trends in innovative management

Please rank the importance of the following statements about some of the key trends in innovative management	Bosnia & Herzegovina	Croatia	Macedonia	Serbia	Slovenia
co-creation process using hybrid online/offline methods and gamification	5,19	5,14	4,88	5,32	5,29
innovation becomes more entrepreneurial	5,43	5,92	5,52	6,05	5,71
organizations demand a more direct contribution of innovation to reach business goals	5,47	5,84	5,49	6,09	5,57
stronger cross industry collaboration	5,95	6,03	5,59	5,96	6,21
internal expert innovation networks / intra-company crowdsourcing	5,90	5,89	5,77	5,96	5,77

It appears that respondents from all countries, except for Macedonia, are most uniform in assessing the significance of trends in leadership with the most important trend in leadership being '*reaching goals, achieving productivity and engaging employees*'. Respondents from Macedonia however give a slightly higher priority to the trend '*talent development and empowering employees throughout'*.

'*Linking communication and business strategy'* is the most important trend in strategic communication for respondents from Macedonia, Serbia and Slovenia. In light of the results of the ECM it is needed to be understood that this as a concern regarding building and maintaining trust between business and the organizations. For respondents from Bosnia and Herzegovina the most important trend in strategic communication is '*social media impact on communication*', and for respondents from Croatia, it is '*dealing with the speed and volume of information flow'* (see Table 2 below).

Table 2: The importance of trends in corporate communication

Please rank the importance of the following statements about some of the key trends in strategic communication:	Bosnia & Herzegovina	Croatia	Macedonia	Serbia	Slovenia
social media impact on communication	6,43	6,18	5,99	6,09	5,62
linking communication and business strategy	6,38	6,13	6,12	6,59	5,92
dealing with the speed and volume of information flow	6,29	6,21	6,10	6,55	5,85
integrated communication, content creation, storytelling, native advertising, brand journalism, etc.	6,24	6,11	6,06	6,32	5,76
integrating communication by intra-organizational collaboration	6,05	5,95	5,85	6,18	5,70

Generally, the most important trends in strategic communication are '*linking communication and business strategy*', '*dealing with the speed and volume of information flow*' and '*integrated communication, content creation, storytelling, native advertising, brand journalism, and so on*'. The less pronounced trend is '*integrating communication by intra-organizational collaboration*'.

5. CONCLUSION

The survey results will help determine the specific needs of organizations in the private, NGO and public sector for knowledge and skills of their employees for effective market presence. They will also help us develop and create the curriculum for the joint online lifelong learning professional development program in the field of innovative management, leadership and strategic communication. During the one-year program, young working practitioners and bachelor students with no previous professional work experience will master innovative management, leadership, and communication skills for management positions in a competitive transnational business environment.

The professional education program will have to follow the most important findings of the research presented here. The curriculum should be designed in a way that will put emphasis on the skills, which employers consider that their employees are in need of. At the same time, we will also have to follow the most important trends, and the most common personal needs for professional development as presented in the above results.

The participants will acquire skills and develop strategies on how to develop innovative services and products and use their creativity to introduce new ideas. The curriculum will prepare students to think strategically and critically and to be leaders of teams in any field - public or private, profit or nonprofit. The students will master the abilities for professional public relations practice and ethical decision-making in a communication management position. They will acquire skills and have detailed understanding of the forces that affect organizations and shape global society. That way, the curriculum will provide the participants and their present and future employers with a competitive edge in a truly transnational competitive environment.

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QUADRUPLE AND QUINTUPLE HELIX INNOVATION SYSTEMS: ARISE INTO THE FUTURE

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Abstract: *The Quintuple Helix innovation model is sensitive for social ecology and environment. It points out the importance of socioecological transition of society and economy. This model comprehends the helix of society and natural environment interactions. On the other side the Quadruple Helix innovation model includes relations between university, industry, government and media and culture based public and society.*

Keywords: *quadruple, quintuple, helix, innovation systems, innovations.*

1. INTRODUCTION

Environmental sustainability issues are an enormously important topic in the world today. Implementing arts, research, innovation, society and education in helix innovation systems is a must.

Innovation is complex, dynamic, adaptive socio technical, socio economical and socio political phenomena, it involves all stakeholders, and infect university, industry, civil society. Some major events can initiate changes. For example: Hurricane Sandy was major meteorological phenomena that impact eastern coast and flooded in US. In the United States Sandy affected 24 states, including the entire eastern seaboard from Florida to Maine and west, with particularly severe damage in New Jersey and New York. Its storm surge hit New York City on October 29, flooding streets, tunnels and subway lines and cutting power in and around the city. Damage in the United States amounted to $71.4 billion. But 2-5 years later corruption and inefficiency of government cause that most people affected by this hurricane stay without homes. Thousands of homeowners were denied their flood insurance claims based upon fraudulent engineers' reports, according to the whistleblowing efforts of one of engineer who claimed that at least 175 of his more than 180 inspections were doctored. Insurance companies got 0,5 billion profit. In this case civil society was under served in the US. Thousands of people sue government and insurance companies. As a result, lawsuit has been filed against several insurance companies and their contract engineering firms. Further, the Federal Emergency Management Agency reviewed all flood insurance claims in light of these allegations [1]. This case made changes in legislation, education, and industry practice, and research of reacts of environmental and society.

Innovation is complex, dynamic, adaptive socio technical, socio economical and socio political phenomena and it involves all stakeholders, and impact all dimensions': university, industry, civil society and of course environment. It is very important phenomena that drives the progress of society [2]. Invention and creativity creates a knowledge that is transformed in implied research, experimental development which later are produced in commercialization. Development history of all countries pay the price today and will pay in future. Specially regarding environmental changes.

2. INNOVATION MODELS

Need to relate science and technology with economy made theoretical framework for innovation models. One of the first was the linear model of innovation. Where innovation starts with basic research, applied research and development. It comes directly from V. Bush's Science: The Endless Frontier (1945) [3].

Basic research → Applied research → Development → (Production and) Diffusion

MODEL OF LINEAR INNOVATION MODELS

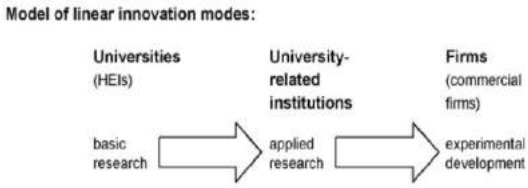

Image 1: Model of linear innovation models - Carayannis & Campbell (2009) [3]

As it can be seen at Image 1. Model of linear innovation consists of Universities, University related institutions and commercial firms. All of them had its own role: universities do basic research, university related institutions do applied research and commercial companies must take care of experimental development.

Linear and non-linear model of innovation

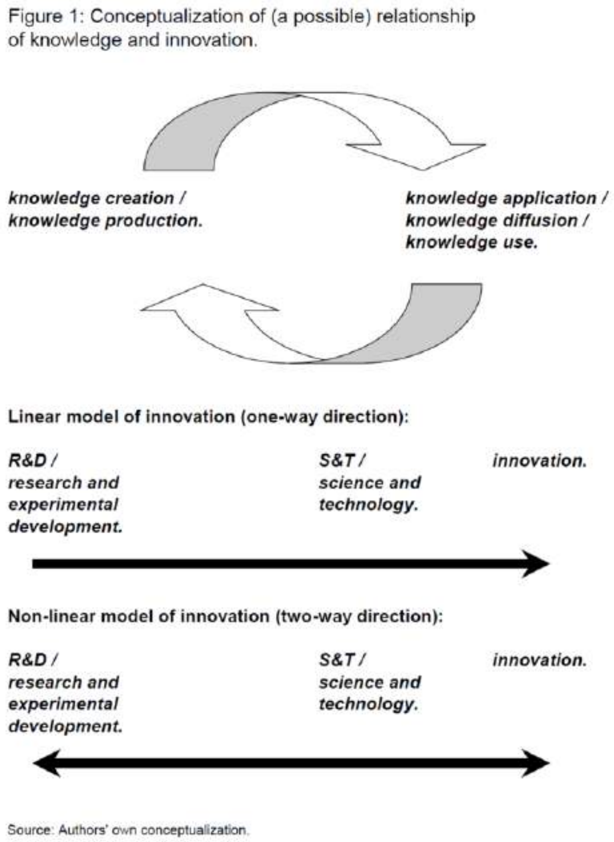

Image 2: Conceptualization of (a possible) relationship of knowledge and innovation [4]

At Image 2 is shown conceptualization of (a possible) relationship of knowledge and innovation. Linear model of innovation is one-way model, and non-linear model of innovation is two-way direction. Circle of knowledge creation and knowledge production with knowledge application, diffusion and finally use of knowledge.

Next Image 3 shows different societal system with lines of political (policy) influence. A political influence could be shown trough a specific political approach to economy, society and democracy.

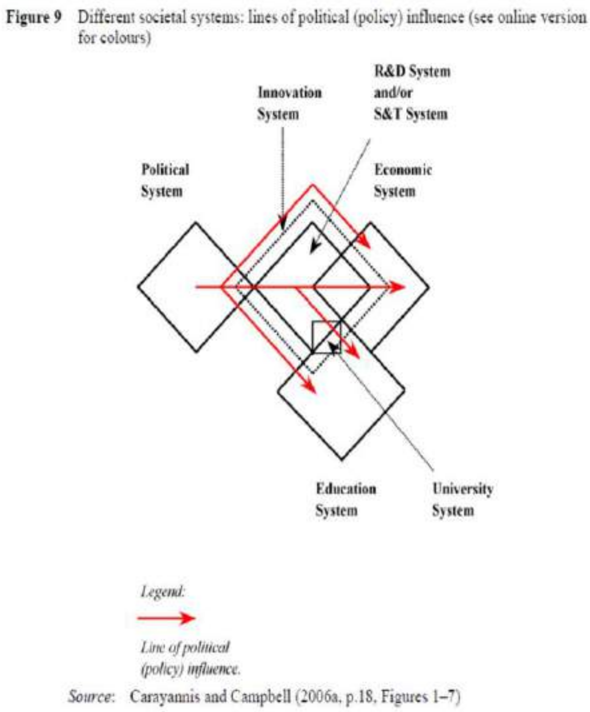

Image 3: Different social systems [3]

Politics may convert from a 'parliamentary representative' to a 'media presenting' democracy, where 'decision' politics moves to a 'presentation' politics. [3]

3. QUADRUPLE AND QUINTUPLE INNOVATION SYSTEMS

The 'Quadruple Helix' model stresses 4 'helices' that intertwine and by this generate a national innovation system: academia/universities, industry, state/government and "media-based and culture-based public".

Image 4 displays the Quadruple and Quintuple Helix Innovation Systems. 'Quadruple Helix' refers to structures and processes of the global knowledge economy and society. Moreover, the innovation ecosystem stresses the importance of a pluralism of a diversity of agents, actors and organisations: universities, small and medium-sized enterprises and major corporations, arranged along the matrix of fluid and heterogeneous innovation networks and knowledge clusters [5].

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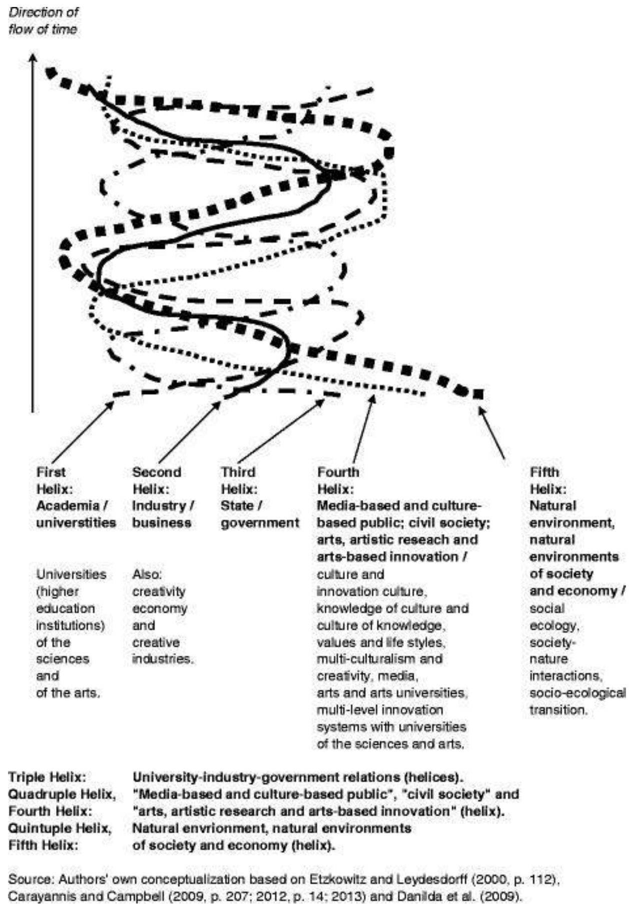

Image 4: The Quadruple and Quintuple Helix Innovation Systems [5]

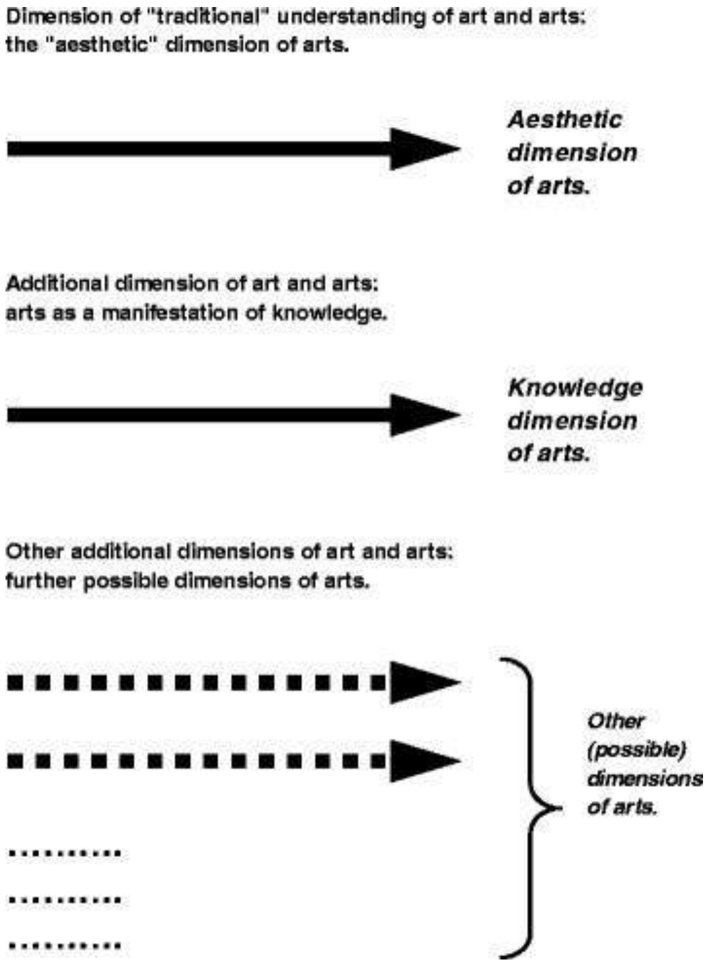

Image 5: Dimensions of Art and Arts [7]

"The Quintuple Helix supports here the formation of a win-win situation between ecology, knowledge and innovation, creating synergies between economy, society and democracy" [6].

4. DIMENSIONS OF CONCEPTUALIZATION AND MEASUREMENT OF ART AND ARTS

Art and arts can also be understood (and re-invented) as a manifestation of knowledge, knowledge production and knowledge creation [7].

Knowledge is shown as an additional dimension for defining and understanding arts, that extends the aesthetic dimension of arts, by this making the arts multi-dimensional as can be seen at Image 5.

We can say that forms of arts-based research and arts-based innovation are existing and can emerge further.

5. RELATION TO SOCIETY, ECONOMY, DEMOCRACY AND SOCIAL ECOLOGY

From the beginning, the media-based and culture-based public as well as universities and other higher education institutions of the arts were being regarded as crucial attributes and components of the Quadruple and Quintuple Helix innovation systems, implying that arts are essential for the progress and evolution of innovation systems [6].

The main goal of the Quintuple Helix is to include natural environment as a new subsystem for knowledge and innovation models. According to that natural environment becomes a central and equivalent component of and for knowledge production and innovation.

The natural environment is important for making of new green technologies, but also for the preservation, survival, and vitalization of humanity.

With the Helix of Natural Environment, 'sustainable development' and 'social ecology' become constituents for social (societal) innovation and knowledge production [6].

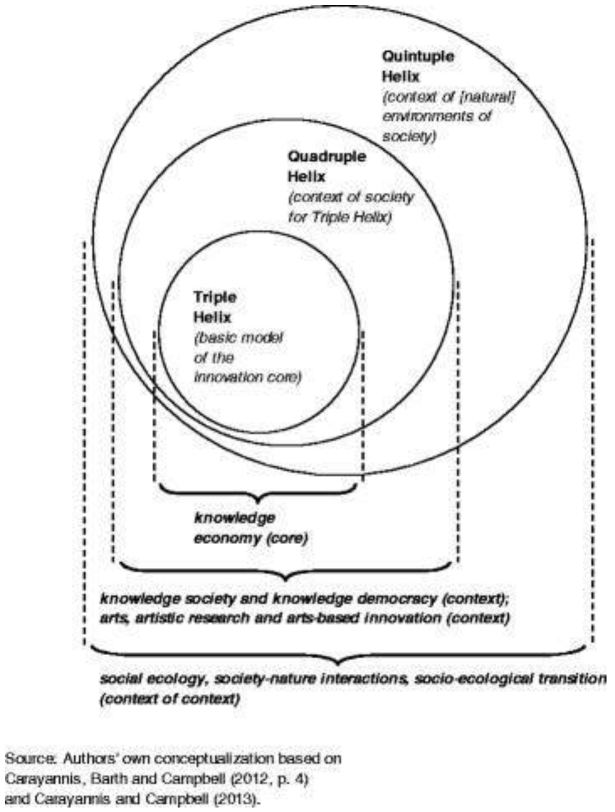

Image 6: The quadruple and quintuple helix innovation systems in relation to society, economy, democracy and social economy [6]

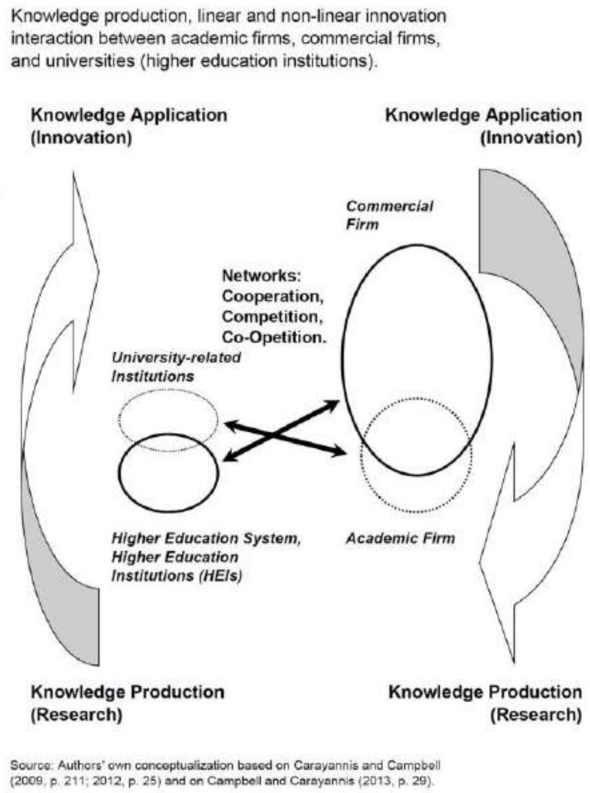

Image 7: Knowledge production – linear and non-linear innovation interaction between academic firms, commercial firms and universities

The basic innovation 'core model' of the Triple Helix focuses on the knowledge economy. Quadruple Helix already brings in the perspective of the knowledge society (and of knowledge democracy). From the point-of-view of the Quadruple Helix innovation model, it is evident that there should be a coevolution of the knowledge economy and of knowledge society [6] [9].

6. ENTREPRENEURIAL UNIVERSITIES

Main questions for further discussion are:

Does the formation of "entrepreneurial universities" (Mode 2 HEIs or HEI-subunits) or (more importantly) of "Mode 3 Universities/HEIs" also demand a formation of "academic firms" for fostering nonlinear innovation?

Will the outcome be a diverse and heterogeneous multi-level innovation system with: Mode 1, Mode 2 and Mode 3 universities (HEI-subunits), on the one hand, and academic and commercial firms on the other?

What are possible implications for (a re-definition of) basic research and of "basic research in the context of application"?

Group of helixes can be observed independently and how they interact. The creative component is important to see outside of box. It is important to give effort to try to create new concepts.

That is the place where universities and higher education institutions need to involve. Overall need for Entrepreneurial Universities is obvious. What we mean by Entrepreneurial University? The concept of the "entrepreneurial university" captures the need of linking more closely together university research with the R&D market activities of companies [7] [8].

Mode 1 shows a university that is not interested in knowledge application and innovation only in knowledge production that delivers comprehensive explanations of the world.

Mode 2 universities relay on following principles:

(1) "knowledge produced in the context of application";
(2) "transdisciplinarity";
(3) "heterogeneity and organizational diversity";
(4) "social accountability and reflexivity"; and
(5) "quality control" [10].

"Mode 2" universities and "Entrepreneurial Universities" overlap, at least conceptually.

A "Mode 3" university/higher education sector would be an organization or a system that operates simultaneously according to the two knowledge principles of Mode 1 and Mode 2.

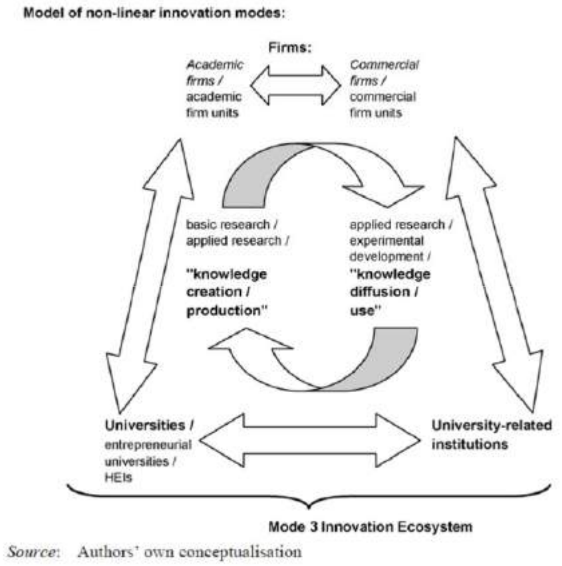

Image 8: Model of non-linear innovation models [11]

5. CONCLUSION

There are a lot of serious issues in the terms of Entrepreneurial Universities (public and private dimensions' commercialization of issues). The main question is: weather a publicly funded research could be concerned as public good. Also there are public and private dimensions. Budgets are reduced for researchers and companies want to solve the problems today, especially small and medium enterprises.

Entrepreneurial Universities and the academic firms create a mind set and a culture that is more strategy oriented.

The main questions are: How to transform small and medium enterprise? Issue here is what is the role of universities in this?

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ATTACHMENT AND PERSONALITY IN CONTEXT OF SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

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Abstract: *The empathic attitude towards nature, social, or ideological patterns depends on personality traits, just as the inability of bonding, the alienation and traumatic detachment, which generate critical difficulties in social, organizational or professional life and the environmental affairs. The panrelational ecodynamic M-E-O model includes the interwoven niches of natural, social, technological and infospherical environments of the human actor and its communities. Implication of attachment theory in the M-E-O model might help to elucidate the psychological background of insensitivity and detaching drives, which make people insensitive towards values, interests or sustainability of natural, social or intellectual surroundings. Creating links between the hostile, competitive dynamics of the so called ARESian economic habitus and the developmental psychology of A type behavior connected to anxious, avoidant secondary attachment organization offers common human ecological framework, which helps us to apply Angyal's concept of homonomy/autonomy in understanding place of human attitude in environmental sustainability.*

Keywords: *M-E-O model, attachment organizations, personality types, homonomy, heteronomy*

1. INTRODUCTION

The human-object hybrid concepts (hybrids and/or rhisomes) of Latour and Deleuze offer a special perspective for human ecological application of attachment theory in frame of reference of environmental sustainability of all kinds: social, infospherical, technospherical and natural.

Hybridization, the transient or enduring tight relationship of interactive human-non-human complexes might be framed in terms of actor-environment bonds, in frame of psychological attunement, commitment, intensive mutual agency in context of extended understanding of adult attachment. The empathic attitude towards nature, social, or ideological patterns create a deeply embodied and lived connection with the Significant Other, be they Homeland, cultivated or wild natural environment, intellectual tradition or even a technospherical „organism", equipment, software, technosystem, medical instrument and alike.

On the other hand the inability of bonding, alienation, traumatic detachment generates critical difficulties in social, organizational or professional life and the environmental affairs. Detachment and disconnection of the natural, social, technological and infospherical environments from each other for a longer period leads to unsustainability, also.

The panrelational ecodynamic tetrahedron of MEO model includes these interwoven nests and niches of natural, social, technological and infospherical environments surrounding the human actor and its communities. (1,2) Implication of attachment theory in the M-E-O model might help to elucidate the psychological background of insensitivity and detaching drives, which make people insensitivity towards values, interests or sustainability of natural, social or intellectual surroundings.

2. IWM IN THE M-E-O: ATTACHMENT IN HUMAN ECOLOGICAL CONTEXT

The M-E-O model is a human ecological explanatory model based on the tetrahedron environmental ecodynamic framework (1), where natural, social, technological and infospheric niches are permanently (re)constructed by the human actor along permanent in(ter)fluences, and these niches may relate to a different economical/ecological manner with each other. The MEO model implies coevolutionary processes based on the concept of niche construction (3,4), Kenneth Boulding's theory of ecodynamics (5) and the tetrahedron ecodynamic framework (1), in which interacting natural, social, technological and ideospheric niches - influencing each other in an ecodynamic (competitive, predating, symbiotic, neutral or saprophytic) manner through human agency. (6)

Human agency in this extended human ecological context is strongly shaped by personality, attitudes and habitus governed by the so called „Internal Working Model" (7) as a result of early social learning generating human ecological dispositions towards the natural, social and cultural environment. In the period of human imprinting, a baby is seeking a significant other, later to become a decisive part of the cognitive-emotional attachment system which might find its target beyond interpersonal dimensions in the objects of natural, social or abstract infospherical environments. Bowlby (7) called this the internal working model representing early social experience, the emotional arousal that influences the development of interpersonal relationships, perceptions and expectations (8). The IWM may also be shaped or distorted by natural conditions, technological milieu and rituals and belief system shaping maternal behaviour and child rearing as economic, sociopolitical and ecological factors are seen as constantly forcing shifts in interpersonal dynamics at the level of culture and family which in turn are bound to cause variations in internal working models.

The IWM is formed in the so called attachment organization. This attachment organization, which may be viewed as a symbiotic transactional psychophysiological and behavioural homeostatic ring of mother and child in the first year establishing a source of security (or stressful insecurity in case of bad-enough mothering).

The attachment organization is an early determinant of two basic human ecological features: the personal, social „habitus" framed in the concept of IWM (internal working model) and the internal psychophysiological pattern of stress response.

Maternal behaviour may provide security (which is sensitive, accepting, cooperative and always accessible). A mother who refuses such security to the child is described as being inconsistent, lacking response or showing refusal. The abusive, insensitive or negligent mothering might cause anxious, avoidant secundary attachment organization, where baby diminishes empathy towards mother, detaches him or herself from the mother. Babies compensate for the insecurity of this relationship in two ways, according to Ainsworth and Mary Main. One way is the A-type secondary attachment, the anxious avoidant secondary attachment organization, when the baby becomes relatively independent. If the baby suffers form uncertainty, nevertheless, evoking the attention of the mother, who compensates him/her for the transient insensitivity, an anxious/ambivalent pattern of attachment might emerge. This is the so-called C type secondary attachment. In this case, the baby develops an anxious attachment, high physiological arousal, inhibited aggression and low self-esteem. Children handicapped by insecure attachments are characterized by low self-esteem, low-motivation and performance, problems in social adjustment, and a weak sense of danger, which all are integrated part of cultural behaviour.

The different attachment organizations may be seen as metaphoric patterns of ecologic behaviour of independence/dominance (a dominant feature of A type personality), harmonic optimization and on the other pole submissive anxiety and worry (a dominant feature of C type personality). In frame of human ecological reference, the IWM formed in the given attachment organization works as human ecological cognitive schema, as long-term, enduring psychological structure, mode of processing and organizing information, including affects, that provide templates that guide and direct an individual's interactions in the interpersonal and impersonal world (9).

Hazan and Shaver constructed an analogous typology for Adult Attachment styles as well, with categories secure, dismissive-avoidant (as in A type) anxious-preoccupied (as in C type), and one additional: fearful-avoidant. These roughly correspond to infant classifications: secure, insecure-ambivalent, insecure-avoidant and disorganized/disoriented. That is why we found it very striking to see extremely high rate of the avoidant tendency (above 58%) of dismissive-avoidant (37,9%) and fearful avoidants (20,4%) together, while we found low, only 31,4% secure attachment of the informants based on the questions of the Adult Attachment Survey of Bartholomew in the Hungarostudy 2013 Survey. (10, 11).
In the MEO model the detached, the harmonic and the preoccupied, anxious-ambivalent agency generate diverse variable logic towards the natural and sociocultural environment via a human niche constructive agency. The different, embodied attachment styles and drives generate different dynamics of hybridization, and human ecological organizations.

3. ATTACHMENT, HOMONOMY AND AUTONOMY

The harmonic strategy to optimize the relationships with the Natural, Social and Cultural environment: a balanced "tetrahedron" needs a balance of mastery and submission regarding the surrounding reality. The interaction between these attached systems generates a resource of personal energy. The polarity between the surrounding environment and the person generates a bipolar dynamism, one force pulling the Self towards the environment and another pulling the Self towards the Ego, with words of Angyal: *homonomy* and *autonomy.* Autonomy is about detachment, an egocentric drive expressing the tendency of dominance or mastering the environment, by asserting oneself as a *separate being*.

Homonomy is the opposite, 'selfless' pole of the biosphere, the embedded and attached status of the Self.

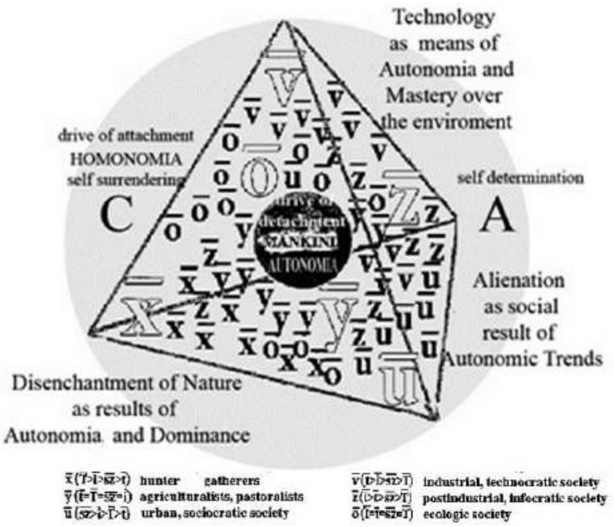

Figure 1. Angyal's homonomy and autonomy in frame of the M-E-O model (2)

In Angyal's binary frame of autonomy versus homonomy, one can reveal a common element: both autonomy and homonomy operates through human extensions and hybridization. The *Autonomic* claim for control over Nature or the Social environment press the person to apply Technological and Infospherical means strenghtening its dominance over the Nature or Social as the Other. These efforts of dominance lessen empathy, altruism, harmonization and self limitation, and creates disposition towards A type behavioural patterns, which might be a developmental consequence of A type secundary (anxious, avoidant) attachment organization. The Autonomy as basic environmental drive is a central feature of the ethics of Homo Economicus, too.

The connection between Angyal's Autonomy and the stereotype of high status conscious, high-achieving employee (usually the leader), who pushes himself in the cage of deadlines and rigid time structure hating both delays and ambivalence gains outstanding importance in the contemporary competitive business atmosphere. It is very meaningful that at the very first time of publication of ATBP, the editorial comments of Lancet (1981) called the readers' attention, that the concept of Type A risk behaviour could result in a "*demotion in status, in job function, in the regard of colleagues and possibly in personal income*." Finally, A type behavioural pattern has been questioned, and only its toxic component, the hostility remained in focus. The behavioural pillar of today's *competitive* neoliberal global (post)industrial machinery could not be stigmatized. The dominants must work - as it is expected - with the highest efficiency, and they will have the highest quality of health care. It is much harder with the C type victims, (an also fading personality concept) because they take a bigger part of social suffering, they are more sensitive, and self repressive, and their illnesses like cancer and chronic allergic or autoimmune diseases (of course in the presence of individual biological vulnerability) are not solved. They represent a painful version of homonomy, a self-submissive attitude towards the social environment. They are welcome too, as an affiliate, enthusiastic labour power, anxious, but inhibited in showing aggression. These considerations may play a role in that A and the C type risk personality discourse was muted under the ethical command: "*not to blame the victim*" (12). The vanished framework of A and C type behaviour is also part of the sustainability discourse, including the human dimension of the endangered environment.

Homonomy means attunement to the natural environment with its organic laws, dynamism and aesthetics, while autonomy against the nature, gained by mechanistic ways and technology, implies attunement simplificated, engineered and technologizated. The same happens to the burocratized and secularized social environment, and we know this sort of hybridization under the term of „homo faber" and „homo economicus".

Society is not built of dyadic transactions, but organized as a jungle of interdependencies woven from mutualism and competition, and the same may be told about the relationship between the actor(s) and his/her/their environments. These *technological, ideological, social or natural* kinds of environments are all partners and predators at the same time, and offer means of extensions, occasional or enduring hybridization as well. They create emergent realities through creative interaction with each other and us. Their joint interactions are beyond any single entity's control, and the relevant part of the environment has an *intimate relevance* to the actor in its niche as a part of this holistic but nevertheless partial unit. This relationship is a mutual, circular and integral element of co-creation, which needs a permanent attunement on behalf of the adaptive agent. This environmental game is a continuous co-evolutionary process, where populations of ideas, technological artefacts, or institutionalized social discourses and collective representations may compete or cooperate with each other through *the human agency, through transient or enduring human-non-human hybrids* including not only artefacts but the social and discourse extensions. This way they may elevate or lower the chance of replication of the other (artefact, idea or even human) populations or cause destruction of competing niches. This happens with the natural environment in the case of techno-industrial pollution, or outdated technologies within the market race, or political models, power systems under the oppression of technological paradigm shifts (like in case of industrial and post-industrial revolutions) (2).

The instable, open „rhizomic" view of circular influences by Deleuze and Guattari (13), or the Latourian pathways of transient chimerization or hybridization framed in the Actor Network Theory create an open horizon for consequences. But the system logic of the emerging patterns with its affinity to an auto-poetic and homeostatic balance stabilized by negative feedback loops between the interactive spheres makes the M-E-O system sustainable.
This homonomic view of human embeddedness is also reflected by the MEO tetrahedron model (1, 14), but in these models the human-technological-social and-

infosperical hybridizations are viewed as enduring patterns resisting to the change.

These organized patterns of *human—natural environment, artefact, discourse and social forms* complexes with their circular logic of influence are embodied in subsistence patterns, forms of biocultural adaptations, cultures, social roles, professions and patterns of technologies, architecture, governing, family life, music or war, in all kinds of human agencies.

Homonomy is an existential and human ecologic metaphor for harmonic bonds and attunement to the sustainable environment, while autonomy refers to a detached, and dominating attitude and drive over the environment of all kinds. The health psychological gains and pressure for personal perception of control and mastery must be kept in mind, when the personal psychological development, and lays on unconscious basis of early social experience. The view of these transient human-nonhuman organizations creates a fluid, dynamic, everchanging frame for human agency engaged in its transactive environment.

The human being is embedded in its environments and shares them. Nature, social systems, technological dimensions, the noosphere and transcendental environment all generate a plural, but a common framework of hermeneutics.

Even a focal, psychological understanding of human beings cannot be restrained into a purely analytical, experimental frame of reference. András Angyal offered his synergistic scope, referring to the person and its environment, "*as aspects of a single reality which can be separated only by abstraction*". Angyal sees the human being as a detached actor in his world and he is expressed by the term *autonomy* with the content of self-determination, an egoistic pole of the biosphere representing the tendency of mastering the environment, with a self-perception of separateness. Angyal also makes us remember that there is another relatively 'selfless', and *attached* status of environ*mentality*, he calls *homonomy*, with the tendency to fit oneself to the environment by willingly subordinating oneself to something that one perceives as bigger than the individual self. (17)

4. ASSEMBLAGES, HYBRIDS, ATTACHMENT AND DETACHMENT

Latour considers the modernist separation of the human and the natural or non-human side rooting in the scientific revolutions of the seventeenth century, and regards it as a culture-bound, particular organization of the world which separates Nature and Culture into two distinct ontologies. In Latour's paradigmatic criticism modernity categorizes the world according to a binary that sorts humans from nonhumans, subjects from objects is a purificating manner. In this framework the social is the result of the associations or links that bind together scientific, political, cultural, economic, and other practices. This way technology, nature (as the observed object of the scientist), discourses, metaphysics, taxonomies as mixed social products, and personal contributions together create the hybrid generating new knowledge of the given reality. This fluid, ever changing dynamism of generating transient chimeras of technological artefacts, discourse patterns, mental maps, interpersonal cooperations, and natural constructions-reconstructions, re(invented) memetic patterns leads to new technologies, and new cyborg hybrids as well. This net of reality is woven from the threads of significance, as Geertz emphasizes, and generate a web of meaning. In the human-non-human hybridization we can explore a network „anatomy" and an information/sign flow based „physiology", figured through metaphors of knots and loops. Knowledge and social-cultural environment is generated by a chimeric flow of human-non-human hybrids of technology, knowledge bases, monetary and military interest, legitimizing discourses and evidence based data control.

This dynamism might be revealed different ways, as well, as we can read at Deleuze and Guattari (13). The „physiological" patterns of these chymeroid co-relationships between human and non-human arrangements might be presented as transient, instable assemblages, where assemblage consists of "things" or pieces of "things" gathered into a single context. Deleuze and Guattari conceives assemblages as products of dynamic features, and relational routes, lines and measurable speeds via "*ceaselessly established connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles*" (13), where the constitutive elements are continuously replaced through innovations and sometimes via paradigm shifts. This flow of permanent transitions favours habitus of detachment, weaker bonds and readiness for change, while nostalgic inertia, strong attachment to the passing patterns, set of objects, social structures and ideas are seen as difficult blockage in the process or progress. This way personality types evolved on the basis of distorted attachment organizations, like A type competitive, workoholic and hostile behavioural pattern with its higher achievement may be selected againts the harmonic B type behavioural pattern with its moderate, „idyllic" conduct at the (battle)fields of worksite achievements.

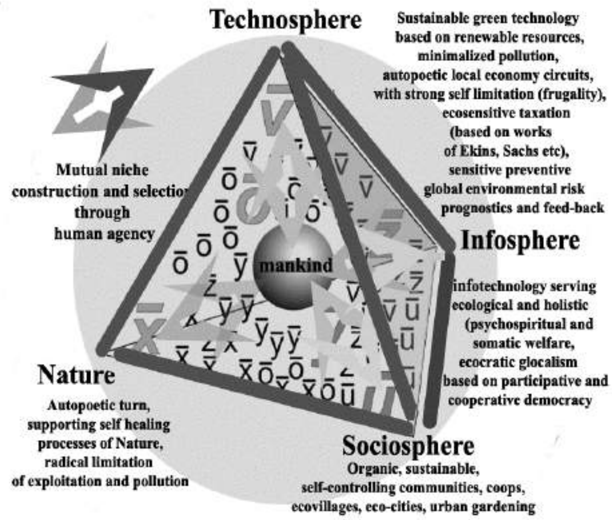

Figure 2. Sustainable ecodynamics in frame of the MEO model (2)

If we dichotomize the autonomy versus homonomy, detachment versus attachment, dominance and accumulation versus harmonization, optimization it might lead us to opponent economic metaphors of non-sustainable accumulative dominant and sustainable cooperative optimizing strategies.

The ARES and EROS acronyms help to enlighten the dialectics of the counter logic of dominance versus cooperation:

Table 1. Typology of ARES and EROS economies

ARES economy: **A**ccumulation /money, power, information/ **R**isk, /technological, natural, social, cultural/ **E**nvironmental degradation, **S**upremacy, dominance	**EROS economy**: **E**nvironmental **R**esponsibility, **O**ptimum strategy **S**ymbiosis (sharing, stewardship, sustaining)
Consequences **A**nomy, **R**iots, **E**nvironmental crisis, **S**ocial **s**uffering	**Consequences** **E**nvironmental **R**econstruction, **O**rganic **S**ustainability

The aim of an ARES economy is to triumph over Nature, competitive economical actor, legal constraint, etc., while an EROS economy overcomes the economy itself (frugality, voluntary simplicity, Schumacherian or Buddhist economy). An ARES economy is based on eco-logics of dominance and predation, while EROS economics are based on cooperation, symbiosis and mutual optimization.

The EROSian economy offers new ethical alternatives based on theories and arguments of international discourse groups or alternative economical trends like the Schumacherian economy, Buddhist economy, etc. This economic ethos has a well-established discourse, as Hans Jonas'philosophy and ethics of environmental responsibility, the social economics of Amitai Etzioni demonstrate it. The "deep green values" of Arnie Ness have been applied in the economics of Knut Ims. Values and habits of Buddhist economy are represented in spiritual vision of economy by László Zsolnai. All of them pay attention to the submitted (social, natural or sustainable technological) environmental interests and values.

EROSian economical attitudes counteracting the ARESian ethos, like frugality, voluntary simplicity may oppose accumulation, while its social and environmental responsibility and solidarity protects the interest of the poor, ethnic, religious, and other minorities and the future generations, while compassionate, protective view of Nature itself lessens the social, technological and natural risks and diminishes environmental degradation.

These aims are close to other economic philosophies like the Bionomia**,** a new kind of *economic theory*, which is based on the thorough study of the laws of life, with the primary objective of serving life, especially human communities, and the *Economic theology*, which is part *of* moral economics, considering material goods as a means to advance towards God, to human improvement, which embraces the economic teaching of world religions, alternative schools of economics and sustainable development science. Bionomia offers challenging contrast to the classical economism, when we collect and compare the dominant features of them. Economism is about externalities, growth, GDP, globalization, extending competition, money as a means of speculation, profit maximizing corporation, specialization, while bionomia is about the internalities, peaceful balance, GDP plus ecological footprint, localization, extending cooperation, local money as means of exchange, truly responsible enterprise, vocation meaningful work. (14).

The unaggressive counter power of civil control, transparency, freedom of speech and alternative media helps to diminish supremative and oppressive infospherical dominance. In case of EROSian success the anomie, riots, environmental crisis, slavery and social suffering may be diminished and counteracted.

Those efforts for economic optimization need a fundamental mental turn from egocentric, accumulation-oriented greed-based attitudes of economic and political actors towards a symbiotic, optimal strategy. Jean-Paul Close (16) called this sustainocracy, as the transformation depicted in the slides of his presentation at the Visegrad SPES meeting in 2012 depicts. Sustainocratic co-creation needs new consciousness regarding the optimal cooperation between nature (planet), sociosphere (humankind) and the technosphere (responsibility) instead of selfish individualism and dependence rooted in the money driven interdependence of the present system.

De Rosnay's vision of the new world of Cybiont, a symbiotic planetary superorganism woven out of the infosphere, technosphere and the infinitely variable networks of human intellects is different.(19) His Cartesian idea is to create a symbiotic balance between Gaia and Cybiont, where Cybiont is to the social organism what Gaia is to the planetary ecosystem.

This Cartesian attitude, a sort of "infooptimism", appears when he exchanges the term "sustainability" to "regulated adaptive development. This evolutionary concept puts the symbiotic man in the centre of a trustful way as a result of the emergence of complex systems through self-organization, self-selection, co-evolution, and symbiosis. This term symbiosis' generally refers to the mutual links between humans and their artefacts as well as the ecosystem.

Efforts for economic optimization need a fundamental mental turn from egocentric, accumulation oriented greed based attitude of economic and political actors towards a symbiotist, optimal strategy. Our tetrahedron model offers a shift from the greed based, accumulation driven ARESian monetarism towards a symbiotic ecocratic turn. This pan-mutualism is a basic condition for counteracting endless Accumulation, growing Risks, Environmental pollution, exploitation and degradation, and Supremacy of those concentrating the capital. The sustainocratic turn helps to substitute this ARESian trap with the EROSian correction, where the Environmentally Responsible economic and political attitude helps alleviate the Anomy, the Riots, Environmental crises, Slavery and Social suffering and generates an Optimalist strategy, and Sustainability of economic activity and the environment, too. This way we may create the culture and the economy for Environmental Reconstructive Organic Sustainability.

5. CONCLUSION

The human ecological conditions create a central position to human agency in the ecodynamical co-existence of Natural, Social, Technological and Infospherical actors of environment.

In this transactional environmental challenge personal dispositions, psychological determinants of environmental attunement, perceptions and motivations are strongly influenced by the so called Internal Working Model, the basis of human social behaviour shaped by the early social learning and attachment system. The analogy of attachment patterns and Angyal's concept of Homonomy versus Autonomy in frame of ecological and economical reference of M-E-O model helps us to combine personality development based on attachment theory and human ecodynamics in context of sustainability.

The balanced, auto-poetic human ecological systems favour small-scale societies with strong natural determinacy and social bonds, creating strong attachments toward the members of local society and surrounding nature, while allopoetic technocratic and informational societies push the system toward a detached tendency. (18). The concept of multidimensional reattachment to the natural, social, and spiritual environments and their elements needs support to families to offer secure and harmonic emotional climate to mothering for the sake of optimal attachment organizations and personal development. Late modernity includes mechanisms, which lifted out social activity from localised contexts, reorganizing social relations across large time-space distances leading to behavioural and psychological norms of detachment. The above shift towards cooperative, symbiotic economic and strategies, the self-limiting turn of frugality and risk minimization need a homonomic turn based on an empathic re-attachment to our significant environmental partners, the Nature and our brethens.

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YOUTH UNEMPLOYMENT STRATEGY WITHOUT A POLICY?

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Abstract: *Youth unemployment refers to the share of the labour force ages 15-24 without work but available for and seeking employment. Despite a mild recovery in the 2012-2014 period, the youth unemployment rate remains well above its pre-crisis level. For millions of young people around the world finding a decent job is still a drawn-out uphill struggle. EU's strategy to fight youth unemployment are entrepreneurship, social entrepreneurship and innovation.*

Keywords: *youth, unemployment, strategies, policy, labour force, entrepreneurship, innovations.*

1. ARE WE JEOPARDISING EUROPE'S FUTURE?

Youth unemployment remains higher than general unemployment. The Commission has produced a series of studies and strategies to fight Youth unemployment. But who is providing the policy for this endeavour?

Too often, all around the world, the full potential of young people is not realized. The main reason for that situation is the fact that they very often have no access to productive and decent jobs. Many of them face high levels of economic and social uncertainty.

A difficult transition into the world of work has long-lasting consequences not only on youth but also on their families and communities.

This issue is very challenging. In this paper will be presented observation about youth unemployment.

Youth unemployment can be defined as unemployment of people aging between 18 and 29 in Europe. It is much higher than other unemployment in the world. This is becoming epidemic now.

In this paper we will challenging overall thinking about this issue. First of all, policy and how its proceed, questioning policy or strategy that can help control youth unemployment.

2. STRATEGY AND POLICY

Strategy: Definitions

Today strategy is used in business. Origins of strategy is in military. It is military therm.

"The art of the deployment of battles as a means to gain the object of war"

Carl von Clausewitz (1780-1832)

This is superseded by new definitions. The next definition is little bit modern. It focuses on using capabilities.

"The practical adaptation of the means placed at a general's disposal to the attainment of the object in view".

Helmuth von Moltke the Elder (1800-1891)

This is very similar to business strategy that we are using today.
There are more than 81000 books on strategy and every have its own definition.

Policy: A Definition

Policy is also very complex. Policy is a statement of intent. Intent drives everything else. It drives vision, goals, objectives and it drives strategy. Intent and policy comes before strategy. You can't start anything without intent.

A policy is a deliberate system of principles to guide decisions and achieve rational outcomes. A policy is a statement of intent.

Intent ⇨ Vision ⇨ Goals ⇨ Objectives

Image 1: From intent to objectives

Typology of Policy

During the 20th century there was huge change concerning formulation of strategy and policy. New way separates duties of those who formulating policy and those who formulating strategy. New paradigm in formulating policy is that it is formulated by statement and after that other instance has to formulate strategy level and at the end the tactics level.

It can be said that strategy is long term, and tactics is short-term.

We can find different typologies of policy:

distributive, redistributive, regulatory and constituent
Theodore J. Lowi (1985)

heuristic and iterative
Althaus, Bridgman & Davis (2007)

Institutional factors such as labour market regulations, minimum wages, vocational training systems, but also benefit regimes and activation strategies play a major role in facilitating, or hampering, the transition of young people into the labour market [1].

Strategic Process

Policy – Strategy –Tactics

Table 1: Difference between policy, strategy and tactics

Policy	Strategy	Tactics
Guiding	Planning	Doing
Rules	How	Why
Very long term	Short term	Long term
Related to vision	Related to goals	Related to goals

Strategist's Scope

- Long-term Vision and Goals
- Commitment of Stakeholders
- Alternatives
- Avoid exhaustion
- Achieve peace status that is better than the peace before the war

3. TRENDS IN UNEMPLOYMENT

Unemployment is a periodical phenomenon since the end of WW II. Unemployment can be very well controlled. The German is best in controlling unemployment.

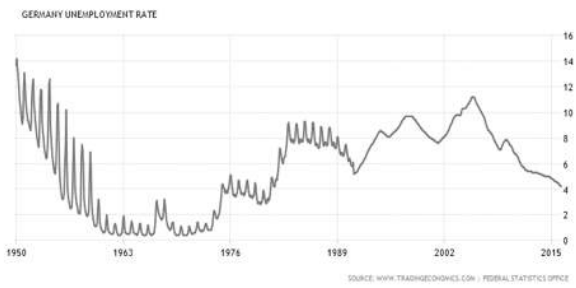

Image 2: Unemployment rate [2]

Unemployment has existed probably during all stages of history. There was a huge crises of unemployment in the late 1920s and 1930s, but recently years after Civil war unemployment was controlled. Sometimes unemployment was controlled very well.

Image 3: Western unemployment [3]

There is a huge difference between average unemployment and youth unemployment. In Europe unemployment is in medium high. Eurozone is not performing better than rest of Europe.

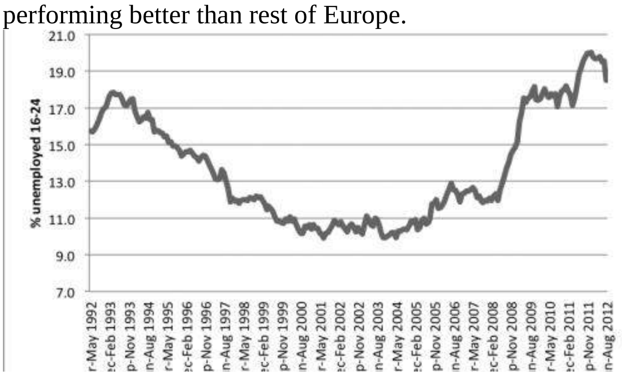

Image 4: UK youth unemployment [4]

Most young people in UK goes to universities. Youth unemployment is almost 3 times higher than average unemployment. There is something wrong with the concepts that we develop in Europe in the terms of unemployment.

This is very waring. UK has a lot of high educated people. Also, UK invest in education and made new paradigm in the late 1960s in terms of high education they converted polytechnic schools at universities. Having so many young people unemployed means that something is going wrong. Today most of young people go to universities. Aider the education is not right or policies are not well.

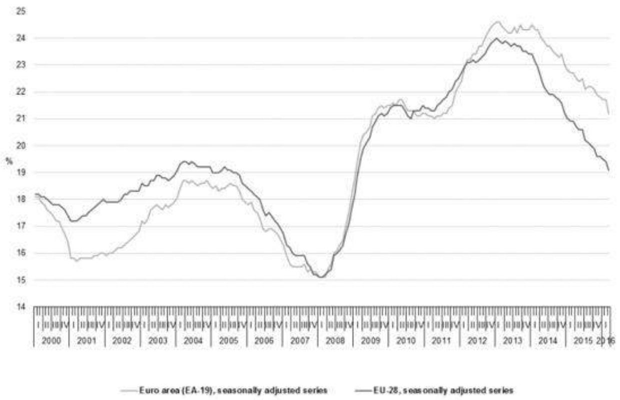

Image 5: EU youth unemployment [5]

Eurozone is not performing well comparing to all European countries. What makes youth unemployment that high as it is?

4. FACTORS IN YOUTH UNEMPLOYMENT

Young people don't want to move to other country to find the job they prefer to stay at home. Language is big barrier. No one can get a job in less than 9 months until find the job. This is very demotivated. Some decide not to search and stay at state funds.

Main factors in youth unemployment:

- Recession (lower GDP, less production, no new hires).
- Structural (industries change, disappear, relocate e skills-job mismatch)
- Geographical (regional) unemployment
- Worker immobility
- Frictional (time it takes to find a new job)
- Lack of motivation (over/under qualification)
- Cultural

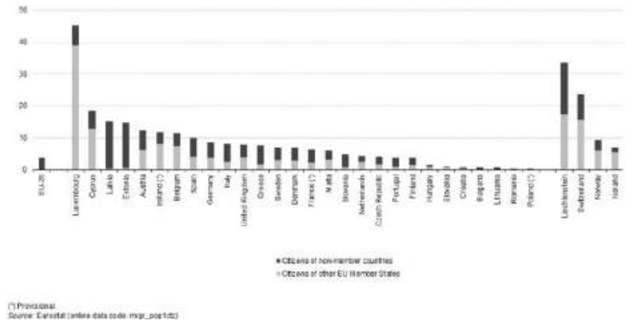

Image 6: Immigration & Unemployment [6]

No positive correlation was found between immigration process and unemployment. Research published on web site The Migration Observatory conducted at University of Oxford does not find a significant impact of overall immigration on unemployment in the UK, but the evidence suggests that immigration from outside the EU could have a negative impact on the employment of UK-born workers, especially during an economic downturn [6].

5. EU'S STRATEGY TO FIGHT YOUTH UNEMPLOYMENT

What is the EU doing? Investing in youth: the Youth Guarantee.

The Youth Guarantee seeks to ensure that Member States make a good-quality offer to all young people up to age 25 a job, continued education, an apprenticeship or a traineeship within four months of leaving formal education or becoming unemployed. The Youth Guarantee is one of the most crucial and urgent structural reforms.

The logic of the Youth Guarantee is very simple – to ensure that no young person is left unemployed or inactive for longer than 4 months. The Youth Guarantee should enable young people to find a job suited to their education, skills and experience or to acquire the education, skills and experience that are directly relevant to increasing their chances of finding a job in the future [6].

The main courses:

- Entrepreneurship
- Social Entrepreneurship
- Innovation

EUs Definition Of Entrepreneurship

"Entrepreneurship is an individual's ability to turn ideas into action. It includes creativity, innovation, risk taking, ability to plan and manage projects in order to achieve objectives [8]."

Dimensions Of Entrepreneurship

- Necessity based (survival attempt)

- Opportunity based (‘spark’ for creativity)
- Thus: Entrepreneurs find a gap between a situation that ‘IS’ and what it ‘SHOULD BE’ and fill it through innovation (a different technology or process)
- Entrepreneurs disrupt by creating substitutes

Is The Eu A Fertile Turf?

Maybe, says the Commission. 37% of Europeans would like to be self-employed. In Comparison:

- 51% of Turks would like to be self-employed *
- 55% of Americans would like to be self-employed
- 71% of Chinese would like to be self-employed

* = Job-coping rather than entrepreneurship—European Comm., 2010

6. ROADBLOCKS TO ENTREPRENEURSHIP

The main roadblocks to entrepreneurship are following:

- Education (not having the right one)
- Fear of failure and dishonour
- Fear of losing own assets
- Ignorance about getting finance and accessing
- markets
- Lack of ‘exit strategies’ (selling the business)
- Lack of ‘global vision’ and of ambition
- Red-tape (real or feared)
- Friends’ and family’s advice for prudence.

Is There A Light At The End Of The Tunnel?

- Probably
- FUTURE SOCIAL CONDITIONS
- Job insecurity will increase
- Social benefits and protection will decrease
- Employers will be more mobile (State-independent)
- Migration from least developed countries

→ Everyone will have to think like an Entrepreneur!

5. CONCLUSION

Small and medium-sized enterprises (SMEs) are the backbone of Europe's economy. They represent 99% of all businesses in the EU. In the past five years, they have created around 85% of new jobs and provided two-thirds of the total private sector employment in the EU. The European Commission considers SMEs and entrepreneurship as key to ensuring economic growth, innovation, job creation, and social integration in the EU [8].

Challenges To States & EU

- Will national and EU (un)employment policies
- make sense?
- Without policy no implementation strategy
- The crisis (2008-) has proven that Nations/EU
- have no influence on job outcomes
- Workers and job seekers will have to become self-sufficient and rely on ad hoc communities and networks.

New questions: POLICY vs STRATEGY

- Does Strategy make sense without Policy?
- Who formulates EU’s Policy?

What Can The State, Academia & Society Do?

Give solutions!

Table 2: Solutions for youth unemployment

STATE	EDUCATION	SOCIETY
Minimal Bureaucracy Low taxation Fair laws Property protection Break-up big conglomerates Reward Innovation	Tailored curricula Involving business Life-long education Accessible VET	Finance Encouragement Belief in private initiative Let Youth ‘Dream, Believe, Act’ Celebrate Successful Entrepreneurs

The rationale for employer initiatives to promote youth employability is simple: businesses that can strategically source, manage, and create needed talent for the long term will be able to seize emerging economic opportunities, while those that fail to address this challenge will be outperformed by their competitors.

Individuals who are given access to learning opportunities and who can cultivate the right skills will thrive in the labor market and contribute to the organizations that employ them [9].

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CRISIS COMMUNICATIONS IN PRACTICE – THE STUDY OF THE CASE OF BAN ON DISTRIBUTION OF PEKABESKO PRODUCTS IN RS

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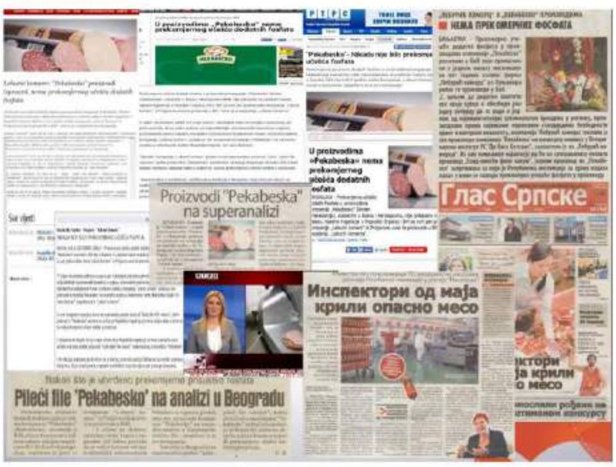
Abstract: *On 5 December 2014, RS Ministry of Agriculture, Forestry and Water Management rendered the Order which bans trade of all Pekabesko Company products on the territory of RS, based on inspection which allegedly resulted with the conclusion that Pekabesko products, distributed in RS by Leburic komerc, contained too high level of phosphor, opposite to relevant laws and regulations on the territory of RS. Prime Communications Agency has been engaged as the Agency in charge of crisis communications, selecting optimal ways to save and protect the image of Leburic komerc and Pekabesko companies, to keep the buyers loyal to those products, and to make influence on decision makers and policy makers to reconsider disputable Decision. This work described the case, used methods and tools, and the case which was the occasion for Prime Communications to receive the most honorable PR awards in the world, IPRA global award for crisis communication, in competition of 447 applications.*

Keywords: *Prime Communications, crisis communication, PR, Leburic komerc, campaign, strategic communication, IPRA Award*

1. INTRODUCTION

Leburic komerc company from Prijedor is general importer of the products of Pekabesko company, Ilinden, Macedonia. Leburic komerc has been found in 1990s as small family business with two employees, working in the premises of total area of 40 square meters, dealing with the business of trade of dried meat products of Srem Sid meat industry, Serbia. During over two decades of work, Leburic komerc has been growing up, becoming one of leading distributor of food, with focus on dried meat and conserved products, on the territory of RS and BiH. Today, the company works on the total of over 2,000 square meters of space, with over 80 employees. It both works on retail trade level, and on the level of trade for final consumers. It is general distributor of several big companies, including Pekabesko, Farmer, Welton and Fortuna.

On 5 December 2014, RS Ministry of Agriculture, Forestry and Water Management rendered the Order which bans trade of all Pekabesko products on the territory of RS, based on the analysis on one product, and conclusion of the inspection that the level of phosphor has been exceeding allowed level, defined by the regulations in the RS.



The decision of competent Ministry was beginning of the crisis within Leburic komerc and its operations, as well as the crisis for operations of Pekabesko Company in BiH.

2. CRISIS COMMUNICATIONS

Crisis communications campaign has been launched as respond on the Order of the Ministry, at the same time promoting quality and safety of the products of Pekabesko Company, and bringing back the trust of the consumers. Prime Communications Agency has developed Communications plan targeted on establishment of the contacts with media and consumers, developing following crucial communications messages:

- products are safe
- quality is on very high level
- deceive of audience via institutions since too high level of phosphor has not been approved.

The campaign has been based on several activities which describe the way of client's work and which position the client as modern company, targeted on development. Social networks have been used as the way to reach targeted audiences, especially media.

The advantageous thing was the fact that Pekabesko Company really had proactive approach while providing additional analyses of certified institutions, which confirmed safety and quality of the products, with no increased level of phosphor in dried meat products.

After the team of legal experts considered the Order of competent RS Ministry, both legal and communications experts concluded that the Order of the Ministry has been unfair and questionable in legal context. Further analysis of the situation, position of both sides, their connections and specific interests, has confirmed that there is the space for legal procedure to be submitted before competent Court, but also to enter the fight in public relations context.

The space for positioning and strengthening of communications campaign of Leburic komerc was very wide, as well as the space to develop positive perception and to open direct communications with the consumers. In that context, internet has been effectively positioned as one of key places to work on improvement of the position of Leburic komerc. After situation analysis, Prime Communications team has developed key communication messages to be delivered towards the public.

3. GOALS AND TARGET AUDIENCES

The goal was to promote quality and safety of the products of Leburic komerc and to build up trust among the consumers. Following goals have been defined as specific goals:

- to bring back trust in Leburic komerc company and Pekabesko brand
- to inform the public about work, importance and daily activities of the companies
- to establish and develop media relations
- to improve direct communications with the consumers
- to position the company as modern, successful and development-focused
- to inform the public and to develop the image of management of the company as modern, capable and development-oriented.

Following groups have been defined as target groups:

- purchasers
- distributors
- media
- partners
- decision makers
- opinion makers
- business public in RS

The strategy chosen to be used in this crisis communications case was the strategy of transparent communication targeted on spreading the information on misuse of institutions. Fast, strong media communication with the goal to cover the information and facts regarding safety and quality of Pekabesko and Leburic komerct products, as the same time covered by proactive approach and presentation of the results of additional analyses of the products.

The tactical solutions used for realization of the strategy was based on four stages of campaign, opening the opportunity to inform all the sides about crisis topic, key developments and reasons to bring back trust in Pekabesko products. The first two stages were preparatory, while the third has been used for delivery of all communication messages.

Stage 1: Initial step in this crisis communications was to get all relevant information and to make direct touch with the client, in order to build the trust, and to make complete picture on what is going on in this case. In continuation in this stage, Prime Communications has researches legal background in food industry, and developed excellent links with Leburic komerc, in order to ensure the ground for implementation of the campaigns.

Stage 2: The second step was definition of opened, proactive, fast communication system, based on the facts. The goal of such communications was to amortize possible complications and to reduce the damages caused by the crisis. Primary target groups were consumers, buyers, partners, media and decision makers. Before implementation of concrete activities, it was needed to develop the plan of activities, with specific goals and communications directions, timelines and budget of direct and operative costs.

There were two crucial messages for the media:

1. The Ministry has made mistake, and RS might suffer difficult damages, due to injustice in case of Pekabesko and ungrounded ban.

2. Pekabesko Company was the victim of questionable work of the institutions led by personal interests.

Stage 3: All proposed activities had a goal to show how it is significant to inform the audience and decision makers about the whole this case, to make all the sides about the importance and sensitiveness of the information which are related to health safety and food quality, and consequences of non-informed players who make the damage to the companies. In accordance with the goals, Leburic Company has requested another analysis in RS Veterinary Institute “Dr Vaso Butozan”, to make sure that quality of disputable products is really satisfactory.

Upon recommendations of the agency, double-check analysis was also done in Belgrade, and credible institutions from Serbia also confirmed that there were no irregularities with the products which were banned. As analyses were done, the public has been informed about analyses results, while partners of the Company received the letter which reads that there were no reasons for fear and for the ban on distribution of the products.

Following messages have been spread in the public:

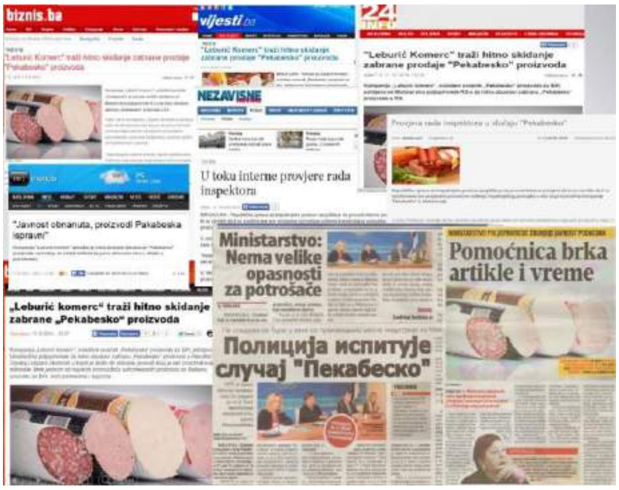
- Pekabesko is the company with top level of dried meat products, one of the best in the region
- Pekabesko produces in accordance with the highest standards of health safety
- Too high level of additional phosphors in Pekabesko produces has not been registered never since establishment of the company
- All the products have been send to special analyses, including super analyses, to approve that it is one of the best brands in the region.

Stage 4: Final stage was dedicated to monitoring and evaluation regarding implemented activities. Intensified communication based on strategic approach had resulted with strong influence and with withdrawal of disputable Decision of the Ministry. Registered communication challenges registered in this campaign were mostly related to endangered trust of the buyers, the danger of deepening of the crisis and lack of media network which would be developed in advance.

4. CAMPAIGN EFFECTS

Prime Communications Agency has been suggesting the directions of crisis communications, in order to amortize the damages caused by the campaign, and to overcome the crisis regarding import of the products of Pekabesko Company to Bosnia and Herzegovina. The consequences which hit the client were measured with commercial damage, endangered trust and endangered image.

After each communication activity, Prime Communications Team has been preparing the reports on implemented activities and reports on media relations. In 4-week period, there was the total of: 7 press releases, 2 media information, 20+ recommendations for management, 7 media reports, 132 media publications, 23 publications in print, 21 in TV features, 78 on internet portals and 10 in the agencies.



Crucial output of the Campaign was the fact that RS Ministry of Agriculture, Forestry and Water Management lifted the ban on import of Pekabesko products to Bosnia and Herzegovina. Also, the Ministry opened investigation against competent Assistant Minister of Agriculture, Forestry and Water Management and Director of RS Veterinary Institute who participated in adoption of disputable Order.

5. AWARD, CONCLUSION AND RECOMMENDATIONS

For extraordinary contribution in crisis solving, Prime Communications Agency has been awarded with the most significant PR award in the world, Golden Award of International Public Relations Association (IPRA) in 2015.

The Award has been delivered in the category of crisis management, in the competition of 447 applications delivered from the agencies all over the world, and it has been selected by the team of 18 international judges, as one of the best cases worldwide. This was the first case of the award given to the agency from Bosnia and Herzegovina, for excellence in public relations.

Photo 1: Amibel Sanchez, IPRA President and Dragan Močević, Prime Communications General Manager

Crisis communications is most likely the segment of public relations where it is the easiest to recognize the role of communications function. Crisis is the most challenging and the most complex part of any job, and it happens accidentally, most likely unexpectedly, requiring urgent reaction. It affects common daily activities and requires full reorganization in communications.

In order to make better external communications, it is also necessary to improve internal communications, and to intensify the communications between the Agency and client, since it provides direct access for full delivery of targeted messages. Each statement, press release and information have to be perfectly prepared, grounded and delivered in adequately selected time frame.

The case of lifted ban on import and distribution of Pekabesko products is very concrete case of grounded, well-planned, timely delivered and proactive crisis communication in capacity of the Agency specialized for PR.

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CONCEPTUAL MODEL FOR THE STUDY OF NETWORK INNOVATION PROCESSES

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Abstract: : *The work demonstrates that network innovative processes can be analyzed effectively if it is considered as a combination of business processes that interact differently with time. It found that drivers, disadvantages and benefits of cooperation in the creation of innovation are different and depend on the size of the organizations and the industrial sector. The developed conceptual model helps expand understanding of network innovation processes.*

Keywords: *network innovative processes, innovation, collaboration, business networks, business processes*

1. INTRODUCTION

This work expresses the opinion that there is a need for a new form of business innovation because traditional (closed) ways for innovation does not contribute in quantitative and qualitative terms for business development and problem solving emerging in today's business environment.

This paper provides an analysis of collaborative innovations with suppliers and individual and business customers. Under collaborative innovations the author understands the process of engaging in creating new products and services. Collaborative innovations are a form of so-called. "Open Innovation" [1], which can be defined as a systematic search, storage and use of knowledge within and outside the businesses to the flow of the innovation process [2]. The concept generally involves the combined processes and knowledge flows inside and outside the businesses organizations [1,2]. Open innovation gives an idea of how the boundaries of organizations are permeable to knowledge flows [3].

Incoming processes use the discoveries of others and outgoing processes display outside technologies developed in the organizations. The combination of both processes give rise to different forms of associations such as alliances and more. [1,2,3]. It is believed that open innovation include four research streams: business operations with technology; innovations performed by customers; business models; innovation markets[2].

Collaborative innovations are more inclusive than open innovation because they cover processes in which businesses and customers engage in creating a common innovation.

The purpose of this work is to create a description of a model of maturity of business processes in the implementation of collaborative innovations. For the development of the model is used the concept of critical success factors – CSFs [4]. The model was developed based on the CMMI model [5,43]. The structure of the model is made up of three elements: Levels of maturity; Critical success factors; Evaluating business processes.

2. COOPERATION IN THE IMPLEMENTATION OF PULL-TYPE INNOVATIONS

Recently, three drastic changes (technological, informational, institutional) revolutionize the business environment in which arises push strategies. The result of this sharp transition is the emergence of so-called "New Economy". Taken together, these changes result in the escalation of competition, imposing strict imperatives of customer-oriented strategies from pull-type in order to achieve quick response to changing customer demand and expanded product differentiation by which to meet customer requirements. All these factors give rise to new imperatives that can be formulated generally as "Pull Innovation". A key feature of these innovations is the cooperation between business organizations.

The emergence of pull orientation process has a catalytic effect on business organizations to expand their concept of pull-type processes and increase the potential of their innovation processes. Pull innovations broaden innovation focus on internal organizational vertical processes to build systems for creating value (value networks), which extend vertically and horizontally inside organizations and partly to external business organizations involved in delivery of products to customers.

Major organizational change relating to pull innovation is cooperation between business organizations. Collaboration has long been considered a valuable tool for enhancing innovation. The benefit stems from the sharing of knowledge and its consequences for innovation. In a so-called 'New economy' demand for cooperation and exchange of knowledge is a natural result of specialization and deserves special attention. But there is a second motivational factor for cooperation. Cooperation is vital for realizing the design process of products that extends beyond organizational boundaries and reaches customers.

Implementation of collaborative innovations for pull business systems in the new economy is growing as organizations become more independent and specialized. Treating knowledge as organizational asset and clear separation of explicit from implicit knowledge implies the understanding of knowledge as limited resource. From this perspective, today’s businesses are forced to seek access to external sources of knowledge, rather than creating internal organizational knowledge. Thus, knowledge is becoming the most exchanged resource, which is the catalyst for cooperation. While significant part of explicit knowledge can be found in finished products, the implicit knowledge which is crucial to understanding the processes, must be acquired. The need for acquisition of such knowledge to expand the cognitive areas of the organizations brings about efforts for the creation of collaborative innovations.

Nambisan [6] defines collaborative innovations as a collective approach to creating innovation and problem solving, which is based on harnessing resources and creativity of external networks and communities to strengthen and improve the innovation process and expand the scale and quality of innovative results. From this point of view can be determined the main feature of collaborative innovations - innovation is an open-ended process, in which at an early stage actors of an organization, other organizations and firms are integrated in the innovation cycle (generating ideas, choice; implementation; distribution). Therefore, the trajectory of the innovation should be determined by the availability of innovative assets and not by the formal boundaries of an organization. Moreover, the role of actors is not determined by formal rules, but rather by the degree of correspondence between the problems and the available innovative assets. Accordingly, the availability of innovative asset innovation cycle can be shared between players or can be carried out by an organization. In this respect, significant is the role of information technology. They are the main means of building business networks and ensure a continuous flow of ideas and information.

3. COLLABORATIVE INNOVATIONS WITH CUSTOMERS

The importance of cooperation with customers to develop innovative products and services has long been recognized. As a result, such cooperation becomes essential component of the efforts of many developing organizations.

The consequences of collaborative innovation with customers is significant because it is a change of the business paradigm. Today, business organizations accumulate knowledge by the customers and modern technology push innovation forward faster. Forms of open innovation arise as well. [7,8,9,10].

Business organizations operate under increasingly close cooperation with suppliers and customers to gain new ideas and knowledge from these external sources [11,12]. Reducing the economies of scale of research and development activities generate such collaborations [13,14]. The growth and expansion of cooperation between business organizations transform the nature of competition and cooperation [9].

4. EVALUATION OF COLLABORATIVE INNOVATIONS

One of the main evaluation criteria is whether collaborative innovations help to overcome the restrictive aspects of the business environment. Collaborative innovations must be able to influence the socio-technical environment of an organization.

As a reaction to restrictions on a business organization, collaborative innovations must contribute to: opening the innovation cycle to internal and external organizational innovation assets; facilitate risk-taking; promote positive attitudes towards the performance of innovation and risk-taking in the contemporary business environment.

Collaborative innovations open innovation cycle for a diverse group of actors within the organizational hierarchy and outside an organization [6,15,16]. By opening up the innovation cycle allows the flow of innovative assets within business organizations and beyond. Therefore, the innovation process has the potential to improve elements of the innovation cycle alternative.

Generating ideas is simplified because organizations use a wide range of knowledge and expertise within and outside their borders [17]. Implementation and dissemination of ideas is facilitated by their support actors involved in the generation and selection of ideas. They are more willing to accept innovation and take on responsibilities. Collaborative innovations provide organizations with opportunities to focus on the implementation and dissemination ideas to actors possessing the most important capabilities. In this manner they strengthen the implementation of elements and spreading of the innovation cycle.

Collaborative innovations performance is characterized by five indicators:

- The number of new technologies generated through cooperation;
- Documented intellectual property;
- Immediate effect on product ranges (changes to existing product platforms or new products for sale);
- Market acceptance of new technologies, including quantitative estimates of analysts immediate financial performance of products;
- Perception of the participants for the overall performance of innovation.

5. LEADERSHIP AND MANAGEMENT OF COLLABORATIVE INNOVATIONS

Barriers to collaborative innovations can be eliminated or minimized by exercising appropriate leadership and management [18,19]. In very complex processes of collaborative innovations lot of things can go wrong between intentions and implementation.

First collection of relevant and committed actors in sustainable interactions can fail due to: lack of past experience and traditions in interaction; negative perceptions of past interactions; difficulties in motivating relevant actors to take the time and effort to interactive participation [18].

Secondly when the actors agree to interact, often it is because they recognize the need to share and combine ideas and resources to solve urgent or important issues. But interaction does not always stimulate cooperation overriding conflict of interest. Moreover, cooperation may fail overriding distrust and opportunistic behaviour, availability of procedural uncertainty and the existence of incompatible and destructive cognitive models [18,20,31]. Thirdly, when the actors engage in the process of cooperation they may not contribute to innovation. Recurring events of cooperation in enclosed and sustainable business networks with the same actors who over time have developed similar views of the world will stifle creativity, will discourage the creation, prototyping and implementing new and bold ideas and will decrease the spread of innovation [21].

In summary, there is a risk that different obstacles disrupt the relationship between interaction, collaboration and innovation. Good intentions for communication and cooperation in order to study and exploit new ideas are not enough for the realization of collaborative innovations. In order to achieve sustainability of the process of collaborative innovations must implement appropriate methods of leadership and management.

Firstly, to create a well-functioning interactive environment by active and committed actors leaders and managers must operate as organizers [22]. The organizers aim to motivate, empower and unite actors to create and form interactive environment to determine the agenda of interactions to clarify the interactive processes and foster mutual adjustment of expectations [18].

Secondly, leaders and managers need to promote and facilitate cooperation between stakeholders operating as intermediaries. The mediators aim to form or clarify mutual commitments to manage the process of cooperation through decomposition into different stages to form a trust and resolve disputes through coordination of interests based on common models and to remove obstacles to cooperation [23,31].

Finally, the progress of collaborative innovations can help if leaders and managers act as catalysts that apply entrepreneurial approaches to leadership and management. Catalysts help to reformat the problems giving new knowledge and new roles for actors benefit from existing and emerging constraints and opportunities, manage risk and promote transformative accumulation of knowledge and traditional thinking [23].

6. CO-CREATE PRODUCTS WITH CUSTOMERS

The management of uncertainty is one of the main practices of innovation management. Business organizations are faced with different sources of uncertainty stemming from their technical and managerial capabilities and target markets. Thomke [24] classifies uncertainties associated with innovation projects: technical, manufacturing, and marketing. To minimize these uncertainties business organizations should transfer and have access to different types of information [25]. Generally, this information can be classified into two main groups [26]:

- **Information about customer and market needs.** Its information needs, desires, satisfaction, motives and others; customer proposals for new products or services. Better access to information related to the needs of customers increases the effectiveness of innovation. This reduces the risk of failures. Necessary information helps build a detailed picture and assessment of customer requirements, business operations and organizational systems. Such information is generally transferred by methods of marketing research of customers to businesses;

- **Information concerning the possibilities of technological solutions.** This is information on how to best apply technology to transform customer needs into new products and services. Access to technological information is related to the effectiveness of the innovation process. Better information technology helps product developers to engage in activities in the innovation process which are more directly related to problem solving. The more complex and radical innovations are, the greater the need for technological information from various problem areas.

All innovations are characterized by two types of information, although in different cases, their ratio is different [27].

Today, common understanding of the innovation process is based on the premise that business organizations rarely innovate alone, while the innovation process is based on interactive relationships between creators of products, customers and various other institutions [28].

Recently, the concept of "open innovation" is used to characterize systems where innovation is not made only in businesses but also a cooperative basis with other external actors [29,30]. Open innovation is the opposite of closed innovation where business organizations use ideas generated only inside them by major research laboratories and strictly controlled networks of vertically integrated partners [33]. Open innovation characterized by cooperation for innovation within large horizontal and vertical networks of universities, start-up businesses, suppliers and competitors. Business organizations should use ideas of their own research units and ideas from the outside and must use internal and external access routes to markets in order to advance its technology.

The goal is to get access to external information, thus minimizing uncertainties in innovative designs. Informal relations define the innovativeness of open innovation. Open innovation extends beyond the usual contractual relationship to achieve joint value. These include new forms of value creation, based on informal, non-contractual, flexible and short-term relationships.

Access to customer information is a fundamental requirement for any innovation. There are two traditional approaches to acquire such information. Data input from customers can be acquired either clearly through consultation with customers about the needs and preferences through market research and interviews with focus groups, or by research in the customers sphere (analyzing sales data, Internet content, interviews with collaborators sales).

Customers can have different roles in the innovation process. Some customers may provide key information on future trends and possible technological solutions, while others are more suitable for the evaluation of innovative concepts or to participate in refining the prototypes. All these roles revolve around three ways to use the information generated by customers when developing new products:

- Research in the sphere of customers;
- Consultation with customers;
- Innovate with customers.

Research in customers sphere - In this approach, the products are designed on behalf of customers. This is the typical notion of so-called "Market orientation". Business organizations use the existing customer information from various sources such as feedback from associates in sales; analyzing sales data from previous periods; analyzing Internet content; Reports of studies of third parties and others to determine customer needs [34]. Another significant source of this approach are analyzes of the performance of existing products (of the organization itself and its competitors).

Consultation with customers - In this approach, besides studying data on customer preferences, what is performed is direct consultation with them in order to obtain input for the innovation process. In the early stages of innovation projects customer preferences or unmet needs are identified through surveys, interviews with quantitative indicators or focus groups. A perfect and proven method is known as "Driven by innovation results" that combines group research methods and assessment into a coherent model [35]. In later phases of the innovation process customers provide different solutions or concepts so that they can respond to the submitted designs [34].

Innovate with customers. In the previous two approaches customers remain isolated from business organizations. In this third alternative method customers are actively involved in the design and development of future products using funds provided by organizations that create products. This is about actively integrate customers in the innovation process [36], building conception of the so-called "customer centric organisation" [37,38]. The creators of products empower customers to design their own decisions and apply methodologies for efficient transfer of innovative solutions from customers to businesses. These are forms of open innovation with customers (customer co-creation). The term "customer co-creation " indicates the approach to create products where customers are actively engaged and involved in the design of new proposals [37,38]. Co-creation with customers is defined as active, creative and social process based on collaboration between producers and customers [40].

The main benefit of jointly developing products with customers is expanding database of needs, applications and technological solutions that reside in the area of customer products or services.

Business organizations organized process of innovation by customers as forming capabilities and infrastructure that allow customers to perform activities in the innovation process. This is a new concept of open innovation with customers [30,41].

There are three characteristics that affect the dimensions of the conceptual methods of co-production with customers [42]:

- **Stage of the innovation process.** Stage of the innovation process which characterizes moment when the input from activities of common creation enters the process of developing new products i.e., whether the data of customers falls in the earliest stages of the process (generating ideas and developing concepts) or enters the end of the process (design and testing of products);

- **Degree of cooperation.** The degree of cooperation characterizes the structure of the underlying open innovation relationship i.e., whether it is bilateral cooperation between a business organization and one customer at a particular time or there is a network of customers who collaborate with each other regardless of the business organization;

- **Degree of freedom.** The degree of freedom characterizes the nature of the tasks that are assigned to customers i.e., whether assigned specific, predefined tasks with minimal freedom or open creative tasks on which decisions are difficult to predict because of the many degrees of freedom.

If we take into account these three characteristics, there are eight possible types of co-creation with customers.

7. MODEL FOR EVALUATING BUSINESS PROCESSES IN THE IMPLEMENTATION OF COLLABORATIVE INNOVATIONS

After extensive literature research the author has decided to build a model to assess the business processes in the implementation of collaborative innovations on a well-known and widely used model - Capability Maturity Model Integration - CMMI [5,43]. It was decided the model structure is made up of three elements (Fig. 1):

- Levels of maturity of business processes;
- Critical success factors for collaborative innovations;
- Evaluation of business processes.

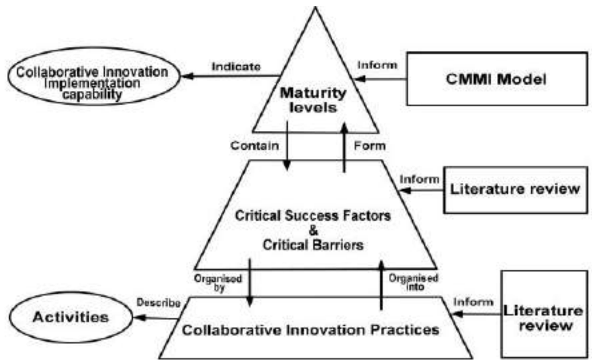

Figure 1. Structure of the model for evaluation of business processes in the implementation of collaborative innovations

By categorizing the critical success factors and key obstacles in the model are defined different levels of maturity of business processes related to the implementation of collaborative innovations. For each of the levels are inherent various critical success factors and other key obstacles. According to the model, business organizations performing collaborative innovations, must respond appropriately to achieve a certain level of maturity. To achieve these effects for each factor must be designed specific practices that serve as a basis for evaluating and responding to relevant factor.

In the developed model, by maturity is understood the extent to which the relevant business processes are defined, managed and evaluated [5]. Levels of maturity are considered to be clearly defined phases to achieve the full realization of collaborative innovations.

Element 'Levels of maturity. "In CMMI model are defined five levels of maturity (1 to 5), but in the development of this model were made some adjustments of the CMMI model, taking into account the characteristics of business processes in the implementation of collaborative innovations:

Level 1 of the developed model fully compliant Level 1 CMMI model. At this level business processes related to collaborative innovations are erratic and only a minor part of business processes are documented;

The performed studies show that awareness of actors participating in collaborative innovations is a significant factor in the implementation of collaborative innovations. The implementation of collaborative innovations is the process of introducing new practices in business organizations, it is important to facilitate the achievement of awareness and sharing knowledge. Therefore level 2 of the developed model is defined as "Achieving awareness." This level is defined as collaborative innovations which are expensive and long-term activities that cover long periods to achieve profitability. Under such conditions, awareness is crucial;

Levels 3 and 4 of the developed model correspond to levels 3 and 5 of the CMMI model. (Level 3 - defined business processes; Level 5 - optimized business processes). In the developed model level 3 "Defined business processes" is the level at which business processes to achieve collaborative innovations are documented, standardized and integrated into a single business process within a business network. Level 4 "Optimized business processes" is the level at which business organizations have formed a network structure for continuous improvement of processes related to collaborative innovations.

In the developed model are not included levels 2 and 4 of CMMI model (Level 2 - managed business processes Level 4 - managed quantitative indicators business processes). The reasons for this are:

- In CMMI model, level of maturity "Managed business processes" is focused on project management. In the realization of collaborative innovations, there are no significant factors directly associated with this level of maturity;

- In CMMI model, level of maturity "Managed quantitative indicators business processes" is focused on defining quantitative indicators of software processes. In the realization of collaborative innovations, there are no significant factors directly associated with this level of maturity;

According to the author four levels of maturity of business processes related to collaborative innovations are sufficient for practical application of the model, because these levels take into account all the factors identified in the literature study of collaborative innovations. They recognize the works of other authors who define similar levels of maturity in continuous improvement of business processes [44,45].

Element "Critical success factors". CMMI model includes 22 sets of business processes that are distributed among five levels of maturity model. According to the author the successful implementation of business processes for collaborative innovations must rather be monitored through key success factors than by groups of business processes. The reasons for this are as follows:

- Literary study on this work and the results of studies of other authors demonstrate the importance of 'Key success factors "in the field of collaborative innovations [32,39,46]. But the concept of the key factors for success has not been applied widely in the field of collaborative innovations;

- Implementation of initiatives for collaborative innovations requires examples of actual practice, allowing to learn from mistakes and continuous improvement of business processes with collaborative innovations. Key indicators of success are defined after the successful completion of certain activities, so these factors reflect the actual experience;

Taking into account the above mentioned circumstances, on the basis of literary study identifies critical success factors and key barriers that have varying degrees of importance.

Twenty-two groups of business processes of the CMMI model are arranged in four groups. Applying the same approach in the developed model, the critical success factors and key obstacles are arranged in three groups: awareness; organizational factors; supporting factors.

The key success factors from the "Awareness" are: commitment of top management; involvement of employees; awareness of collaborative innovations.

The key success factors from the "Organizational Factors" are: forming teams for implementation of the processes of collaborative innovations; availability of skilled employees; adequate time and resources to collaborators; existence of documented methodology.

The key success factors of the group "Supportive factors" are: realization of accountability of the performed.
Key barriers for the group "awareness" are: lack of awareness; lack of maintenance.

Key barriers for the group "Organizational Factors" are: lack of resources; time pressures; staff with insufficient experience; inadequate organizational policies; lack of documentation methodology.

For distribution of these key success factors and key barriers between different levels of maturity in the developed model is used the principle of CMMI model. Factors and obstacles from the "Awareness" are associated with level 2 of the model. Factors and obstacles from the "Organizational factors" are related to level 3 of the model because the focus at this level is on the systematization of the structure of business processes and defining business processes. The focus of Level 4 of the developed model is on continuous improvement, so the drivers and impediments from the "Supportive factors" are associated with this level.

Element "Evaluating business processes." In this model each element of the critical success factors and each of the key barriers are evaluated to determine how well they are implemented. In order to assess the maturity of business processes associated with the collaborative innovations is developed specialized system for evaluation. This system tests the current state of the business processes of organizations realizing collaborative innovations and identifies imperfect business processes that require improvement. Business processes are valued at ten point scale (1 to 10). Then, the results are averaged for each group of business processes. Areas with an average score lower than 7 are considered weaknesses. The developed evaluation system includes three main criteria:

- **Approach.** In this aspect is estimated commitment of an organization and support of its management for the implementation of collaborative innovations and organizational skills for practical application of collaborative innovations;

- **Deployment.** In this aspect is estimated scope and sequence of implementation of collaborative innovations in various business processes;

- **Results.** Criteria here are the scope and consistency of positive results that are achieved over time and in different business processes.

For each key success factor and key barrier, based on future empirical studies have been developed groups of organizational practices. The process for the evaluation must include the following steps:

- **Stage 1.** For each practice a key factor for success or a key barrier, a selected leading stakeholder, managing collaborative innovations calculates the assessments in three aspects;

- **Stage 2.** assessments in the three aspects of each practice are averaged and rounded and the results are put in score cards;

- **Stage 3.** The procedure is repeated for all critical success factors and key barriers. The results for all practices are averaged to obtain a comprehensive assessment of all critical success factors and key obstacles.

- **Stage 4.** Connecting the results obtained with the implementation of collaborative innovations. Results over 7 for key factor for success or a key barrier indicate that the relevant factor is achieved successfully, while scores below 7 are considered as weakness.

- **Stage 5.** To achieve a certain level of maturity is necessary that all critical success factors and key obstacles that belong to the appropriate level to have averaged over 7 results.3 Headings

8. CONCLUSION

In this work, is presented a model of maturity of business processes in the implementation of collaborative innovations, which has the potential to help business organizations in the assessment and improvement initiatives for collaborative innovations. The model was developed based on the CMMI model and using critical success factors and key barriers formulated, based on extensive literature research. Through literature study are identified factors that have positive and negative effects on processes related to the implementation of collaborative innovations.

This is the initial version of the model for assessing the maturity of business processes with collaborative innovations, which requires further improvement and evaluation in practical terms

It is envisaged that the validation of the developed model will be assigned to an expert group of managers from businesses of Bulgarian furniture cluster. All participants in the group will be provided with full information on the structure and characteristics of the model, accompanied by a questionnaire. The resulting feedback will be analyzed by the author for refinements and adjustments. It is envisaged that with the advanced model will be carried out a study of collaborative innovations in enterprises of Bulgarian furniture cluster based on specific innovative solutions. The main objective of the study was conceived to test the validity of the model and to identify areas in which it manifests imperfections.

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MARKET COMMUNICATION: CANO-MODEL AS ON INNOVATIVE METHOD OF MEACURING COSTUMER SATISFSCTION

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Abstract: *Meeting or surpassing customer satisfaction with products and services is one of the most significant factors that amount to its product positioning as well as marketing strategy of marketing managers. When customer satisfaction with products and services exceeds specified goals a customer becomes loyal and spreads positive information about a product/ service, which is very useful in managing business.*

Keywords: *market communication, quality, the Kano model, costumer satisfsction*

1. INTRODUCTION

„You have to operate the way the bayers want, not the way you want it."
Noriaki Kano

We live in a consumer, market society, in a society of market communications. This means that the modern business and market communication is unthinkable without market research and consumer. One of the most important segments of market research is accompanied by changes in assessment and customer satisfaction / service users (hereinafter referred to as c / su) specific product or service (hereinafter referred to as c / s). Modern marketing concept is oriented to the consumer, which implies the necessity of permanent insight into their expectations of certain characteristics of c / s. The consumer / service user is the focus of modern marketing communications. The quality of a product or service determines its requirements, needs, desires, etc., respectively, the characteristics of the product to adapt to consumers. Therefore, the quality of products / services are not assessed more on the basis of their characteristics but based on satisfaction, expectations, tastes and needs of c / su.

In that sense, Branko Maricic claims that customer satisfaction and customer service "predictive indicator of business success which measures how consumers will react to the offer of the future".[1] Therefore, survey of c / su satisfaction certain c / s (or some of its characteristics) leads to results that serve basis when determining the measures to improve the quality of a particular c / s and increase c / su satisfaction , and to create a basis for marketing strategies.

The operations of a business entity can be viewed through two segments:

- effectiveness of business – c / su satisfaction (achieved c / su satisfaction)
- Business Efficiency - realized profits (lower costs).

It is understandable that the provision of some services to the realization of certain market needs, and meeting the needs of consumers and service users. Therefore, the main objective of marketing, "consumer production" or more precisely achieve their satisfaction (satisfaction) and therefore a loyal c / su. Only c / su with high satisfaction (satisfied customer) to continuously provide services, competitiveness and profitability of the economic entity. In this sense Bari Babin and Eric Harris (Barry Babin & Eric Harris) believe that the satisfaction (satisfaction) the c / su "is one of the most commonly measured concepts in consumer behavior, but it is also the most difficult to

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1 Maričić R. Branko (2011). *Ponašanje potrošača* (9th revised edition), Beograd: Economic University in Belgrade, pg. 472.

accurately measure“.[2] The degree of customer satisfaction / service user has a significant impact on the market positioning of each service. Basically the primary goal of modern marketing concept is to determine to what extent the service met the wishes, expectations, needs, tastes, consumer / home, or what is the satisfaction of their new product / service quality. So marketers need to constantly ask questions related to this phenomenon and to search for objective answers.

- the extent to which secured the quality of products / services, or the satisfaction of desires, needs, expectations and thus customer
- what is it that ensures customer satisfaction what makes it pleased,
- what are the characteristics of the products / services that contribute to increasing the duration or pleasure,
- how to track (explore, measure) the level of satisfaction (satisfaction) the consumer right quality of products / services,
- how to come up with high customer satisfaction product / service?

2. SATISFACTION OF QUALITY PRODUCTS AND SERVICES

Satisfaction is a feeling of satisfaction that occurs in the phase after the purchase and consumption of products. Satisfaction (satisfaction) the consumer is the key to retaining existing and attracting new consumers. Therefore, the creation of customer satisfaction heart of modern marketing thinking and marketing or practice. In order to achieve customer satisfaction and achieved a positive operating result, it is necessary to first determine what consumers want, what they expect, what is for them the value of what for them is the quality of the product. In this regard, US scientists John Hauser and Clausing Don are considered to be "the voice of the consumer" of primary importance for creating products.[3] The concept of the modern consumer marketing (New Consumer Marketing - NCM) means that all marketing activities must be directed towards defining, creating and delivering value to consumers. Thus, the modern marketing includes the following activities: research satisfaction (quality, expectations, value, satisfaction, attitudes) and consumer behavior, new product development, product positioning in the market, price strategy formulation, creating a strong brand, marketing communication, sales and after-sales service development.

A similar relationship has economic entity with the client and when it comes to services. Their needs, desires, expectations are manifested through the provision of certain quality and quantity of services. The user expects a certain level of (high-value) qualitative attributes of service (reliability, speed, accuracy, flexibility, security, prevalence, awareness, etc When the service provider meets the basic expectations of their clients build on their basic satisfaction, but the question remains to what extent they will be loyal users of services. To have a very satisfied user of services a service provider must, to some extent surpass the expectations of its users. That is, it is necessary to create loyal customers. This is achieved by providing additional services or improving existing feature that the user has not explicitly requested nor expected. It is possible to provide the user with a series of new small services, more information, greater accuracy, show greater care of their needs, wishes and requirements. So, you need to create so-called. exciting events that cause a special feeling and increased customer satisfaction.

In general very little attention is paid to the study of customer satisfaction in this area. Perhaps some of the reasons for the lack of competitiveness and economic stagnation in hiding and Neglecting customer satisfaction survey to certain c / s. At a certain level of satisfaction with the service provided or the production is influenced by numerous factors such as the quality of products / services, consumer personality (structure, character, habits, tastes, etc.), The price of the product / service, overall sales / service atmosphere, situational factors etc. . It is difficult to single out one as the most important factor in customer satisfaction. They are all intertwined, interrelated and determine each other. In the process of satisfaction (satisfaction) the consumer evaluate the different dimensions of the product / service. Satisfaction is the consumer occurs not only when the product / service quality meets or exceeds their expectations, but also when other elements of products / services comply or exceed their expectations in a positive way. In the final dungeon of satisfaction is seen as Criteria Row quality of products / services. In order to establish the concept of total customer satisfaction / service users and ensure their loyalty (Loyalty) total quality management ("Total Quality Menagment" - TQM) is used. For a long time the marketing experts observed a one-dimensional consumer satisfaction, and felt that a higher quality of products / services implies a higher level of customer satisfaction. But studies have shown that in many cases FILLING high standards of products / services are not in themselves bring greater satisfaction to consumers or users of services.[4]

3. RESEARCH METHODS AND TECHNIQUES (MEASUREMENTS) CUSTOMER SATISFACTION

One of the most important issues that have plagued marketers and questions of measurement (assessment) the level of customer satisfaction. How to evaluate the level of the phenomenon that we call satisfaction? The survey of customer satisfaction is required methodological process that has certain limitations and difficulties. The difficulty of measuring customer satisfaction derived from

[2] Babin Barry & Harris Eric (2012). *Ponašanje potrošača*, Beograd, Data Status, pg. 259.

[3] Hauser R. John, Clausing P. Don (1988). The House of Quality“, *Harvard Business Rewiew*, № 66, Vol. 3, (May-June), pp. 63-83.

[4]These are the requirements that define standards of product quality and consumer satisfaction.

the fact that he is a subjective psychological category and degree of satisfaction depends on the structure of personality, its experience, cheers, formed taste and other individual psychological characteristics. As a result of solving the complexity of the phenomenon of research marketing experts have developed numerous ways, methods and techniques for measuring customer satisfaction of the consumer. All methods of measuring the level of customer satisfaction can be based on the criteria of directness to grant two main groups: a) the indirect method, and b) the direct method.[5]

So, the famous triad of "innovation - Modernization - creation" ("IMC") is in the case of measuring customer satisfaction / service users was the basis for the finding of adequate methods and techniques. Therefore, as a result of the efforts of marketing professionals to be innovative in finding ways of measuring this phenomenon spawned a number of character models and methods. I continue to look for new, more modern, creative and innovative methods to accurately identify individual elements of quality p / u and a new satisfaction c / su.

Another question that is imposed when it comes to measuring this phenomenon is a matter of finding an objective measure that can be detected and accurately measured (quantified) degree of (dis) satisfaction of consumers / users of certain services c / s. Conventionally it is determined that the measure is called. "Customer satisfaction index" (Customer Satisfaction Barometer - CSB). Among the first (1989 god.) Known attempts to quantify the degree of (dis) satisfaction of consumers / ku there is "Swedish customer satisfaction index" (Swedish Customer Satisfaction Barometer - SCSB) which measures satisfaction (satisfaction level) on the basis of consumer satisfaction of their demands and places them into three main groups. Very often used and the "American customer satisfaction index" (American Custumer Satisfaction Index - ACSI), which in the mid-last decade of the twentieth century (1994). Constructed American Society for Quality Control and the University of Michigan. It determines the degree of customer satisfaction / service users from the standpoint of his expectations of c / s, ie from the standpoint obtained (perceived) quality (value) c / s. Therefore this index (ACSI), also called "model of cause and effect." On the left side of the continuum "index cause-effect" (the user expectations, perceived quality and perceived value) is "satisfaction index", in the center of "index of indifference," and on the right side (customer complaints, customer loyalty, customer reception and tolerance by price) index "discontent"

The emergence of "the American customer satisfaction index" has initiated the development of new (regional and national) index for measuring customer satisfaction / service users. At the end of the twentieth century (1999 god.) Created the 'European index of customer satisfaction "(Europen Satisfaction Index - ECSI) which can monitor changes in consumer satisfaction (the client) over time. It is based on seven variables (latent variables): product and service quality, customer expectations, the observed value, brand image (reputation), customer satisfaction, customer loyalty and complaints (complaints) users.

And some countries have sought to define user satisfaction index for your area. Among the most famous are the "Norwegian customer satisfaction index" (Norway Index of Custumer Satisfaction - NCSB), "the Swiss index of customer satisfaction" (Swiss Index of Custumer Satisfaction - SWICS, while Germany has several indexes to measure user satisfaction of which the most "German barometer clients "(Deutsche Kundenbarometer - DK) from 1992. from 1998. EU countries each create their own specific index of consumer satisfaction.

4. KANO MODEL AS A METHOD OF ASSESSMENT CUSTOMER SATISFACTION

Measuring customer satisfaction (satisfaction) the consumer / service users c / s using the Kano model represents a new and innovative methodological approach to this phenomenon. It gives an answer to the essential question: how and how much influence they have certain characteristics of the product / service on the (non) satisfaction? In this region the "Kano model" as a tool of assessment and direct method of measuring satisfaction rarely used, although it is one of the most creative methods of measuring customer satisfaction / service users. Therefore, this model will devote our attention and present its basic characteristics. While not complex, nor for the implementation requires significant financial resources, it is rarely encountered examples of its use in marketing research. Kano model is used in the process of creating an adequate quality of product and service. This model is much more demanding when it comes to medium and large businesses. He has a number of advantages over other methods of direct measurement of customer satisfaction that will power a little more to say later.

Its creator is a Japanese economist and professor at Tokyo University Noriaki Kano (Noriaki Kano, b. 1940.). (Fig. 1). He and his associates in the work "Appealing quality and necessary quality" ("Attractive Quality and Must-Be Quality") presented the basic tenets of the new model for determining customer satisfaction / service users.[6]

[5] As a means (tool) direct measurement of the quality of certain products / services are most commonly used: „Kuća kvaliteta“, „Planiranje kvaliteta usmerenog ka potrebama kupca“ („*Quality Function Deployment*“ - QFD“); „Tehnika kritičkog događaja“(„*Critical Incident Technique*“ - CIT); „Sistem za otkrivanje problem“(„*System Problem Detected*“ - SPD); „Anketa zadovoljstva korisnika“ („*Customer Satisfaction Survey*-CSS; „Uticaj profita na marketing strategije“ („*Profit Impact of Market Strategy*” - PIMS); „Kvalitet usluge“ („*Service Quality*“- „*Servqual metod*“); *„Serqual model“,* „Kano model“ („*Kano model*“) and etc.

[6] Kano Noriaki, Nobuhiku Seraku, Fumio Takahashi & Shinichi Tsuji (1984). “Attractive Quality and Must-Be Quality”, *Journal of the Japanese Society for Quality Control* (in Japanese), Vol. 14 № 2, pp. 39–48.

Image 1: Noriaki Kano[7]

His most famous work is the "Guide to TQM in mucilaginous industry" ("Guide to TQM in Service Industries") in which he made a significant contribution to the concept of total quality management ("Total Quality Management" - TQM) products and services. On the beginning of the ninth decade of the twentieth century (1980 god.) Worked on creating methods and models that would be able to identify those characteristics of the products / services that enable satisfaction of desires, demands, expectations and needs of consumers. Kano model is now one of the most popular ways of exploring customer satisfaction (Fig. 2). Very often in the world use marketing experts in the research phase of the market, or when necessary to determine the characteristics of new products / services can be crucial for the (dis) satisfaction of consumers. As the model is based on marketing theory that certain features as elements of the quality of products / services have a primary and the other secondary importance in the formation of satisfaction (satisfaction) the consumer, and some turn a decisive influence on the creation of their discontent. Thus, the product / service to its characteristics is done asymmetric impact ("Overall Customer Satisfaction" - OSC) to (dis) satisfaction of consumers or the same characteristics of the product / service can have different strength and direction of impact (non-linear effect) to the total satisfaction depending on the effects which caused the consumer to give the product / service.

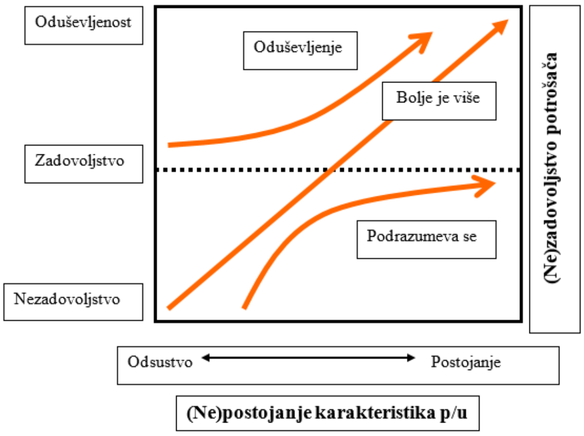

Image 2: Graphic Kano model of customer satisfaction

Kano model was created three and a half decades. In the meantime, slightly innovated and improved. This model provides in-depth observation of customer satisfaction. David Jobber and John Fahy emphasize the importance of Kano model in the following way: "To understand the concept of customer satisfaction, Kano model helps in distinguishing characteristics that cause dissatisfaction, satisfaction and delight. Three characteristics are the basis of this model, "that which has to be " more means better 'and' what inspires ". As such, it identifies three levels (three kinds of characteristics of products / services; three levels of experience of the quality of products / services), customer satisfaction, and the characteristics of c / s causing a certain degree of (dis) satisfaction: a) dissatisfaction, b) satisfaction and c) enthusiasm. (Fig. 2). Basic characteristics c / s of this model are: a) "means" (first level), b) "better is more" (another new) and c) "enthusiasm" (third level).

The first level (Q = O), "basic features" (the "basic characteristics", "basic requirements", "Expected Needs," "includes," "Must-Be requirements", "satisfactory level", "things which must be "). It means those characteristics of c / s which the consumer is expected (they are necessary). In the event that some of the characteristics (attributes) c / s missing the consumer becomes dissatisfied. But Kano model warns that consumers who are in the group "means" (although their expectations fulfilled) can easily change the manufacturer or service provider. Specifically, each product / service must have the basic characteristics to the consumer caused minimal satisfaction or normal level of satisfaction. This is the minimum features that consumers expect from a product / service. Failure to meet these requirements (characteristics of the products / services) entails a high level of consumer dissatisfaction. Or, in the case of a particular product / service does not have the basic properties that are expected (required) reported the occurrence of consumer dissatisfaction. As a consumer believes that these characteristics of the products / services include (they are a necessary condition for the existence of a certain c / s), their fulfillment does not increase satisfaction, but it only leads to a state of not being "dissatisfied consumer" ("unsatisfied customer "). This means that the improvement of the basic properties of p / u will not increase customer satisfaction / ku. Consumer satisfaction at this level their expectations of the main characteristics of the product / service does not express explicit (they are unspoken).

The second level (P> O): "the expected characteristics" ("one-dimensional properties," ("one-dimensional requirements", "Normal Needs," linear properties "," One-demensional requirements "," above satisfactory level "," the more the better "" better means more "). This, the second level (level) satisfaction (" the more the better ") increases customer satisfaction. These characteristics of products / services directly affecting the increase in the level of customer satisfaction. In fact, with a significant improvement in the characteristics of the product /

http://ci.nii.ac.jp/Detail/detail.do?LOCALID=ART0003570680&lang=en (23. 8. 2015)

[7] Source: http://www.hbmsu.ac.ae/schools-programs/e-tqm-institute/institute-awards/kano-medal (2. 4 .2014).

services (improving their properties, increasing quality, increasing the functionality of fulfilling expectations, etc.) proportionately increases the level of satisfaction, but it is also quite certain the opposite direction of the impact, which increases the level of dissatisfaction. In this case, the price of a product / service to often appears as a key feature of linear products / services affecting the level of customer satisfaction. at this level of satisfaction consumers express his or her wishes explicit requirements (they are spoken).

The third level (P >> O) "attractive features", "attractive Requirements" ("exciting properties," "exciting Requirements" "Exciting Needs", "more than satisfactory level", "exciting properties," "Attractive requests" "latent requirement", "unknown desires", "what impresses", "delight"). When the consumer is "pleasantly surprised" attributes c / s then we can expect the highest (third) level of his satisfaction - "enthusiasm". Why is this significant level of customer satisfaction? He, in addition to rational and emotional preference creates the basis for building customer loyalty towards a particular c / s. Thus, consumers who have this degree of satisfaction c / s stated its readiness to move to the competition.

David Jobber in his work "Principles and Practice of Marketing," notes that the Kano model enabled the eve of a new trend in consumer satisfaction. Specifically, efforts are marketing experts to ensure the highest possible level of customer satisfaction (to be amazed by the characteristics of c / s) led to raising the threshold "means" the threshold of "more is more", but also to tightening standards and consumer demands. What "inspires" becomes "normal", ie transformed into the satisfaction level of which is determined as a "means" Thus, manufacturers / service providers are forced to provide higher and higher quality of c / s, respectively, not only to meet the expectations c / s but to surpass them as much (Toyota's slogan: "our goal is to delight our customers car!"). Because these characteristics of the product / service is not expected by the consumer, they cause the greatest level of satisfaction and therefore customer satisfaction. Product / Service, having "exciting properties," providing consumers with a high level of satisfaction that express a willingness to pay a high price. If the product / service possesses characteristics that produce normal levels of satisfaction satisfaction is not significantly reduced because the consumer is not expected and therefore not designated as his own request, desire, need. As a consumer of the characteristics of the product / service does not know he is explicit about them and is silent (they are not spoken).

Marketing specialists such tripartite division of the characteristics of the product / service (satisfaction level) helps them to improve their market position c / s only by improving certain characteristics or by adding a certain attractiveness. It should take into account the relativity of satisfaction because consumer expectations variable category. So, what at one time perceived by consumers as an attractive, high-quality, exciting, after some time can take the character of the basic properties of the product / service. To marketers require permanent monitoring of desires, needs to product features / services adapted to these changes and new requirements c / su.

5. ADVANTAGES OF KANO MODEL AS A METHOD OF MEASUREMENT CUSTOMER SATISFACTION

Kano model of customer satisfaction surveys / ku has many advantages over a long methodological procedures to investigate this phenomenon. That's why he is one of the world's most famous and highly reliable technique used by marketing experts in market research and strategic positioning of products / services. Here we highlight only the most important:

1. It provides an opportunity to identify the needs and desires of consumers, as well as their priorities.
2. It allows the realization of priority development of the product / service. It is useful to improve the basic properties of the product / service, or even more to raise the quality of certain products / services that surpass reach a satisfactory level and attractive requirements. This makes it possible to affect only those qualities of the product / service that will raise the level of customer.
3. This model of measuring customer satisfaction can be combined with other methods of research of customer satisfaction This model of measuring customer satisfaction can be combined with other methods of research of customer satisfaction
4. 4. It is useful for determining the relevance of the specific characteristics of the product / service to consumers, their impact on their level of satisfaction.
5. It creates conditions for optimum development of products / services.
6. Allows full term rational solutions in the so-called trade-off situations, development of products / services, or finding a compromise when it needs to improve some characteristics of the product / service at the expense of other characteristics of the same product / service. So, what provides an answer can be increased, and what cut of the products / services (reduced production costs), but that does not diminish customer satisfaction.
7. All these levels of satisfaction differ in levels of expectations for different categories of consumers.
8. Kano model ensures optimal level of satisfaction of various demands, desires, needs of consumers.
9. Open space to identify those characteristics of the product / service initiated by the evening the level of customer satisfaction

6. CONCLUSION

Modern market economy conditions of the undertaking requiring many activities. One of the major research and permanent monitoring of the level of satisfaction (satisfaction) of consumers / users of services offered c / s. This means that it is necessary in all circumstances strive to be the market delivers adequate value, or quality of such a characteristic c / s to follow current needs, wishes and expectations of consumers and users of services. Therefore navigation undertakings in the marketing involves creating and delivering value to customers in order to meet their expectations, hopes and needs. In so far as to give c / s (not) meets his needs (expectations, hopes, desires), or it presents a value for him to the extent of his satisfaction will be determined. The essence of modern marketing is the "production" of satisfied and loyal customers or service users. In this regard, Philip Kotler and Gary Armstrong argue that the "creation of value and customer satisfaction heart of modern marketing thinking and practice." The knowledge characteristic of c / s to consumers indifferent or that they delight create the conditions for the creation of a company or business policy and marketing strategy. This is one of the most important preconditions for the company to be profitable. Marketing experts and numerous market research institutes use various methods to try to discover the characteristics of the services that affect user satisfaction target groups. We can say that Kano model is one of the most innovative, the simplest, most flexible, most universal and most efficient method of determining the level of customer satisfaction / service users.

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LOBBYING IN THE EU IN RELATION TO DEMOCRATIC LEGITIMACY AND RESOURCE DEPENDANCE

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Abstract: *The institutional establishment of the European Union has created a high level of cooperation with non-institutional interest groups. The goal of the paper is to analyse the roots of this collaboration in relation to democratic legitimacy and resource dependency. This paper further studies the role that lobbying has in fulfilling several key systemic functions in the scope of democratic legitimacy. We examine herein the theoretical foundations of interest representation in the EU in the context of theories of deliberative and participatory democracy. We further analyse the sources of intense collaboration of EU institutions and interest groups through the perspective of resource dependency theory, which explains why the relationship between the lobbyists and the EU institutions has developed to be so intense and interdependent.*

Keywords*: EU lobbying, Interest representation, EU policy, democratic legitimacy, resource dependence, access goods theory, anti-elitism*

1. LOBBYING IN THE EUROPEAN UNION

Developed modern political systems are based on cooperation and interaction with individuals and groups with numerous and diverse demands, needs and interests. The groups can choose to be more or less active in this political process because the decisions affect them. They can choose to advocate for their needs and lobby the policy makers, depending on the level of their motivation. Lobbying happens on all levels of governance; local, national and international. This also applies to the EU level of institutions. Lobbying is a deliberate attempt of organised interest groups to influence political decisions. Both public and private interests have a legitimate role to play in the policy process, making their participation one of the foundations of a democratic system. Representing interests in the European Union governance arena is a specific field of lobbying. It encompasses working with EU decision makers who are in their own right unique governing bodies. Interest representation is conducted between two main parties: the EU institutions and organised interest groups. The professional interest or policy groups are very diverse, and occupy local, national and international platforms of influence. EU lobbying takes transnational routes, but it can also be bilateral and multilateral, it can be conducted in parallel on more levels, in Brussels, on the home front and in another multinational platform.

One of the idiosyncrasies of EU interest representation is that the institutional establishment created an above-average level of integration and cooperation with non-institutional interest groups. The causes of this association lie in several sources, and here we examine two of them, democratic legitimacy and limited resources, explained through the resource dependence theory.

2. THE INCLUSION OF INTEREST GROUPS IN THE POLICY PROCESS

The reasons why there is such an intensive and high level of policy interest groups inclusion in the EU policy process has been explained by four factors in particular. [1] Firstly, the sheer size and depth of EU regulation activity has been steadily growing since its establishment. This involves local, national and supranational level of regulation which EU institutions work on. The growth has been marked also by policy responsibilities given to EU institutions, the amplified number of types of decisions they need to make and enlarged number of Member States in the Union.

Secondly, EU regulations and procedures have provided a vast array of entry points for various non-institutional policy interests to bring in their demands and counsel. The plentitude of access points to the EU bodies are linked to the pluralism of institutional levels which have legislative authority, so the access points exist on the level of the Commission, the Council and the European Parliament. The formal EU policy process has over time being subject to continuous evolutionary development.

Apart from the formal nature, there is also the informal nature of the policy process where the policy interest groups need to be and are present. Its attributes are not specified in the EU regulation or in other official agreements among policy bodies. The informal forums serve to facilitate more efficient policy making and smoother inter-institutional cooperation. The example are the trilogues, informal meetings of the Commission, the Council and the European Parliament, which have become extremely frequent.

Thirdly, the Commission and the Parliament are open and approachable to policy interest groups because they have their own demands and requirements which policy interest groups can provide. This prompted them to encourage the access of policy interests.

Fourthly, the EU lacks a strong and legitimate political leadership, so some space is created for specific forms of policy interests involvement. We will examine further the concept of access due to democratic legitimacy and resource dependency.

3. THE DEMOCRATIC LEGITIMACY IN THE EU AND THE ROLE OF LOBBYING

The democratic legitimacy points to the democratic process by which an institution has acquired its powers and influence and as such has *a priori* credibility and trust of the citizens. The democratic legitimacy of the European institutions has since its establishment led to continuous academic and political debate. [2] The European Union *per se* is an integrated European mixed polity [3] with some attributes of a state, but is also an advanced intergovernmental organisation. It is a specific combination of a liberal democracy and an international organisation. [4] EU legitimacy is brought into question due to the fact that only the European Parliament undergoes a democratic election process. The EU institutions therefore have a need for the non-institutional societal and economic actors to fulfill the democratic legitimacy role.

The European Parliament, the European Council, the Council of the European Union (the Council) and the European Commission hold the executive and legislative power of the European Union. The only institution directly elected is the European Parliament, with elections held every 5 years. The European Council consists of the heads of state, elected by the citizens of their own country. The Commission, being the most relevant lobbying target, is an unelected body consisting of persons nominated by each member state rather than elected by its citizens. To add to the relatively low esteem of democratic legitimacy of the EU the response of the citizens in direct elections for the European Parliament has always been modest. Furthermore, individual citizens seldom directly address EU institutions, which results in a degree of isolation of the EU institutions. EU officials and the administration have no way to directly hear the voice of the citizens.

This space has been filled up by organised interest groups. The democratic legitimacy and the pluralistic institutional set up provide for numerous forms of participation of non-institutional organised interests. The numbers of professional interest groups lobbying on the EU level have been increasing for years and is showing no signs of slowing down. Their function is to transmit requests and proposals from individuals and organisations. As the EU does not have any form of official opposition, the interest groups, especially mutually opposing and competing ones, [5] have partly taken on this systemic role. The EU institutions therefore listen to and increasingly cooperate with the representatives from various social and economic interest groups.

4. THE THEORIES OF DELIBERATIVE AND PARTICIPATORY DEMOCRACY AS THEORETICAL FOUNDATIONS FOR LOBBYING IN THE EU

The openness of the EU institutions to interest group involvement is based on the principles of both participatory and deliberative democracy theories. The theory of deliberative democracy emphasises public involvement in the discussion of the common good that concerns all, so the discussion is not confined only to decision and policy makers. Professional lobby groups conduct consistent conciliatory consultation [6] with the EU bodies, so the policy making is often depoliticised.

Deliberative democracy and anti elitisam of EU lobbying

The deliberation and communication that dominates the process of interest representation in the EU takes three basic forms: negotiation, discussion and acceptance. [7] Through these forms of deliberation the social and political advocacy actors are attempting to harmonise often conflicting interests. The process allows for the two main parties, institutions and lobbyists, to come to a mutual exchange in achieving balanced and fair regulation for all involved.

Another idiosyncrasy of EU lobbying is that everyone is able to begin the process officially lobbying for their interests. The right to conduct the official lobbying process is granted not only to inter alia Member States or international organisations, but also individuals, companies, ngo`s, academia, and organised interests of various associations, cities, regions and religious entities. It is the pluralistic institutional framework of the EU which ensures balanced competition between a number of stakeholders. [8]

In that sense the EU structure is different from other international organisations such as the United Nations, the World Health Organisation or the Council of Europe. Access to the UN or WHO is limited to the country's political elites, top government roles and ministries. The EU explicitly promotes anti-elitism, in which each can represent their interests. Emphasis is not on the official level of state representation but on the scope of representation of the interest group. This criteria varies, depending on the type of the interest group, mostly setting it based on the scale and level of representation, demanding that both large numbers of individuals or organisations are represented in the specific interest group so the lobbyist does not lack legitimacy. The EU promotes advocacy from all social and political structures which have a large base but are in addition required to bring credibility and good reputation. [9] The implementation of this principle takes different forms, of which some have met critique pointing to fact that more of same policy groups keep getting access, forming priviledged concillary circles.

The theory of participative democracy

The EU has gradually acquired new attributes that bring it closer to the participatory democratic practice. Participatory theory is concerned with the direct participation of citizens in the processes of public policy. The Lisbon Treaty has only recently introduced new elements of participatory democracy into the functioning of the EU, in addition to representative democracy on which the Union was originally founded. As far as the participative theory is concerned, until the adoption of the Lisbon Treaty citizens were not able to have direct participation in the EU legislative process, yet the new European citizens' initiative has enabled this possibility. The introduction of the principles and instruments of participatory democracy and giving powers to the European Parliament by the Lisbon Treaty have also largely helped to resolve the Parliament's issues of empowerment. [10] Since 2012 citizens of the EU may petition and request a legislative motion from the Commission. The condition is that the petition encompass a large number of individuals, the threshold being set at one million citizens’ signatures who are from no less than seven different countries.

5. RESOURCE DEPENDENCE THEORY AS THE BASIS FOR AN ACTIVE RELATIONSHIP OF EU INSTITUTIONS AND INTEREST GROUPS

As discussed above, the EU institutions need the non-institutional societal and economic actors to fulfil the democratic legitimacy role. Furthermore, there is also another need that institutions have which is one of the main reasons for the functional working relationship between EU institutions and lobbyists. EU institutions find it arduous to perform their full function as they are faced with a chronic limitation of resources. The trend of growing administration and hyper-regulation centered in Brussels is drawing on enormous quantities of expertise and other resources the EU does not have access to.

The intensity of the process and strain on the regulators can be illustrated by a case from 2004 when a set of 56 draft regulations prepared by the European Commission was published. At the stage of the public debate more than 4,000 letters, proposals, suggestions, and other views arrived from interested parties. Among the responses was a letter signed by 110 different coalitions. [11] It not only points to the large interest of the potentially affected parties, but also to the complexity and difficulty in dealing with the responses on the part of the institutions.

A theoretical background to offer an understanding of this phenomena is the resource dependence theory. The theory studies the extent to which external resources of organisations influence the behavior of an organisation itself. [12] Availability of external sources that the organization itself does not posses is one of the methods of its management. The EU is such an organisation. It has a continuing need to "collect" the lacking resources, mainly information and data, but also analysis and synthesis expertise. Information and data are necessary in order to bring about balanced decisions, to make sure they are not overly contested in the implementation phase, so the institutions can fulfill their role. [13]

From their perspective, in order to advocate for their needs and demands, interest groups must have access to the EU decision making bodies. The groups which are about to exert influence need to decide who precisely is their target, and such a choice is made through horizontal venue shopping. In order to access the institutions, organised interests must know the procedure and the participants, but also recognise and understand the requirements and provisions of the targeted EU bodies. [14] This is the nexus where a significant resource dependency has emerged between officials and lobbyists. The access of lobbying interests is thus governed by the theories of resource exchange, which relates to the concept of access goods.

Interest groups need to access information about the regulatory procedure and players, agenda setting, and policy makers so as to obtain the desired results. Access to institutions is thus open to non-institutional societal and economic actors that have the access goods which are necessary for the EU institutions. Resource exchange presupposes a relationship of mutual dependence between interest groups and EU bodies, founded on access goods but also on trustworthiness [15], reliability and legitimacy of interest groups. Both parties have a proposition that has mutual worthiness.

EU institutions need to obtain three types of access goods. The first type is the specialist technical and professional knowledge base necessary for making functional and applicable regulation. The second type is a set of information that includes data from the pan-European sphere which is the European Encompassing Interest. This immediately suggests that a lobbying organisation to be relevant to the EU needs to posses such data and usually advocates for a large enough number of citizens and organised groups throughout Europe. The third set of information needed for the EU institutions is connected with the individual Member States, which is Domestic Encompassing Interest. [16] This is the resource trinity which holds the master key to unlock access to institutions. A very large number of professional organisations in Brussels posses this set of data and information, and thus have an open channel of communication with decision-makers.

5. CONCLUSION

EU interest representation is characterised by a close cooperation of EU institutions and interest groups. The sources of this collaboration have been examined in relation to democratic legitimacy and limited resources. Continually developing democratic legitimacy provides for various forms of participation of non-institutional organised interests to take place and fulfill some of crucial democratic functions. Those functions encompass elements of direct communicating with the “electorate”, giving feedback about planned or implemented regulation, and challenging the decision making EU bodies in the manner of political opposition. The contribution of the lobbyists to the EU political set up are rooted in both the deliberative and, increasingly after the Lisbon Treaty, in the participatory democratic theory. The participativeness is especially reflected in the opportunity for all social and economic actors to officially address the EU bodies, emphasising its anti-elitist system.

In addition to filling the space in the legitimacy arena, the lobbyists are intensely working with the EU policy makers on the basis of mutual resource dependancy. The depandency mostly involves information and data. The institutions demand specialised technical and professional expertise, material from the wider, pan European affairs and also specific data from the Member States. The lobbyists are in need of information about the regulatory process, agenda setting and the relevant participants. This resource exchange nexus greatly explains why the relationship between the EU institutions and lobbyists has been so intensive.

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INNOVATIVE APPROACHES IN UNIVERSITY AND LIFELONG STYLE OF LEARNING DESIGNED FOR NEW GENERATIONS

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Abstract: *The intensity of changes, caused by digitalization and globalization, opens up space for new manners of thinking aimed at sustainable company business-making for a longer period of time. The knowledge era is shifting towards the era of design thinking, entrepreneurship and innovation. Some recent research show that collaboration, communication, creativity and critical thinking are the four skills acting as indispensable wheels on the exciting 21st century' journey. How are millennials prepared for new challenges as a new generation of working force? The Y generation or digital natives are different in their learning style and the way in which they expect to be trained, and coached. According to recent literature, millennials prefer interactive collaborative learning, like sharing stories and experience with their peers. The flipped-classroom in university education is a new way of education that, in comparison to traditional style of lecturing, is more personalized to students giving them learning by doing outcomes.*

The paper would represent results of the research conducted among Serbian millennials regarding their style of learning and behavior, and attitudes toward collaborative and interactive learning like the flipped-classroom. In 2021, the Y generation will take up more than 50% of Serbian workforce. What type of skills have they acquired to be more proactive and flexible to open themselves to innovation in their working places?

Keywords: *flipped-classroom, digital natives, collaborative learning, design thinking, innovation, learning by doing*

1. DIGITAL ERA AND LIFELONG LEARNING

Alvin Tofler said that the illiterate of the 21st century were not those who could not read or write, but those who could not learn, unlearn, and relearn. As we are nowadays witnessing the advent of the global information society, where technology has increased the amount of information available and the speed of its transmission beyond all expectations, there is still a long way to go before we achieve genuine knowledge societies [1]. The four pillars of learning that Delors [2] suggests are: learning to know, do, be and live together. In an information-intensive age, education is mandated to respond to demands in two directions: on the one hand, it has to transmit an increasing amount of constantly evolving knowledge and know-how adapted to a knowledge-driven civilization; on the other hand, it has to enable learners not to be overwhelmed by the flows of information, while keeping personal and social development as its end in view. Therefore, education must simultaneously provide maps of a complex world in constant turmoil and the compass that will enable people to find their way [3]. According to Jarvis [4] there are six reasons why we need to learn: to be persons, not just employees; to do work, not only to labor; to know or have opportunities to acquire a broader spectrum of knowledge; to live together, respecting each other, as active citizens seeking to create a better world, even a good society; to respect the world and not just use its resources to the benefit of a minority; to keep striving towards the type of society that lifelong learning and the learning society actually offer.

Mental tasks of knowledge work (accessing, searching, analyzing, storing, managing, creating, and communicating information and knowledge) are becoming easier and more efficient as our digital tools for thinking, learning, communicating, collaborating, and working become more powerful, integrated, connected, and easier to use [5]. The ability to quickly acquire and apply new knowledge, and the know-how to apply essential skills such as problem solving, communication, teamwork, technology use, and innovation are two essential skill sets at the list of job requirements for the 21st century. A study [6] clearly showed that students graduating from secondary schools, technical colleges, and universities deeply lack some basic skills, as well as a large number of applied skills: oral and written communication, critical thinking and problem-solving, professionalism and work ethic, teamwork and collaboration, working in diverse teams, application of technology, leadership and project management. Reports from around the world confirm that this “21st century skills gap” costs business a great deal of money [7]. Employers increasingly request recent secondary school graduates to prove their claims relating to their skills and competences; otherwise, they need to deal with employees with university education who do not have practical knowledge and skills, which is both time and money consuming for them. Faced with high costs of education and employers’ requests, students also insist that their education should result in measurable skills and abilities [8].

Schools from all over the world are innovating learning designs and the manner of learning in the digital era that students would need for 21st century success. The manner in which Serbian school system responds to digital and global changes will be presented in the results of the new generation’ research in Serbia regarding their style of learning, behavior and attitudes toward collaborative and interactive learning.

2. NEW GENERATIONS’ DEMANDS ON EDUCATION SYSTEM IN 21ST CENTURY

“Digital natives,” “net geners,” “netizens,” “homo zappiens” are members of the first generation growing up surrounded by digital media (now aged between sixteen and thirty-six) [9] [10] [11]. They are different from “digital immigrants” who learned to “do technology” later in life. The Y generation or millennials are members of the first generation knowing more about the most powerful tools for change that are digital information and communications technologies. Since their parents and teachers are quite new in these disciplines, students switch roles and become digital mentors, while teachers and parents become part-time students of digital experts. The ultimate goal of reverse mentoring is to promote relationships between and within the generations, to provide everyone with the possibility to change themselves and, consequently, their ecology.

New generations’ lifelong engagement is based on digital platforms which present their systems aimed at ensuring their satisfaction, meeting their expectations, and corresponding to their values and behaviors. According to research [12], some of the characteristics differentiating Y generation from their parents are: freedom to choose what they find right and express their personal views and individual identity, customization and personalization, the ability to change things to suit their own needs better, integrity and openness in their interaction with others, entertainment and play integrated into their work, learning and social life, collaboration and relationships as a vital part of all they do, speed of communications, obtaining of information and responses to questions and messages, innovation in products, services, employers, and schools, as well as in their own lives. It takes new ways of making learning interactive, personalized, collaborative, creative, and innovative to engage and keep new generations actively learning in schools everywhere [13].

Collaborative learning is an instructional method whereby a group of learners work together to achieve common objectives and goals [14]. According to the research [15] collaborative project approaches to learning allow students to learn more thoroughly when applying classroom knowledge to real problems, and taking part in projects requiring continuous engagement and collaboration. Active and collaborative learning practices have a more significant impact on student performance than any other variable, including student background and prior achievement. Students are most successful when they are taught *how* to learn as well as *what* to learn.

3. TEACHERS’ RESPONSE TO NEW GENERATIONS’ DEMANDS IN 21st CENTURY

In the 21st century infrastructure teachers also learn to play the role of a facilitator and coach providing knowledge and assistance. In the 21st century, teachers ought to manage the innovative style of classroom activities, supporting teams of students in terms of exploring and gaining new skills which will prepare them for the future life. They need to be well-coordinated with current changes in curricula, assessments and other key performance indicators. The coaching style of the educator relates not only to the subject being taught, but also to the purpose and broader picture. What is important for the student? What are his or her values? Teacher coaches can help students learn how to set goals, define measurable action steps, and assess themselves. Their role is to facilitate brainstorming, ignite creativity and integrate different strategies and tools in the learning process. Thus, students are supported during the challenging studying time. Leadership coaching can prepare students to take on future career more seriously and confidently [16].

With the initiation of Web 2.0 technology, it is possible to develop two ways of communication among students in relation to learning activities, as it is shown in Table 1.

Table 1: 21st Century Learning Balance [17]

Teacher-directed	Direct instruction
Knowledge	Content
Basic skills	Facts and principles
Theory	Curriculum
Time-slotted	One-size-fits-all
Competitive	Classroom
Text-based	Summary tests

Learning for school	Learner-centered
Interactive exchange	Skills
Process	Applied skills
Questions and problems	Practice
Projects	On-demand
Personalized	Collaborative
Global community	Web-based
Formative evaluations	Learning for life

Teachers will have to communicate and collaborate with students and other teachers and experts, working in teams to create and share the most engaging and challenging projects. Thorough and continuous investments in professional development of teachers will be of utmost importance in the future transformation of educational systems world-wide. By asking carefully tailored questions, the teacher as a coach provokes thinking and reflection of experiences, thus developing ability and creativity. Coaching is the most efficient form of work which enables use of the method of learning through experience. Such form of work implies responsibility of the very person who is being developed, and his or her active participation in empowerment of their capacities and skills. A new manner of thinking and communication of the teacher - leader with his or her students - employees is needed so that results of synergetic action could be efficient and effective, thus making faculties - companies successful in the 21st century business-making [18].

4. INNOVATIVE APPROACH IN LEARNING SUCH AS FLIP CLASSROOM – BEST PRACTICES

Except for the Internet, pen and paper, mobile phones, educational games, tests, quizzes, a good teacher, parents, and financial funds, there are two key tools which should be added on this list, and which are the most powerful learning tools ever created: questions and the process of uncovering answers to them, and problems and inventing of their possible solutions. Indira Gandhi said that the power to question was the basis of all human progress.

Digital media pushes educators and students alike to shift to new ways of thinking about teaching and learning: a) from linear to hypermedia learning, b) from instruction to construction and discovery, c) from teacher-centered to learner-centered education, c) from absorbing material to learning how to navigate and how to learn, d) from school to lifelong learning, e) from one-size-fits-all to customized learning, f) from learning as torture to learning as fun, and g) from teacher as a transmitter to teacher as a facilitator [19].

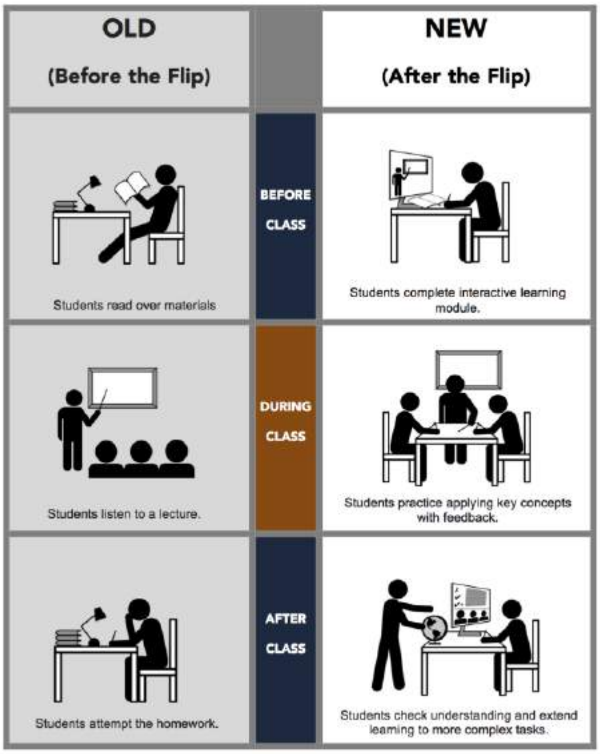


Figure 1. Comparison between old and new system

According to the Horizon report initiated by the New Media Consortium [20], the flipped classroom is one of important development technologies in 2014. The flipped classroom is the opposite of the traditional classroom; learners attend lectures outside the classroom, through video materials, and develop interactive group discussion in the classroom [21]. The flipped classroom is focused on interactive discussion and communication, establishing strong social interaction among students and solving problems in a team, with less guidance from the teacher; all of these are characteristics of collaborative learning [22].

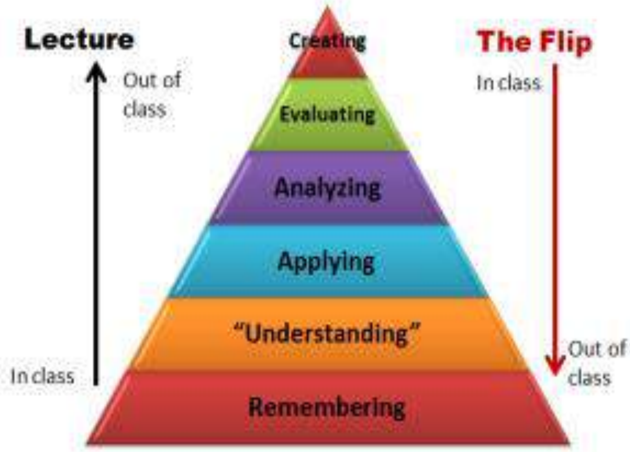


Figure 2. From Remembering to Creating

The flipped classroom will save time the teacher needs to spend delivering lectures in the classroom, while students can use classroom time for discussion activities, spending less or no time listening to lectures talk [23]. Instructional video lectures in the flipped classroom can be developed by teachers or adopted from free websites such as from YouTube, Facebook, Twitter, Wikis, YouTube, Mobile Learning, Blogs, Skype and Podcast TED Talk, which teachers can share with students, so that they can watch content in any convenient place other than the classroom, step by step, pausing and repeating the video according to their needs [24].

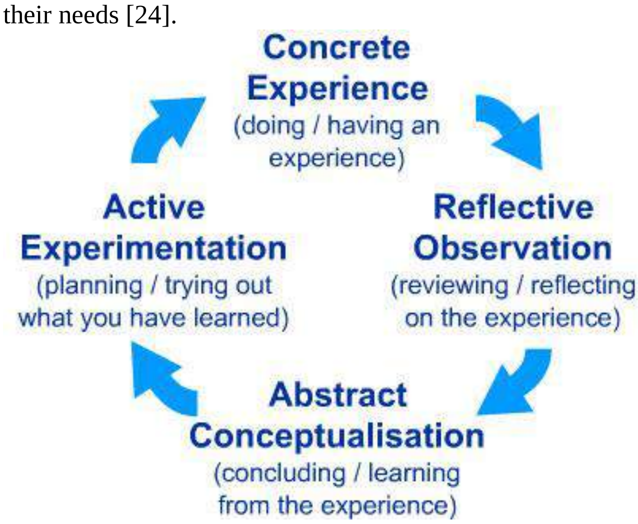


Figure 3. Kolb experiential learning cycle [25]

In the flipped classroom, the instructor's challenge is to design learning experiences that engage students in higher level thinking and problem solving during the class time; it's about creating, evaluating, synthesizing, and analyzing together [26]. The application of flipped classroom can enhance collaborative learning where the learners learn and construct their own knowledge through group interaction and they have limited guidance from the teacher in learning activities [27].

From both the conceptual and practical perspective, the "Flipped Classroom" reflects this complementary approach in education. While there are variations to the Flipped Classroom, the common approach involves making E-Learning lectures and other E-Learning material available to students anywhere and anytime. In this manner, teachers are able to modify their didactic role utilizing the face-to-face classroom to further explain concepts, demonstrate techniques, focus on problem-solving, and confront erroneous conceptualizations.

5. INNOVATIVE APPROACH IN LEARNING SUCH AS FLIP CLASSROOM – CASE STUDY SERBIA

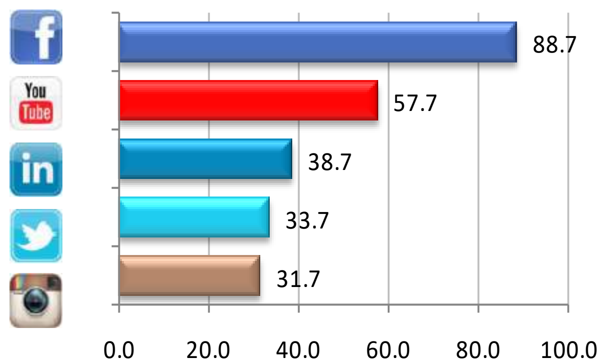
A research was conducted in April 2016 on a Serbian representative sample of 300 respondents. The bibliographic-speculative method was used in the stage of definition of the theoretical framework, while the statistical method was used to process and interpret the results obtained. Within the research, http://masmimetar.com/ non-standardized technique– MASMI Metar Online Panel, was used, while a questionnaire was used as a surveying instrument. The collected data was processed using the applicative SPSS system, with implementation of descriptive and comparative statistics.

The subject of the conducted research was determination of positions of members of the millennium generation on their expectations from studies and the level of application of innovative approaches during lectures. The scientific goal of the research was to obtain data on positions and subjective experiences of respondents on application of innovative approaches in the course of lectures and changes in expectations before and after entering the desired course. This paper will provide data which may be a base for future research which will be implemented for the purpose of promotion of the teaching process in university institutions, adapted to younger members of the millennium and zed generation. The practical aim of the research is reflected in development of a model of innovative approach to lectures in university institutions, adapted to members of the millennium and zed generations.

Based on an overview of literature, the following research questions were asked:
RQ01 – In which manner do members of different age groups in Serbia perceive the teaching process and lectures at faculties and institutions of high education?
RQ02 – Do members of different age groups in Serbia expect a greater level of interaction at lectures?

According to the research results, respondents aged 25 - 35 have the greatest level of education, with more than 61% of respondents with high education, followed by respondents aged 36-47 with more than 37% of those with high education, while the number of respondents with high education in the group 18-24 amounts to about 30%, which is an expected result, as some of them still attend their studies. All respondents use the internet. More than 58% of all respondents have used the internet for more than 9 years. Younger respondents use chat – instant on-line messages (more than 80%) and text messages (about 58%) more than older ones. All respondents mostly exchange emails (more than 90%) and read on-line news (more than 89%). Graph 1 presents the level of usage of social networks by respondents from different age categories.

Graph 1. Usage of social networks



Usage of social media occurs most frequently in younger respondents. Younger respondents use various forms of social networks more intensely. LinkedIn is the only social network where older respondents are more active. When regarding answers to the question in which manner respondents receive news, it is interesting to mention that more than 77% of younger respondents most frequently receive news through the internet, while this percentage is lower in older respondents. News is most rarely received through radio. Reading of print publications is reduced, while reading of on-line publications occurs in all age categories.

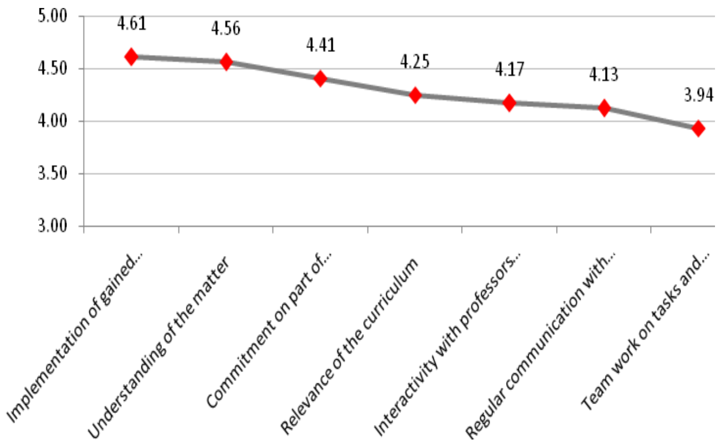
It is also interesting to mention that more than 90% of respondents aged 18-24 keep their mobile phones close to their bed while sleeping. On the other hand, the percentage of older respondents who keep their mobile phone close to their bed decreases. Except for their health and families, which are the most important things in life for all respondents, in younger respondents they are followed by career which brings prosperity, development, and training, as well as business/private life balance. On the other hand, older respondents prefer free time as well as business/private life balance.

When answering to the question "which priority was ranked the highest when you were entering university studies", the most frequent answer was: the job I'd like to do (62.3%) and finding a job immediately after completing studies (14%). A more significant difference in responses occurs in the question relating to the modern curriculum which was largely one of the most important factors in respondents aged 18-24. The answer was expected and it confirms findings of the study conducted in 2012 among the students of fourth grades of secondary schools. Within the research, it was concluded that the correlation between the factors curriculum and modern manner of studying was the strongest: the more important the respondents found the curriculum, the more important they found the modern manner of studying it [28]. From the current perspective, the priorities have not changed, except that finding a job fast became the most important priority in a larger number of respondents (43.3%).

Graph 2 shows answers to the question of how important the respondents found certain characteristics of their studies. Younger respondents found implementation of gained knowledge on practical examples and dedication on part of lecturers extremely important, while implementation of gained knowledge on practical examples and understanding of the matter were most important in older respondents. The statements were ranged on a 1-5 scale:

- Implementation of gained knowledge on practical examples
- Understanding of the matter
- Commitment on part of professors
- Relevance of the curriculum
- Interactivity with professors and other students
- Regular communication with professors through feedback
- Team work on tasks and projects

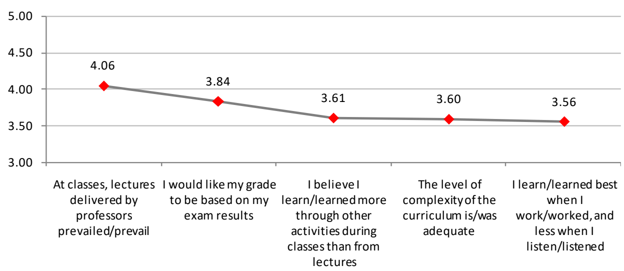
Graph 2. Importance of characteristic of studies – arithmetic mean



Graph 3 shows answers to research question RQ01 – In which manner do members of different age groups perceive the teaching process and lectures at faculties and institutions of high education. The statements were ranked on a 1-5 scale:

- At classes, lectures delivered by professors prevailed/prevail
- I believe I learn/learned more through other activities during classes than from lectures
- I learn/learned best when I work/worked, and less when I listen/listened
- I would like my grade to be based on my exam results
- The level of complexity of the curriculum is/was adequate

Graph 3. Level of agreement with statements – arithmetic mean



To query Millennial students' attitudes and experiences with the flipped classroom and active learning strategies an American survey was administered to accounting majors at an AACSB accredited metropolitan university located in the Northeast [29]. The study was done in 2014 with 125 participants. We compared their results and results from the Serbian study (in the brackets). The participants appear to value active learning, with 71% agreeing or strongly agreeing that they enjoy doing different things in class rather than listening to lectures. (59% in the Serbian study). A lecture-based paradigm appears to be very prevalent among survey participants, with 91% (76% in the Serbian study) reporting that their classes are mostly made up of lectures. Students also responded quite negatively to the proposition that their course grade should be comprised primarily of exam assessments. Approximately 68% (11% in the Serbian study) of participants either strongly disagree or disagree that grading should be comprised primarily of exams. This result is consistent with the participants desire to have additional components, such as group papers, individual assignments, and other projects comprise the grading structure.

When responding to the question: on 1-5 scale, assess the level to which your lectures are/were interactive, most respondents opted for a neutral answer (neither interactive, nor non-interactive); when asked to rank their satisfaction with the level of interactivity of their lectures on the 1-5 scale, more than 47% of respondents aged 18-24 is satisfied with interactivity of their studies. Older respondents mostly opted for the neutral answer (neither satisfied nor dissatisfied). This may provide the answer to the research question RQ02 – do members of different age groups expect a greater level of interactivity at classes? According to the obtained answers, it may be concluded that respondents may not assess whether lectures are interactive or not. This is why it is necessary to work on education and explicit implementation of interactivity at lectures. Except for formal education, more than 70% of respondents attended certain courses or workshops for additional education (foreign language courses, programming language courses, and others). The percentage of respondents who attended courses does not vary significantly among age groups, which corroborates with the act that young people are also willing to accept informal education while in the period of formal education. Thus, 65% of respondents aged 18-24 have completed some training course; in respondents aged 25-35 this percentage amounts to 70.7%. The respondents were to choose 5 out of the 10 offered attributes which they deemed most important when deliberating jobs immediately after graduation. Most respondents aged 18-24 (86%) stated the possibility of promotion as one of the most important aspects when making a decision on employment, followed by people they work with (75%), job security (73.7%), business/private life balance (68.4%), and the possibility of further training (64.9%). Respondents aged 25-35 gave the following answers: 74.8% stated job security as one of the most important attributives deliberated when making the decision on employment; 74% stated the possibility for promotion, 72.4% stated the possibility for further training, 63.4% stated people they work with, while 61.8% stated the balance between business and private life and initial salary.

6. CONCLUSION

According to the results of the conducted research, it may be observed that the percentage of usage of the internet and social networks is larger in younger millennials (respondents aged 18 - 24). They are also more likely to get their information via the internet and on-line publications. Having in mind that they are, as a generation, open for new technologies, this provides space for implementation of various forms of interactive materials through use of digital channels.

Analyzing characteristics of their studies which the respondents stated as the most important, it may be concluded that implementation of gained knowledge on examples from practice and commitment on part of lecturers are the most important for young millennials. Research suggests that millennial students have a preference for interactive and experiential-learning approaches. The younger generation is also active in the area of informal education, attending various courses. These answers also led to the conclusion that introduction of a greater level of interactivity and implementation of the Flipped Classroom model could largely assist millennials to learn in an interesting manner and be involved in the learning process all the time. Except for the learning process itself, implementation of the interactive approach and Flipped Classroom model would also help develop critical thinking. Active learning refers to any instructional method that engages students in meaningful learning activities that require students to think about what they are doing and generally involves activities that are introduced in the classroom [30]. The results of the research indicate that millennials largely use chat, instant messages, and e-mail for communication. The internet gives them more freedom to express themselves and exchange ideas. Thus, implementation of such communication channels in the teaching process would not be unfamiliar to millennials; interactive lectures would also provide them with authentic experiences in the learning process. When it comes to interactivity of lectures in Serbia, based on the collected responses it may be concluded that most respondents are not familiar with the notion of an interactive lecture (a large number of respondents gave a neutral answer to this question). Thus, a following research could analyze results of experimental introduction of interactive lectures by researching student positions and experiences, as well as real results (grades and exam pass rates) upon ending the semester.

Judging by all this, it would be necessary to adapt lectures to needs of students belonging to the millennial generation. The process of adaptation need not necessarily imply that the traditional lecturing model needs to be fully rejected; it only needs to be promoted into interactive lecturing, while the learning process itself needs to be promoted into learning which largely involves students in various activities and discussions. The study in Serbia confirms that millennials as a digital native generation requires and expects a different approach to learning that they are witnesses now.

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ASSESSMENT OF CRITICAL FACTORS IN STRATEGIC DECISION-MAKING

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Abstract: *Strategy is a management activity of an organisation related to the selection of directions and methods for achieving organisational objectives, the plan which integrates main organisational goals and the way to achieve these goals. The most frequently used tool in strategic decision-making is SWOT analysis (Strengths, Weaknesses, Opportunities, Threats), an analytical method which defines critical factors that have the highest impact on the area which represents the object of analysis. SWOT analysis factors (potential strategies) are used for selection of the appropriate strategy for the organisation.*

The paper presents methods of quantification and determination of the weight (significance) of SWOT factors and SWOT groups for more efficient generating of the strategy in a certain area by using the AHP (Analytic Hierarchical Process) method as well as applying the Voting method, which belongs to the so-called Social Choice Theory.

Keywords: *SWOT Analysis, AHP Method, Strategic Management, Voting Method*

1. INTRODUCTION

The paper presents aspects of classic SWOT analysis, restrictions and problems of the assessment of the relative significance of SWOT factors that are used for the selection of the appropriate strategy. The purpose of the paper is to assess critical factors in strategic planning and use them to develop effective strategies, using AHP method and voting method.

In the paper the concept of the AHP method is presented, which is one of the most known and most commonly used methods for problem solving in Multi Criteria Decision Making (MCDM), as well as the concept of the voting method.

Voting method is widely used in different types of social decision-making processes in order to generate or summarize individual scores into one collective choice.

The paper presents the application of the SWOT - AHP method and the so-called VotSWOT concept in the development of strategic planning.

The paper consists of the following units: 1. Introduction, 2. Strategic Management and SWOT Analysis, 3. The Basics of the Concept of the AHP (Analytic Hierarchical Process) Method, 4. Assessment of Critical Factors in SWOT Analysis using AHP Method and Voting Method, 5. Conclusion, and Literature.

2. STRATEGIC MANAGEMENT AND SWOT ANALYSIS

SWOT analysis appeared in the paper [5]. SWOT analysis is the key concept that is used to define strategic decisions. SWOT is the acronym of the English words: Strengths, Weaknesses, Opportunities, and Threats. Researchers use SWOT analysis method in different areas. SWOT analysis is a popular tool because of its simplicity and practical convenience for strategy development [4].

SWOT analysis is usually implemented using the framework of the so-called SWOT matrix, which consists of four fields, as shown in Image 1.

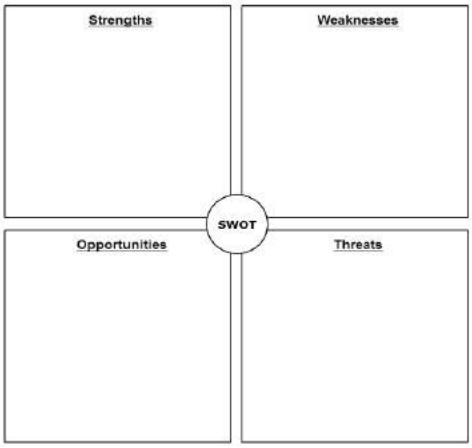

Image 1: SWOT analysis - SWOT matrix

The application of the SWOT analysis also has certain weaknesses [15]. Some researchers claim classic SWOT analysis to be too simple and therefore not useful for decision makers [1]. The paper [8] indicates technical limitations of the SWOT analysis due to its imprecision and lack of analytical approach in assessing the relative significance of SWOT factors and evaluating alternative courses of action in relation to them. However, many authors [7], [11], [4] support the simplicity of this method.

3. THE BASICS OF THE CONCEPT OF THE AHP (ANALYTIC HIERARCHICAL PROCESS) METHOD

Analytic Hierarchical Process (AHP) Method [18], [16] is one of the most known Multi Criteria Decision Making (MCDM) methods and is primarily used for solving complex decision making and management problems. Multi criteria decision making is actually a decision making based on multiple, often conflicting, criteria.

The popularity of the AHP method stems from the fact that it is very similar to the way in which an individual solves complex problems - by decomposing them into simpler components: goal, criteria and alternatives. AHP method uses hierarchical structure to show the problem and then develops priorities for alternatives based on user decisions [17].

The basic steps in the AHP method implementation in solving problems of evaluation and ranking of alternative outcomes are:

- *Problem decomposition (structuring)* - development of the hierarchy of interrelated decision-making elements, which describe the problem, with the goal at the top, criteria and sub-criteria at lower levels, as well as model alternatives at the bottom (Image 2).

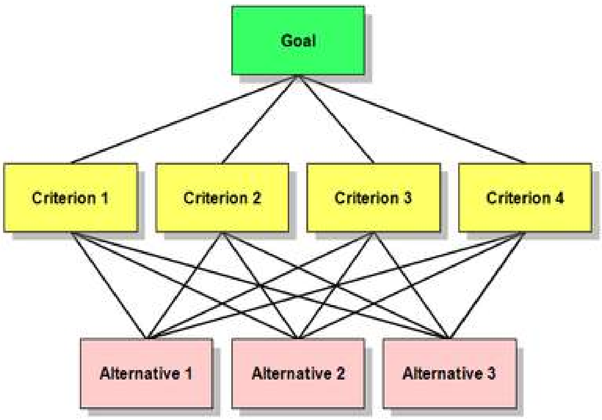

Image 2: Problem decomposition

- *Setting priorities* - pairwise comparison of decision-making elements, using Saati's Scale (comparison scale 1-9) to get input data. Appropriate matrices of relative priorities are formed by comparing in pairs which correspond to each hierarchy level. Alternatives are compared with each other in pairs on each of the criteria.

- *Calculation of relative weights of decision-making elements* - Based on the assessment of the relative significance of the elements of the corresponding level of problem's hierarchical structure, local criteria and sub-criteria weights are calculated. In the last stage decision alternatives are ranked - determining problem solutions.

- *Consistency check - Consistency Ratio (CR)* is calculated *(CR ≤ 0)* and *Sensitivity Analysis* is conducted, which shows the relations of the change of alternative priorities as a function of criteria significance.

There is numerous software which supports the AHP method, the most famous being the program Expert Choice. In this paper the program PriEst - Priority Estimation Tool was used [14].

4. ASSESSMENT OF CRITICAL FACTORS IN SWOT ANALYSIS USING AHP METHOD AND VOTING METHOD

SWOT analysis is a widely used tool for strategic decision-making support. The integration of AHP and SWOT methods, the so-called A'WOT method, was researched by a large number of authors [8], [9], [12].

The paper presents the application of the AHP - SWOT Method in the development of strategic planning in the case of India's medical tourism sector [12]. By combining SWOT analysis and AHP method strategic decision-making process can be improved, as shown in the example [12].

Image 3, without discussion, shows the SWOT analysis of medical tourism in India, which is presented in the paper [12].

A2 f_x Strengths

	A	B	C
1	**SWOT Analysis of Indian Medical Tourism**		
2	**Strengths**		**Weaknesses**
3	S1- Availability of exclusive wings		W1- Online preoperative counseling facility not frequently available
4	S2- Alternative treatment like yoga & ayurveda		W2- No agreement with insurance companies
5	S3- Strong pharmacy sector		W3- Complicated disengagement of procedures & bill settlement
6	S4- Availability of highly skilled & expert doctors		W4- No Medico legal security for medical tourists
7	S5- Best technology & quality available in India		W5- Air & water pollution in India
8	S6- Infrastructure of Indian hospitals		W6- Tedious police verification clause for medical tourists
9	S7- Lesser cost of medical procedures		W7- Level of patient service not at par
10	S8- Privatization of healthcare sector		
11	S9 - Special dietary services for international patient		
12	**Opportunities**		**Threats**
13	O1- Treatment comparable to developed countries		T1- Online diagnostic facility
14	O2- Availability of international cuisines		T2- Clinical excellence
15	O3- Good coordination between wards & departments		T3- Inadequate transport facility
16	O5- Political stability		T4- Connectivity from other countries no good
17	O6- Economic recession		T5- Medical visa costly
18	O7- National health policy		T6- Cost of medical visa is inhibitive
19	O8- Interpreter facility		T7- Corruption in grant of visa
20			T8- Extension of visa takes time
21			T9- Two months cooling period is required for extension of medical visa
22			T10- Unavailability of specialized procedures
23			T11- Ethnic issues linked with MT

Image 3: SWOT Analysis of India's Medical Tourism

Hierarchical presentation of the SWOT structure is shown in Image 4.

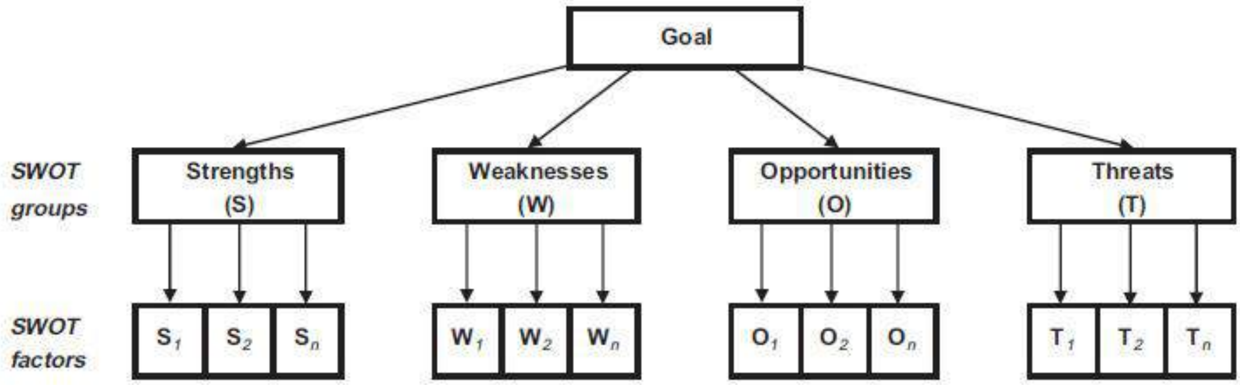

Image 4: Hierarchical structure of the SWOT matrix

Hierarchical structure, priorities setting of SWOT factors and consistency check are shown in Image 5.

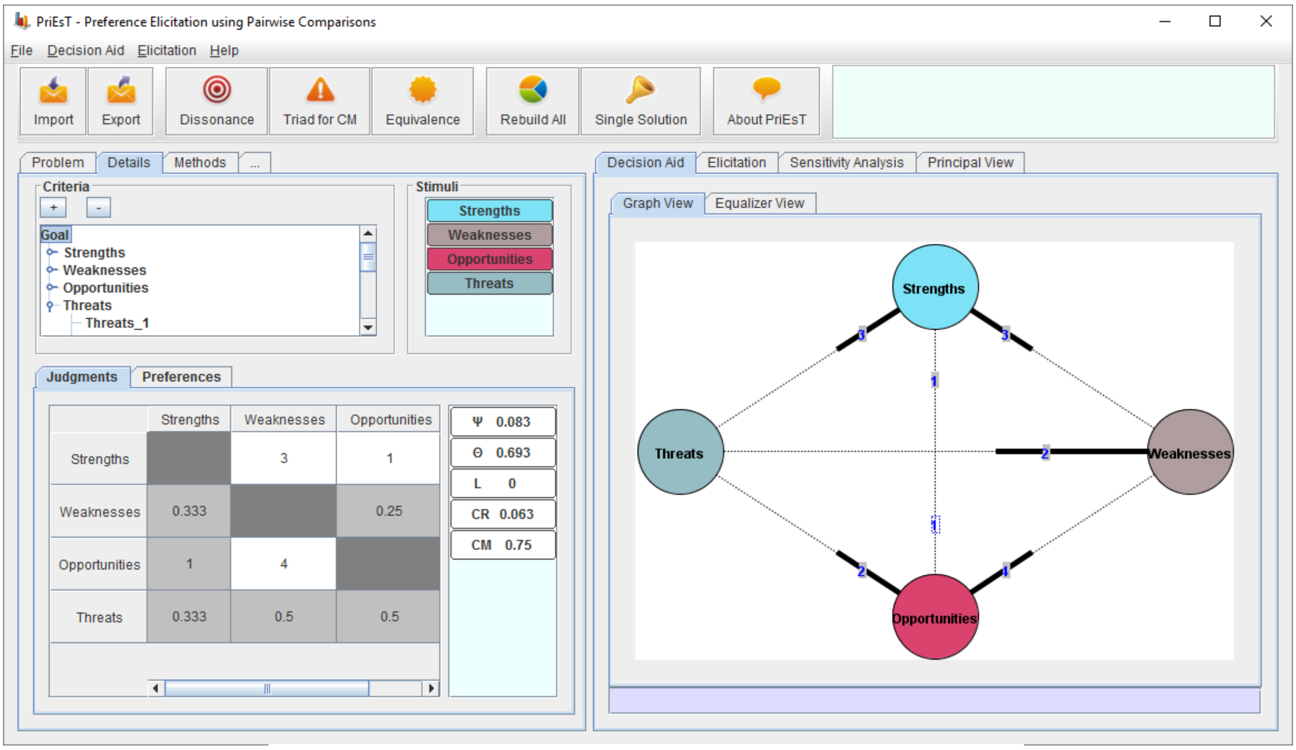

Image 5: Hierarchical structure and priorities setting of SWOT factors

SWOT factors priorities are shown in Image 6.
Based on this analysis, priority ranking of each SWOT group is the following (Image 6):

- Strengths (relative weight 37,73%),
- Opportunities (relative weight 36,69%),
- Weaknesses (relative weight 13,91%),
- Threats (relative weight 11,7%).

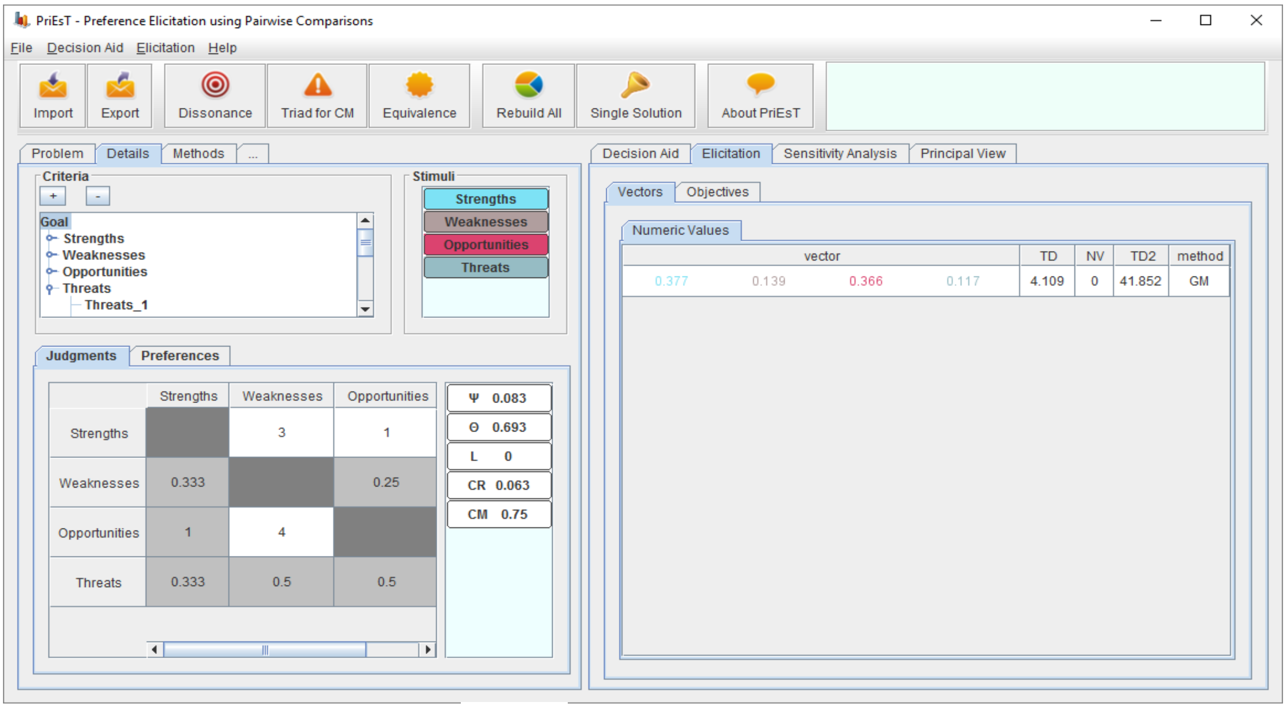

Image 6: SWOT factors priorities

Image 7 shows a pairwise comparison matrix of the alternatives for the SWOT factor Strengths and consistency check. A useful options of the program PriEsT is the consistency level analysis of our estimates/judgments. The inconsistency level of our estimates becomes visible by activating the option "Dissonance" in the toolbar.

The following tables of pairwise comparison matrices of the alternatives for SWOT factors shown in the paper [12] are not well filled: Table 5. Pairwise comparison matrix for Strengths, Table 6. Pairwise comparison matrix for Weaknesses, Table 7. Pairwise comparison matrix for Opportunities, and Table 8. Pairwise comparison matrix for Threats).

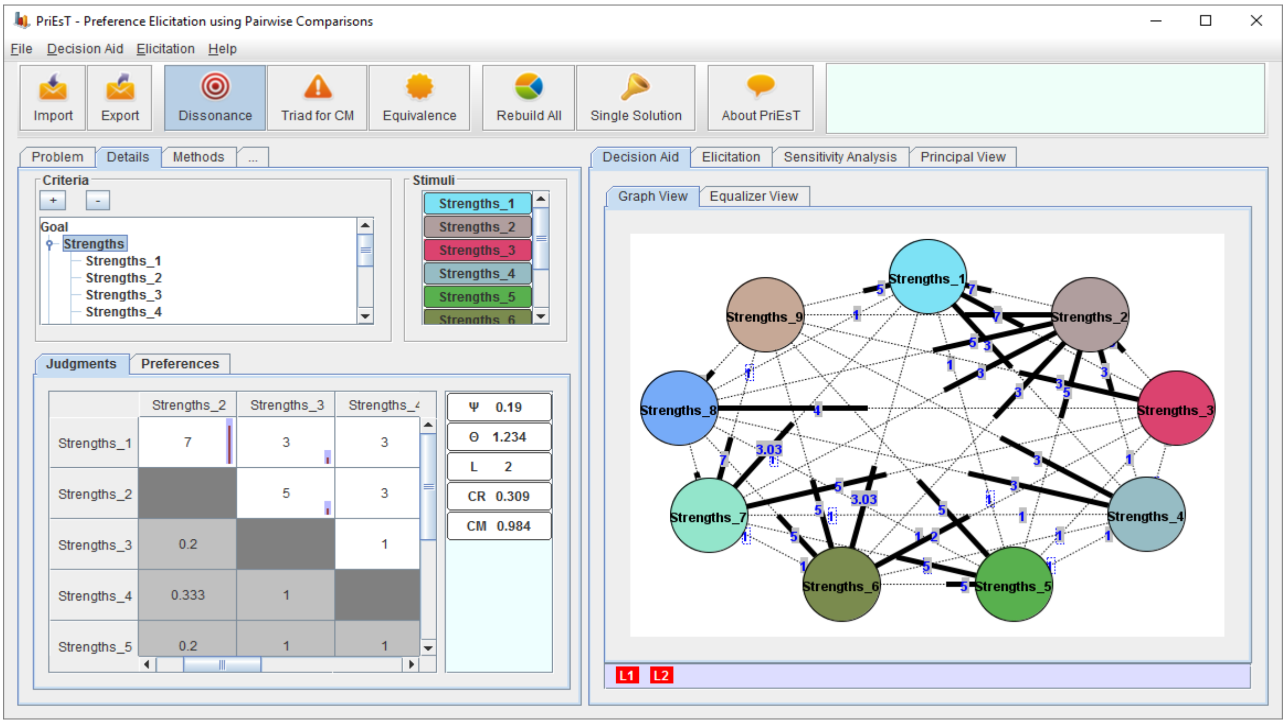

Image 7: Pairwise comparison matrix of the alternatives for the SWOT factor Strengths and consistency check

Overall priority scores for SWOT factors are shown in Image 8. The most significant factors to consider from the SWOT group Strengths are yoga and ayurveda - lifestyle (8,84%) and cost of medical procedures (5,49%).

SWOT Analysis of Indian Medical Tourism									
Strengths	**Group Priority**	**Factor Priority within group**	**Overall Priority**	**Rank**	**Weaknesses**	**Group Priority**	**Factor Priority within group**	**Overall Priority**	**Rank**
S1- Availability of exclusive wings	0.3773	0.1409	0.0532	3	W1- Online preoperative counseling facility not frequently available	0.1391	0.367	0.0510	1
S2- Alternative treatment like yoga & ayurveda		0.2342	0.0884	1	W2- No agreement with insurance companies		0.077	0.0107	5
S3- Strong pharmacy sector		0.0597	0.0225	8	W3- Complicated disengagement of procedures & bill settlement		0.149	0.0207	4
S4- Availability of highly skilled & expert doctors		0.0649	0.0245	7	W4- No Medico legal security for medical tourists		0.035	0.0049	6
S5- Best technology & quality available in India		0.1352	0.0510	4	W5- Air & water pollution in India		0.16	0.0223	3
S6- Infrastructure of Indian hospitals		0.1228	0.0463	5	W6- Tedious police verification clause for medical tourists		0.03	0.0042	7
S7- Lesser cost of medical procedures		0.1457	0.0550	2	W7- Level of patient service not at par		0.178	0.0248	2
S8- Privatization of healthcare sector		0.0676	0.0255	6					
S9 - Special dietary services for international patient		0.0295	0.0111	9					
Opportunities					**Threats**				
O1- Treatment comparable to developed countries	0.3664	0.3993	0.1463	1	T1- Online diagnostic facility	0.117	0.064	0.0075	6
O2- Availability of international cuisines		0.16803	0.0616	3	T2- Clinical excellence		0.28	0.0328	1
O3- Good coordination between wards & departments		0.18229	0.0668	7	T3- Inadequate transport facility		0.068	0.0080	5
O5- Political stability		0.04004	0.0147	6	T4- Connectivity from other countries no good		0.203	0.0238	2
O6- Economic recession		0.12585	0.0461	4	T5- Medical visa costly		0.049	0.0057	8
O7- National health policy		0.2422	0.0887	2	T6- Cost of medical visa is inhibitive		0.09	0.0105	4
O8- Interpreter facility		0.06015	0.0220	5	T7- Corruption in grant of visa		0.022	0.0026	10
					T8- Extension of visa takes time		0.016	0.0019	11
					T9- Two months cooling period is required for extension of medical visa		0.06	0.0070	7
					T10- Unavailability of specialized procedures		0.038	0.0044	9
					T11- Ethnic issues linked with MT		0.11	0.0129	3

Image 8: Overall priority scores for SWOT factors

The analyzed example shows the application of the Social Choice Theory in SWOT method, the so-called Voting-SWOT - VotSWOT approach to support strategic decision-making as it supports the communication method between decision-makers and interested parties (stakeholders).

Social choice problems usually use different voting methods. That is why the Social Choice Theory can be called the Voting Theory. Throughout the history of democracy, voting has shown that it can be an effective tool for making choices between decision-making alternatives. In voting theory special attention is paid to systems which are neutral and hard to manipulate [6].

A cumulative voting system is applied, where each voter has a number of votes that can be distributed to candidates in any way: all votes may, for example, go to one person or more candidates can get equal number of votes [3], [2]. Voting can be used to choose SWOT factors from the list of possible factors. In this paper SWOT factors from the analyzed example are used. Now cumulative voting system is used to determine relative significance of alternatives in each SWOT group. Each participant - expert has 100 votes to allocate to factors in each SWOT group. For example, within the group Strengths expert 1 can give 15 votes to S1, S5 and S6, 20 votes to S2, 10 votes to S3, S4 and S7, and 5 votes to S8 (Image 9).

N2 fx =M2/L7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Cumulative voting for the SWOT factors by 3 participants/experts		Expert 1	Expert 2	Expert 3	Sum of votes			SWOT faktori	Expert 1	Expert 2	Expert 3	Sum of votes	Priority
2	S1- Availability of exclusive wings		15	10	20	45	0.15		S	25	30	40	95	0.3167
3	S2- Alternative treatment like yoga & ayurveda		20	20	25	65	0.21667		W	15	15	10	40	0.1333
4	S3- Strong pharmacy sector		10	10	15	35	0.11667		O	40	35	35	110	0.3667
5	S4- Availability of highly skilled & expert doctors		10	10	10	30	0.1		T	20	20	15	55	0.1833
6	S5- Best technology & quality available in India		15	10	10	35	0.11667		Sum	100	100	100	300	1
7	S6- Infrastructure of Indian hospitals		15	10	10	35	0.11667		All the participants get 100 votes		Sum	300		
8	S7- Lesser cost of medical procedures		10	10	10	30	0.1							
9	S8- Privatization of healthcare sector		5	15	0	20	0.06667							
10	S9 - Special dietary services for international patient		0	5	0	5	0.01667							

Image 9: Cumulative voting for SWOT factors by 3 participants - experts

5. CONCLUSION

SWOT analysis enables strategic planning in terms of identifying growth and development strategies, but it does not provide the answer to the question which strategy is more important. On the other hand, Analytic Hierarchical Process (AHP) Method allows a consistent evaluation and comparison. The aim is to improve the quantitative aspect of the strategic decision-making process with the application of integrated SWOT analysis and AHP method. The analyzed example in this paper shows the application of the Social Choice Theory in SWOT analysis, a hybrid method, the so-called Voting-SWOT - VotSWOT to support strategic decision-making.

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CORRUPTION AND ITS IMPACT ON DEVELOPMENT AND INTEGRATION OF THE WESTERN BALKAN

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Abstract: *Corruption is a concept to which it is difficult to determine the real content, because its meaning changes in different time, social and political relations. Corruption, in the etymological sense, comes from the Latin word "RUMPER" which, translated, means "breaking, perversion, tearing," and indicates that something is broken. In this interruption, breaking or deception involved at least two people (actor) - CUP RUMPERE. It is common to demolition, bribery or fraud have between one who corrupts, and the one who receives the bribe. This means that corruption is an agreement between two people. The full meaning of the concept of etymology indicates corruption and seeks to answer the following questions:*

.. what throws and breaks in the agreement?
.. what is broken and what breaks?
.. whether it is a connection or to the people or the State itself?
.. What are the causes and consequences of this phenomenon?

Corruption is not death, it is moving towards death. Corruption is a violation of the legal norms, and is, therefore, as a criminal offense. Corruption is also a violation of moral norms, which implies that society has lost its virtue. Corruption is a pathological phenomenon, in which individuals or the ruling political elite put their personal interests above the interests of the state. From this standpoint, corruption can be condemned as immoral and harmful to the political constitution of the state, it slows economic growth, destroys the system of values, undermine the reputation of the company. One of the main sources of corruption is a disorder of demand and supply of certain goods and services when the state assumes the role to allocate scarce resources. Higher or lower index of corruption and its impact on development, manifested in the case of the Western Balkans

Keywords: *corruption, bribery, organized crime, money laundering*

1. INTRODUCTION

In the literature we find that earning for living through corruption is old profession, as the political and economic organization of society. The early society, corruption occurs in the form of special services to members of one stock makes leaders, and in return provide services of the second type, or a better position in a certain hierarchy, which brings a benefit. Through the centuries, corruption changes shape and adapts to changes in political and economic power. In the earliest form of the state was normal to buy public office, elected officials based on the origin or party affiliation, and citizens were objects of government. What system was dominant in the Imperial Russia and other countries. More recently, at the beginning of the 19th century, corruption is considered a normal occurrence, and then the public started to condemn, so that eventually there was condemnation of political corruption growing, full Derenčinović writes in his book The Myth of corruption, Zagreb, 2001a. Bribery and abuse of public office, are considered harmful and are prohibited. Thus, the system of professional Management

Board was freed from political interference and based on skills, expertise and impartiality of civil servants and public service operate according to established rules, and under the control of a certain salary, without personal gain.

Thus, in recent history, creating a incorruptible public administration and leaves the system of favoritism, first in England and then in the United States and France. In studying the concept of corruption, it can be seen that the meaning of corruption changed, at different times, depending on the social and political order. The etymological meaning of corruption comes from the Latin word "rumpere," which, translated, means breaking, tearing, depravity, and it still means that something is broken. That relationship involves at least two people. We are talking about an agreement between one who corrupts, and one who is bribed.

Here you can set up a logical question: What is perverse and what breaks in this process, what is broken, whether it's relationships or the people or the state? Etymology of the term corruption is unsatisfactory in terms of scientific definition, because it does not reveal what the specific differences of corruption in relation to other manifestations of corruption, depravity and dishonesty, so theoretical, or sociological thought, provides a wide range of social conflicts, and that is not the subject of this work.

However, without going into the clarification of social conflict, struggle within social groups for achieving the interests and values which are mutually contradictory, this paper will express the concept of corruption and its impact on development and integration of the Western Balkans. Thus, the social conflict in society will be discussed, but the emphasis is put on the causes and consequences of corruption, organized crime, as well as measures to combat corruption.

2. CORRUPTION IN THE WESTERN BALKAN

The Western Balkan countries and their similarities

The Western Balkan countries are: Serbia (two AP Vojvodina and Kosovo), Bosnia and Herzegovina (the Federation and the Serbian Republic entity), Montenegro, Macedonia and Albania. This group of countries, as neighbors, is historically interconnected. Until yesterday they were in the same state, with the exception of Albania, destiny defined desire for coexistence and integration of the regional structure of the European Union. All these countries have their own specifics and differences in political, economic, social, cultural and educational level. However, the common denominator is corruption, its manifestations, consequences or with varying degrees of success in the fight against corruption. That's the basic idea of the present study, to capitalize answer to the question why kroupcija problem in the future development and integration of these countries and how it heals ??? In response to this question this city has the following composition.

Corruption - causes and consequences

a. The concept of corruption and its underlying causes

Starting from the result of the harmful effects of corruption can be seen as: violation of legal norms and violation of moral norms.

From a legal point of view, corruption is defined as a violation of imperative rules of law and norms of criminal law, which criminalises corruption to the clause of subsidiarity. The criminal law deals with corruption when other mechanisms of social regulation does not provide adequate results, thus protecting the highest values of the state and society from corruption.[1]

The definition of corruption as a violation of moral norms, means that society has lost the assumed values and virtues, so corruption is pathological phenomenon in which individuals or the ruling political kalsa, put his personal interests above the interests of the political community. Therefore, corruption is condemned as immoral and harmful phenomenon for the whole society.[2]

Since moral categories are not always clear, that there is a lack of legal definition of corruption. So in modern and democratic society increasingly emphasizes systemic dysfunction of corruption, it is not only a morally harmful, but also the cause of stopping the growth of the economy and the State forces.

Corruption, according to a widely accepted definition of "abuse of office for personal gain," ... in this regard, mention may be made the main sources of corruption, especially in the countries of the Western Balkan: The limited supply of resources, poor state of the public sector, avoiding obligations to the state and organized crime. The first and main source of corruption in these countries (WB) is a disorder when it comes to supply and demand for certain goods or services. For example, in fuel and the like. products, where the state sets a price which is much lower than the price that the market is formed, and the difference between the market price of many rich. In most countries, not only in the WB, in recent decades certain circles where they made a huge fortune on the differences in prices. Similarly, the demand for loans, import licenses, the lack of foreign exchange funds on exchange rate differences, there is an unjustified profits.

As another source of corruption is the poor state of the public sector, when civil servants poorly paid, while obtaining certain documents, licenses, acquires corruption, then bribing inspectors for various controls of construction, financing to customs and sanitary controls.

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[1] Etehegoyen., *Podmićivač i podmićeni,* Split, 1997.

[2] Aristotel: Corruption is spoilage of political system Machiavelli: The loss of morality in a causal relationship with the leading men.

Montesquieu: The cause of the decline and fall of Rome is corruption, which has contributed to the loss of the moral superiority of the Romans in the wars.

The third kind of corruption in these countries, when using bribes in order to reduce costs for the tax base or customs. To this should be added the fact that political and economic reforms in these countries (WB) increased the risk of corruption, particularly in tax and customs operations. The reason is that certain interest groups, by virtue of their influence on certain organs, creating a gap between rich and poor, and thus compromised the reform endeavors.

b. Manifestations of Corruption

The first form of corruption is the "individual corruption". This is about corruption of small, ordinary people, whose names can be found in a press headlines are far more publicity than other corruption. The main characteristic of individual corruption is the width of the risk zone which coincides with the boundaries of everyday communication.

Another form of corruption is "systemic corruption" as a result of certain systems, in order to maintain his not choosing means and methods of autonomous operation (eg during the years of war in the Balkan). The basic equation of systemic corruption as follows:

C – corruption = M – monopoly + D – discretion – R – responsibility (C = M + D – R).

When it comes to the Western Balkan countries, it would be added to this equation political interest, then this would be the following equations:

C = monopoly + discretion + political interest – responsibility.

This is confirmed by examples of Hypo Bank in Croatia, Pavlovic Bank in the Serbian Republic, the Development Bank of Serbia, Montenegrin Bank in Podgorica, etc. It is clear that corruption is greater as monopoly, discretion and a greater political interest and responsibility is less.

The third type of corruption is "indirect corruption". The essence of this corruption is that it is hard to determine the motive of corruption due to the specific features of politics in which the exchange of everyday practice. That means ... "support my proposal, and I will support your ...". Here motives are mixed. This is usually a model in election campaigns.

The fourth kind of corruption is a tender or competitive corruption, which is highly expressed in WB countries, and it is a bid-rigging in public procurement or sale of certain products through auction. In addition to the aforementioned forms of corruption, it should be noted that the area of the Western Balkan countries burdened and other forms of corruption, such as: Transactional corruption, political corruption, extortion, corruption, investment, corruption, nepotism, corruption, corruption Autogenous ...

c. Organized crime

A special and very dangerous form of corruption stems from the work of "organized crime". Here organized crime bribing the police, politicians and judges in the protection and support. Criminals usually ask their "protector" and to protect them from potential competitors that could maintain a monopoly position in any business that is the subject of corruption. So, the authorities protect criminals from legal sanctions and the competition. The main feature of organized crime that the participants in the business group of people with the goal of illegal enrichment at the expense of the community and its members.[3]

This form of organized crime and corruption flooded the countries of the Western Balkans, in the last two decades, and caused extensive damage all countries to stop the development, integration and prosperity and international reputation.

The network of organized crime in the Western Balkans, has a negative impact not only to neighboring countries but also to countries of the European Union and beyond, to South America. At issue are illegal ways of narcotics, weapons, white slavery and few specific products, such as jewelery, precious metals, etc. In addition, in the context of organized crime, it is very important the banking business, "money laundering", which supplied many investors that occur in the process of "privatization" and those who smuggle various goods, products and people, to the feeding of certain political option in some countries, the struggle for power.

In Serbia, at first, showed cases of organized crime in the network of some companies - a case of "Mišković," and the case "Šarić" case "Kosmajac". These are very serious problems, who had been doing a disservice not only Serbia but the entire region. In this business, it is estimated an enormous enrichment at the expense of the community of a small number of individuals, whose illegally acquired capital measured in hundreds of millions of euros, with the priceless damage to the social whole. Those also smaller cases in the trial, some of whom were convicted and final.

In Montenegro is a very deep and wide forms the so called. "Administrative corruption (bribery), and more recently and organized crime has its place. Prosecuted eight cases, among which is the largest case "BUDVA - MAROVIĆ" ... In Bosnia and Herzegovina and the Serbian Republic, near the famous affair "Bosna a cure," "Cigarette Factory," and "Elektroprivreda", and now it's on the horizon and a form of "political crime" case "Radoncic". "In addition to the Republic of Serbian petty forms of corruption on the horizon is the case," Pavlović bank "and" Bobar bank. "In Macedonia, the number of cases prosecuted but no definitive outcome.

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[3] Although there are a number of definitions organizvanog crime, stands out the definition of the United Nations "Organized crime has expanded and complex criminal activity carried out by a group of people, either loosely or tightly bound, with the aim of illegal enrichment at the expense of the community and its members." So here is the emphasis that has an illegal enrichment.

However, in this country there will soon be a new form of political corruption with the aim of bringing down the current government. Regarding Albania and AP Kosovo is still a great unknown that is the extent of organized crime and corruption in those parts of the Western Balkans, but it is known that there were major points, not only organized crime but also the threat of terrorism, because through these territories all roads lead illegal criminal activities, from South America, the Middle East and Africa all the way to European countries. This is because there is no adequate rule of law, but it's all so. "GREY ZONE" and this is the part of Kosovo and Metohija are new forms of corruption that delaminate Kosovo society, as reflected in the conflicts of the current authorities. This may be a hint of new conflicts.

Organised crime in the Western Balkan, made to last and the duration of its main characteristics. Various scholars in the field of social and other sciences, they tried to give a full definition of organized crime.[4]

d. International cooperation in the fight against organized crime

International cooperation in the fight against corruption and organized crime, takes place in the framework of the United Nations and the European Union. The United Nations in the year 2000, in Palermo, adopted the Convention against Transnational Organized Crime, which laid the foundation for international cooperation at the United Nations. UN Directorate for Combating Organized Crime, met in Vienna in 2010, to assess the results of the Convention taken and results achieved for the past 10 years. It is estimated that organized crime is a major threat to international security that this is a global phenomenon, so it has to stop further spread. It was stated that the main reason for the spread of this phenomenon insufficient rule of law, poverty and slow development of democracy and the struggle for the development of regional policy. This is important for the countries of the Western Balkan, where organized crime has taken a great toll. It is particularly emphasized the risk of new forms of organized crime "cybercrime" and "smuggling" of natural resources. Therefore is accepted that in the fight against organized crime within the UN, to integrate all the relevant factors in this fight, and therefore, followed the establishment of the European Police (EUROPOL was established in 2009, with a mission to strengthen cooperation among member states, the the fight against terrorism and organized crime.

e. Combating corruption - reform measures

The first task in anti-corruption reform is the elimination of the state program that encourages corruption. To the extent the regime import and export licenses, restrictions on the price below market levels, thus eliminating the possibility of corruption because these programs have served some officials to get rich. In addition, the state must react to spending money on programs that remain, such as health, culture, education. States must eliminate sources of corruption: the legalization of payments to obtain certain permits, then to streamline administration would limit the jurisdiction of the officials who contribute to corruption. It is particularly important to reform the public sector while increasing private sector.

In some state institutions, corruption is a symptom of the disease, because they delotovrne as much as can be and should be. Moral us, as a society, it together. If a member of the company to violate a moral rule, he should be punished. Therefore, members of the society have the right and duty to oppose those who wish to abuse public office for corrupt practices.

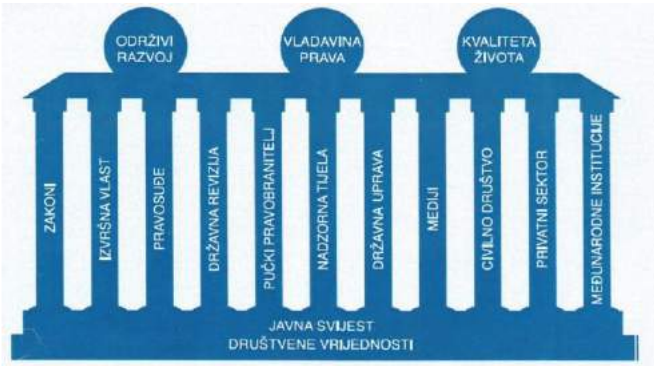

Figure 1: Public awareness of social values

In the system of each country an important social role critics, free and impartial media, who were given access to information. Public defenders, supervisory and regulatory institutions, NGOs and civil society, encourage the international community, with a strong private sector, entrepreneurship, and these are important pillars of national integrity. Public procurement must be carried out according to strict rules and with full and fair competitive match. If in a country lacking some of the above mentioned pillars 'integrity' (toward the front of the picture) the whole system can collapse, which opens a free path to corruption.

Next group of causes associated with the way that is taking place and how regulated business. In institutions where there are certain obstacles or if the state administration has a limited capacity for the imposition of obstacles, if the compliance with legal provisions expensive than their avoidance leads to corruption Anti-corruption strategy provides two solutions to this problem:

a. reduce the number of regulations and
b. simplify procedures which economic operators need to comply.

In this way, in certain cases, can completely abolish the licensing regime, but in some cases it is possible to issue licenses by statements from some state authorities, instead of collecting a pile of documents.

[4] Hauard Abadinski, expert from USA, studies the organized crime, in his "Organized Crime" ... stating that it is "ideological society that involves a number of closely related persons, with at least three levels, with the aim of getting rich ..."

Finally, the last group of causes associated exclusively with the administrative capacity, or the ability of the state to perform its functions. Therefore, permanent brigade country takes into account the capacity of their institutions as well as strengthening administrative capacity. The level of corruption will be low when the high cost of compliance with the law, if the state is strong enough to be carried out. To institutions functioned well must be adequate (a) leadership, (b) management, (c) trained personnel, and (d) adequate resources. Therefore important to know what people "see" as an adequate and that they need to provide. The main characteristics of institutions that work well are the following: (1) The ability to formulate policy, (2) ability to implement policies and (3) the ability of monitoring and evaluation of policies, (4) the ability to improve and draw lessons.[5]

f. The consequences of corruption

Corruption has serious and long-term consequences for society as a whole, individuals and institutions. Participation in criminal and immoral activities is deeply troubling. Those who are in this dirty job for years, living in fear that you will be discovered and to dramatically affect the life, because "money can not buy everything." Also, corruption seriously damages the reputation of the institution, because when corruption becomes part of the system it is difficult to remove without destroying the institution itself. In the past two decades, corruption has been an integral part of the system of the Western Balkans and method of enrichment for a small number, but for a number of means of survival. Dominated by two forms of corruption: (i) large-scale corruption, and (b) petty corruption. Grand corruption is a situation when someone gets more than 10 thousand euros, while petty corruption is when someone gets 20 to 100 euros. In addition, it was developed and high corruption or political corruption and petty or administrative corruption. Particularly dangerous was the case of the so-called. corruption "private state". Abuse of power and the exploitation of confidence comes at the highest level (high or political corruption). This type of corruption always involves abuse of the political process, and that is when politicians use their position to acquire money and power or harm opponents. Property and power are the main sources of inequality and divisions in society. Individuals and social groups differ in material wealth, reputation, roles they perform and that are valued differently.

Administrative corruption takes place at lower levels of government. In this case, citizens are faced with civil servants, and in this relationship works bribery or gifts, or trade impact "connections and acquaintances". While high or political corruption involves abuses of the rules in public procurement, benefits or illegal financing, administrative or petty corruption in the function of facilitating, and accelerating a specific procedure or to avoid punishment.

Especially dangerous kind of corruption is called. "Private state" when using the means of political corruption, such as ... the illegal financing of political parties, bribery, trading in influence - the power of authority. So, some individuals with certain economic interests, can not, to that extent, do state institutions "Private", that they cease to serve the public interest and start to work in favor of those who do not "their". Corruption is, as a rule, it is difficult to measure. This is a very complex process. The most famous tool for measuring corruption is the "perception index (CPI), *Transparency International*. It is a combined index that assigns each country a certain value in relation to the perception of the level of the Earth receive the index values from 0 through 10.

g. Models of suppressing corruption

Since there are two types of corruption that should be approached differently, then it assumes different models for combating corruption. Small, or "administrative" corruption can be caused by culture, as giving small gifts, in the form of a sum of money, it may be socially acceptable forms of expressing gratitude. Against this corruption can be combated prevention and education, as well as through audits of state institutions.

However, against the herd, or "political" corruption can be combated more transparency, greater accountability and criminal way. An effective way is to identify and narrow "throat", where we need to strengthen internal control, as well as through inspections. Also in this case has the role of education. In general, in the public administration against corruption used three classical methods, which are always applied and combined, and that includes (a) prevention, (b) education and (c) criminal legal procedure.

h. Preventing corruption

Preventing corruption means an activity that is aimed at eliminating the causes of corruption. It's anti-corruption method that relies on surveys of citizens' satisfaction and the quality of public services. This means that officials in the state administration must be aware of their codes of conduct and that its non-compliance will not pass without punishment. Another way to prevent corruption is realized by reducing the administrative regulation and control over economic activity. To be effective as a method of transparency in the fight against corruption, it is necessary to combine the activities of citizens, the media and the rule of criminal procedure. However, transparency is an effective model to combat the "personal type of corruption".[6]

[5] With the importance of education and prevention of corruption, should be respected and punitive policy, and where it is not possible punitive measures should be imposed disciplinary sanctions. For the functioning of disciplinary sanctions is necessary to have clear instructions and manuals for all procedures, then the code of ethics, an effective system of implementation (disciplinary authorities), training programs and changing the culture and rules of the policy and the protection of "whistleblowers". Comment UN Convention against Corruption, Zagreb, 2005.

[6] This form of corruption, the World Bank has labeled "create a private state." The effectiveness of this model in the fight

Positive and negative experiences in the fight against corruption in the countries of the Western Balkan

In all the countries of the Western Balkan, in greater or lesser extent, have been implemented or are in progress, judicial reform - the introduction of the new Code of Criminal Procedure, which provides a new way of investigative actions in the fight against corruption. The investigation was transferred to the prosecution. The prosecutor has become the holder of the investigation and all actions undertaken in the process itself or through authorized persons. The prosecutor has become the holder of the investigation and all actions undertaken in the process itself or through authorized persons. Therefore, the greater the responsibility of the Prosecutor.

In addition to the applicable legal regulations that have been adopted by the Earth, has ratified several international convention on the fight against corruption and organized crime, in particular, the manner of application of those Conventions, the criminalization get a stretch through criminal actions, punishing corruption.

Criminal Law Convention on Corruption indicates the individual States Parties to adopt the necessary measures for a more efficient fight against corruption. Despite the legal instruments to combat these forms of crime that we have not had, new criminal offenses: organized crime, money laundering, new legal institutions: the plea agreement, the protected witness new acts of proof, the application of "forensic accounting in financial reporting and control of such special investigative measures, application of scientific achievements in criminalistics: expert evidence, DNA computers, etc. there are still major problems in proving criminal acts, particularly with "evasion" of taxes.

As a negative side in the fight against corruption, in most countries, according to the lack of education and prosecutors and judges. This creates great problems in maintaining the judgments handed down in the initial stage. Therefore, the small effects of the fight against corruption, but still, according to the reports of some NGOs, all Western Balkan countries are classified among the countries with the highest index of corruption.

3. CONCLUSION

Finally, in conclusion, it can be concluded: corruption is a pathological phenomenon that destroys moral and value system, with profound consequences for the overall development of society. Corruption stops the progress of the economy, democracy, regarded international reputation, stops the integration and eventually leads to the collapse of some system or country. Corruption is present in all societies and countries. However, the fight against corruption is a common obligation. Those countries that have regulated the legal system and the rule of law, have more success in this struggle. So against corruption fights with rules and laws.. Therefore, on the international level are constantly being improved methods and regulations to combat all forms of crime. The Western Balkan countries have different effects in this fight. However, the common denominator for all countries WB is a high index of corruption, inefficient judiciary, slow economic growth, despite extraordinary efforts to prevent the causes of corruption and to create the conditions for the application of European standards, to speed up reforms in the economic and public sector. Since all WB countries moving towards active membership in the European Union, their success on this path is different. The author of this study believes that all the countries of the Western Balkan to be active members of the European Union reach a certain level of reform, rule of law and effectively combat corruption. That won’t be a single EU port, but it will happen in a "bundled" together.

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against corruption, including the transparency of assets of public figures, transparency and accountability in the funding of political parties, as well as clear rules to conflict of interest and lobbying.

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NEUROMARKETING AS A NEW PARADIGM FOR UNDERSTANDING CONSUMER BEHAVIOR

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Abstract: *As a field of marketing research, neuromarketing represents new type of connection between medical science, technology and marketing, which uses possibility of monitoring brain wave activity in scientific way, to explain how consumers respond to advertising and other promotional messages. Results of neuromarketing research can explain impact of unconscious thoughts, feelings and desires which rules our everyday decisions connected with consumption. As a specific theoretical concept of researching consumer behavior it have advantages but also disadvantages, which raises many ethical questions and dilemmas.*

Keywords: *neuromarketing, consumer behavior, new paradigm, researches, discoveries, ethical view*

1. INTRODUCTION

Some years before it became more and more clear that the traditional methods of marketing research – as analysing the market and the focus groups – are not enough useful to reveal what is that, which consumers really want. The cause is that our irrational mind, infested with the cultural prejudices, based on tradition, education and many other subconscious factors, has a powerful, though hidden influence on our decisions. It is hard to answer a main question: what us, as buyers, make to decide? Why we choose one, and not the other brand, product, and not the other? How the consumers truly think? The experts for marketing, for example, still work on the same methods: the quantitative research that implies the testing of the many volunteers, connected with an idea, concept, product or some sort of package – which is followed by the qualitative research, mainly directed to the smaller focus groups chosen from the same population.

It is known that what people tell during the test and in focus groups does not influence reliably on the way they truly behave – far from that. It is known, through the experience, that what people speak and what they do are two different things. It does not mean that the mentioned methods does not give results, but it means that such results are narrow. On the same way as marketing and branding still work – but not on the same way as before.

With the aim to get the clear results and the true conclusions about that, what us motivate to buy, what are the true reactions and the feelings which the consumers have, it is possible to come by using the techniques of neuromarketing. Neuromarketing, an interesting bond of the marketing and the science represents a window in the human mind, which did not exist till now. It is a new compound of the medical knowledge, technology and the marketing. Here, the possibility of scanning is used as the way of annotation the stimulation of the brain.

Applying the most contemporary scientific equipment, using these means, it is enabled to detect hidden truths how branding and the marketing messages influence the human mind, how our deepest being reacts on the chafes on the level far away from the conscious mind and how our subconsciousness manage our behaviour (usually opposite from that we think we behave). It is a method that show how our subconscious thoughts, feelings and longing may rule our everyday decisions connected with buying.

2. CONTEMPORARY MARKET AND THE NEUROMARKETING

In the 2005. the corporations spent more than 7,3 milliards of dollars on the research only in the USA. That number grew to 12 milliards in 2007. The extra expenses of depositing into marketing of the concrete products – for the packing and presentation, television marketing, Internet marketing, the engagement of the celebrities and the billboards, etc – which take out 117 milliards of dollars yearly only in the USA. We can ask a question, if that strategies, however, still give results, why then 8 from 10 new products sink in the first three months? In Japan, for example, the launching of the new products sink in incredible 9,7 of the 10 cases. [1]

Annually, more than 156.000 of the new products are placed in the shops around the world, which means that each several minutes one new product comes on the market. On the global level, as it is claimed by one of the leading firms for marketing research, 21.000 of the new brands is represented yearly in the world, and still the results tell that a huge amount disappear from the shelves a year later. [2]

The scientists realised that the neuroscanning may be directed to that problems with the greatest chances for success by focusing on the consumer centres for remuneration, by revealing which efforts in marketing and promotion are the most successful, the most likable and the best remembered, and which are boring, cause nervousness, or – what is the worst – fastly forgotten.

3. RESEARCHES IN NEUROMARKETING

The exceptional attitude of the experts for neuromarketing about the number of techniques and methods that are used, does not exist. The accession is achieved in the greater degree, when it is talked about the advantages which certain methods have in the marketing applying. The scanning of the brain presumes the applying of the numerable techniques of brain scanning. The experts for neuromarketing give different viewpoints about the frequency of their usage.

Numerous diagnostical methods which exist today enable the scientists to understand better the functioning of the nervous system. The technology of the brain visualization, which is used in the generating of the neurological visualization is: [3]

- Electroencephalography (EEG),
- Magnetic Electroencephalography (MEG),
- Positron Emission Tomography (PET),
- Functional Magnetic Resonance Imaging (fMRI).

One of the most up-to-date ways of scanning the brain and the most used method in neuromarketing is Functional Magnetic Resonance Imaging – fMRI. The intensity and the kind of correlation of the certain sensuous stimulus (visual, auditive) and the adequate reaction of the certain brain regions are measured. The question is: how the fMRI scanner, the device for magnetic resonance “reads the minds of the consumers”? Following the reactions of the certain brain regions and knowing their basic mental functions, the scientists have the possibility (by measuring the blood flow and the quantity of the oxygen in brain) to determine the type of the psychic process (the emotion), which appear and which is caused by a certain stimulus.

This type of scanning works on the principle of determination the different magnetic features, which arise from the differences in level of oxygen in the cerebral blood. The data are projected on the display in the form of photographs in color.

The usage of fMRI is the most popular neurovisual technique, because it possesses many advantages. The first reason for that is specific speed of resolution, which enables the scanning of the whole brain mass for less than three seconds, and the second is that fMRI represents a non-invasive diagnostical method, that can be repeated a wanted number of times and in so doing there is no harm for the health of the examinees. [4]

The basic defects of this neuromarketing technique are high expenses of usage of the scanner of the functional magnetic resonance (about 500 $ for an hour of recording in the USA, and in Serbia the price of one recording is 200 eur). It is a complex technology which requires the laboratory conditions.

Inasmuch the fMRI is expensive, method which becomes more and more used in the USA is EEG, because of the different technology which is cheaper, appropriate and faster, but which does not enable the three-dimensional localization and by that the complete accuracy. [5]

4. DISCOVERIES IN NEUROMARKETING

The pioneer world of scanning the brain shows an **immense influence of the emotions** to **each our decision.** As it is asserted by George Levenstein, the professor from the Carnegy Melon: ”The automatic processes of brain dominate the most of the same and not the conscious mind. The most of it that happens in brain has the emotional and not the cognitive base.” [1] This is proved by many examples.

In 1975. the executive directors of the company *Pepsi* decided to practice the marketing experiment known as “pepsi challenge”. Actually the hundreds of the representatives of *Pepsi* put their tables in the shopping centres and the supermarkets around the world, giving to everybody that approaches the two unmarked non-labelled glasses. In one there was pepsi, and in the other coca-cola. The accessories were asked then to answer which drink they liked more. More than a half of the participants stated that they liked the taste of pepsi more than the taste of coca cola. So, according to the results of the research, pepsi should be more sold around the world, but it did not happen.

The experts for marketing tried to give the explanation. So in the middle of the previous decade (2005), Malcolm Gladwell has claimed in his book *Blink* that this experiment was based on the “test of sip” (“the test of central location”), which makes difference in flavours after drinking only one sip of drink and the whole bottle. The accessories liked more the drink, which was with more sugar than the other with less (in this case pepsi) and when they drank the whole bottle the flavour becomes different. It is changed because the organism comes in the saturation with sugar. [6]

The company has not been satisfied by the explanation and at the beginning of the XXI. century (2003), they decided to work more narrow, but this time with the help of the up-to-date technology. The experiment was confided to Read Montague, the head of the laboratory for recording of the human brain on the Medical college Baylor in Houston. He repeated the experiment from the 1975, but this time with the usage of the modern equipment for measuring the magnetic resonance. The results were covered completely with the first experiment when the consumers did not know which drink they consume : more than a half of the tested has claimed that they liked more drink from the glass were pepsi was. The functional magnetic resonance asserted this: the activity was registered (the stronger affluence of blood) in the ventral putamen, in the part of brain which is activated when the consumer likes some kind of flavour.

In the second part of this experiment the participants were told which drinks they had consumed and than 75% claimed that they liked the flavour of coca-cola more than the flavour of pepsi, but the functional magnetic resonance appointed that now one more region of brain was also activated – the medial cortex (*medial prefrontal cortex – mPFC),* the part of brain which is included in the judging and the flexible behaviour, but also has the function of thinking, noticing, self-regulation of the emotions and bringing the decisions connected to emotions. By Electroencephalography (EEG) the stronger electrical connections in the left and right medial prefrontal cortex are recorded. These facts pointed to the opposition of the rational and the emotional parts of the brain. The participants has claimed that the taste of coca-cola is better and they told that in the very small intervals of hesitation. [1]

The similar study of the neuromarketing has been done on the Princeton University. The four of the psychologists worked on it. They has scanned the brain of the persons to whom they gave the possibility to choose. The decision was: to choose immediately for the the short-timed satisfying of the need or for the deferred prize in the future. By the random sample the group of students was chosen and they had two options for buying the voucher through the web site www.amazon.com. The first option was to get 15 $ worth immediately, and the second option was to get 20 $ if they wanted to wait for two weeks.

By scanning the brain it was discovered, that the both options abet the activity in the lateral prefrontal cortex, the region of the brain that generates the emotion. But the possibility to get the voucher of 15 % immediately cause, at the greatest number of the participants, the unusual flurry of stimulations in the limbic region of the brain, which is primarily responsible for our emotional life, as also for the formation of the memory. The psychologists has come to the conclusion that the greater emotional excitement is created for the momentarily deciding for the immediate award and that the chances, that the participant would take the immediate award are bigger, though the rational mind realizes, that in this case a 20% is a better offer. [1]

Sensory Branding is another relevant discovery in the field of neuromarketing. In the modern era it has come to the abrupt development of the agencies for the advertising and marketing, which represent the real bearer of the marketing industry. The life without them today would be unthinkable: the big marketing scrollers, the illustrated advertisement in the newspapers, the television marketing, during the broadcast of the sport matches, in the political campaigns, on the stadiums, on the fasades and the roofs of the buildings, on the Internet, etc.

When we talk about the television marketing, the researchers defined that the most people to their 66 years of age see two millions of the television advertisements. In temporal terms it means watching advertisements eight hours daily, seven weeks weekly, six years fully. In the 1965. the typical consumer the advertisements brought in memory in about 34%. In the 1990. the digit fell to 8%. The phone questionnaire from the 2007. where about the 1000 consumers were surveyed, showed that an average person may enumerate only 2,21 advertisement from the all that has ever seen. [2]

The reasons for that are obvious. As it has been already mentioned in nowadays, the numerable advertisers compete all the time through different mediums for our more and more spent and weaker attention. Our brain protects itself in the way that our system for filtering becomes more and more leak tight.

The company *Neuroko*, which is engaged with the scanning of brain, has measured the electrical brain activity and the eye movements of the examinees as reaction to the television advertisements in the video-game in the study worked for the *Twentieth Century Fox.* During the virtual walk through Paris the volunteers has watched the advertisements on billboards, the bus stations and, in the buses, so that to be found which type of the marketing advertisements mostly attracts them. The result has showed: none. The researchers has discovered that the visual saturation produces dazzling, and not the greater selling. [2]

It has brought to the conclusion that the visual factors are more efficient and more distinct when they are associated with some other sense – for example hearing and smelling. In the companies the usage of the Sensory Branding connotes that, if we want to achieve the more complete emotional engagement of the consumers, we should use, besides the visual aspect (for example showing logo), also the fragrant and the music impulses in the presentation of our offer.

5. ETHICAL VIEW TO NEUROMARKETING

When we talk about such an ambitious project as scanning the brain in the marketing intentions, exists the many ethical cruxes. In the book: *The Neuromarketing: the future of exploring the consumers* Peter Laybourne and David Lewis think that a new marketing discipline “the modern craziness” is used for the manipulation of the corporations to take money from them in a fine way. The neuromarketing is something more than a modern craziness, which scientists and the experts use to beguile (dazzle) the corporative clients with the contemporary achievements. [7]

Gary Ruskin and Ralph Nadar, the founders of the non-profitable organization *Commercial Alert* reprobate neuromarketing as an controversial marketing field, which uses the medical technologies as the functional magnetic resonance (fMRI) for the purpose of improving the sell of the products. [8]

The neuromarketing has been connected by some authors with the concept, which the writer George Orwell carried out in his book *1984*, where it has been shown the extreme totalitarian society and an individual in life controlled 24 hours a day. “Big Brother is watching you” is a known expression from that book, that alludes to a government survey of each individual, and connected to neuromarketing, the expression shows that among the scientists exist the fear that scanning the brain may mean “some kind of method of reading minds”, which brake the privacy and “mental freedom” of the citizens.

Among the critics, which see neuromarketing as a new chapter of the old practice of cheating in which the unscrupulous marketing experts may lead the consumers to make bad choices, by exploiting the biologically determined structure of the human brain is also Lior Arussy. This author, as Douglas Fugate says that neuromarketing is nothing else but a specific method of *mind control*, actually *brain washing*. [3]

In the scientific literature, though dominates the view which defends neuromarketing as the more successful way of corporation with the consumers. Andrew W. Lo, CEO of Alpha Simplex Group, the company for the investment funds in the USA, thinks that the “financial, economic and the marketing researches are in the dead ends. We need to look into the brain so that we know why people choose what they choose.” [1]

Some authors, the academic institutions and the numerable companies glorify neuromarketing. The followers of the new trend in the marketing research consider that neuromarketing represents “the perspective scientific branch”, “the answer to the prayers of the companies”, “holy grail”, for which the experts for marketing has been waiting for a long time. They consider that it will help the companies to create the products, that the consumers will truly like. They avouch that it will enable much better understanding of the needs and wishes. It will be of importance for those who are aware of them and also for those who are not. “Owing to neuromarketing we will not have to worry more, because all the things we buy in the future will be articles that we want subconsciously or not.” [9]

Also, there are opinions that neuromarketing will succeed in that which the traditional explorations have not. And that is it will be able to fiducially and scientifically foresee the future of a brand or an product. Among the intercessors of this scientific method is also a Danish author Martin Lindstrom, which has an opinion that neuromarketing does not imply putting the ideas into the human brain, nor forcing a consumer to buy what he/she does not want, but discovering something that already exists in our head, i.e. It represents the key of that what we call our buyology (the science of buying). According to his opinion, neuromarketing is an instrument which can help us to clarify how we as consumers think in the situation when we are faced with an product or brand and sometimes it can also help us to discover the hidden methods which marketing experts use to seduce and cheat us without our conscious knowledge. [1]

6. CONCLUSION

The contemporary situation on the market shows, that the methods of understanding the behaviour of the consumer in the shops, hotels, on the airports, or on Internet, should be investigated. There are opinions that the neuromarketing will have a bright future and that during the time this powerful mean will be more and more used. That the traditional examination of the market – the interviews, the questionnaires, the focus groups, etc. – slowly will have less and less part by which the companies will anticipate the success of their products. It is assumed that this scientific tool, when it becomes more popular and wanted, will be more cheap, simple and available to all the companies, and thereto it will become more popular and requested.

The usage of neuromarketing presents the exceptional potential, which enables the marketing experts to target the wishes and needs of the consumers more precisely in the course of development of an product, or sending messages to the consumers and correspondingly determine their aims. However, that what remains a challenge and need in the future is an necessary level of regulation the activity so that to subdue the possibility of using the techniques of neuromarketing in non-ethical purposes.

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EXAMPLE OF USING TRAVELING SALESMAN PROBLEM TO SOLVE ISSUES OF OPERATIONS MANAGEMENT

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Abstract: *There is a large number of practical problems, algorithmic models, whose time complexity is not limited by a polynomial function of n but rather with a function in a form c^n, (c > 1) which for a large enough n can not be solved in acceptable timeframe. NP problems are problems that are not solvable in polynomial time by using deterministic methods. For solving NP problems heuristics are used. Heuristics represent a countable set of steps – algorithms of polynomial complexity – that have as a result solutions of optimization problems (without guarantees of the solution's optimality and without any prediction of their quality) in a relatively short period of time, they sacrifice optimality of the solution in order to achieve better time complexity of the program, that is it's usability.*

Machine Scheduling Problem is one of these problems in which during the operation's execution a machine is occupied. In this paper the aspects of solving Traveling Salesman Problem (TSP) are shown. TSP problem is one of the oldest and most well known optimization problems. TSP problem has a unique formulation, it is hard to solve but has a wide practical use. In this paper a solution is presented for solving Job Sequencing Problem by using TSP problem..

Keywords: *Operations Management, Traveling Salesman Problem – TSP, Job Sequencing Problem - JSP*

1. INTRODUCTION

This paper shows different parts of Traveling Salesman Problem - TSP. It shows basics of Scheduling Problems, with focus on Machine Scheduling Problem. An overview of Job Sequencing Problem is given as well as the example of a solution for such a problem by using the same principles used for solving Traveling Salesman Problem.

Paper consists of these parts: (i) introduction, (ii) Traveling Salesman Problem - TSP, (iii) Scheduling Problems, (iv) Solving Job Sequencing Problem - JSP (Job Sequencing Problem), (v) conclusion and (vi) literature.

2. TRAVELING SALESMAN PROBLEM

Traveling Salesman Problem is one of the oldest and most popular optimization problems. TSP has a very simple formulation, but it is difficult to solve and it has a wide practical usage. If we have a connected weighed graph *G* with *n* nodes. The problem is to find the shortest path that goes trough all the nodes exactly once and ends in the starting node (Hamilton cycle).

We will define a distance matrix W, and *w(i, j)* will represent the distance between nodes *i* and *j*, if a node between them exists; in other cases we will put the value ∞. We need to find a permutation p for a set of nodes $V = \{1, 2, . . . , n\}$, such that it minimizes the function:

$$f(p) = \min (w(p1, p2) + w(p2, p3) + . . . + w(pn-1, pn) + w(pn, p1)).$$

The set of values for finding all permutations is large. For 30 nodes, there are $30! \approx 10^{32}$ permutations.

TSP is NP complete problem, which means there is no algorithm with polynomial complexity that can be used for acquiring the final solution. Heuristic methods will be used instead for finding a close enough solution with smaller execution times.

Some of the most used heuristics are:

- *Greedy Heuristics.* This is a deterministic heuristic. In first part it generates the shortest cycle by using *Dijkstra* algorithm. Afterwards, in each step, it tries to add a new node between two neighbor nodes in the pre existing cycles. Of course, it picks a node for which the value will be smallest. Algorithm repeats itself until we have all nodes included. Time complexity of this algorithm is O (n^3). In practical use this approach was shown to deviate less then 20% from the best solution.
- *K–Optimal Algorithm* is one of the most popular algorithms for improving preexisting solutions. At the start it generates a generic route with the length n. Afterwards it uses the Best Improvement Method or First Improvement Method, which consists of small changes in the graphs structure, with the goal of minimizing the length of Hamilton cycle. The most used graph perturbations are 2−opt and 3−opt methods.
- *Nearest Neighbor Algorithm* is also a heuristic for solving this problem. First node is picked randomly and every next is picked by using the node with the smallest distance from the nodes picked so far until a cycle is created.

For solving the Traveling Salesmen Problem genetic algorithms can also be used for example in [17], [8], and ant colony algorithm in [7], [6].

There are many problems that can be formulated and solved by using the solutions to Traveling Salesmen Problem. TSP can be viewed as a specific problem of production with parallel machines where a traveling salesmen is a machine and cities are actual activities that need to be done [12].

3. SCHEDULING PROBLEMS

Scheduling Problem is one of the more important problems when it comes to the productivity of production systems. There where many researchers who approached this problem from different angles. Scheduling problems are solving specific distribution, assignment and resource allocation in acceptable times while not breaking other preset rules or goals. Classification of scheduling is presented in Picture 1.

The are of machine scheduling problems is the most researched one of all scheduling problems, in these problems the operation execution time requires usage of certain machines. In literature there are many known classes of these problems. ([10], [13], [16] and others), there are some of the classes:

- *Single Machine Shop Scheduling Problem* – in which *n* operations/activities are scheduled on only one machine, Picture 2 (a).
- *Parallel Machine Shop Scheduling Problem* – in which *n* operations/activities are scheduled among *m* same machines that work in parallel, Picture 2 (b).
- *Job Shop Scheduling Problem* – *i*n which order of machine usage for different jobs can be different but every job consists of an array of operations/activities that are done in the predefined order, *Picture* 2 (c).
- *Open Shop Scheduling Problem* – problem of scheduling in a production with workers – similar to *Job Shop* problem but with a difference of predefined priorities, predefined order in which operations of specific jobs need to be executed. These problems have a lot more restrictions and solutions then Job Shop problems and are thus harder to solve. In general these type of production processes are defined as singular or production by order.
- *Flow Shop Scheduling Problem* – is problem that has each operation working on a specific machine and the order of machine usage for each job is the same. *Permutation Flow Shop Scheduling Problem* – special case of *Flow Shop* problem in which has machine usage order permutable but job operation order is constant.
- *General Job Shop Scheduling Problem* – this problem class includes all other scheduling problem classes.

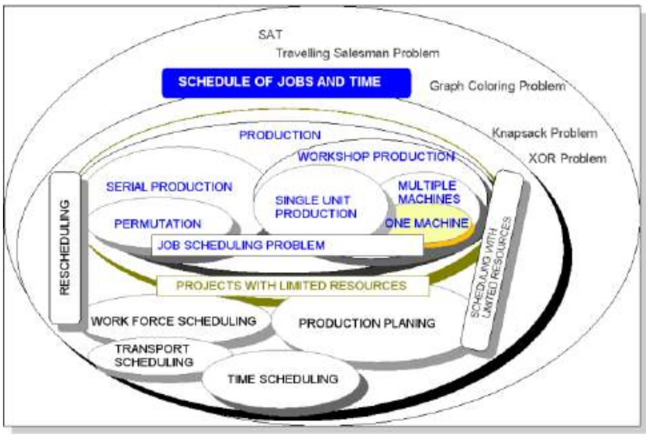

Image 1: Classification of Scheduling Problems

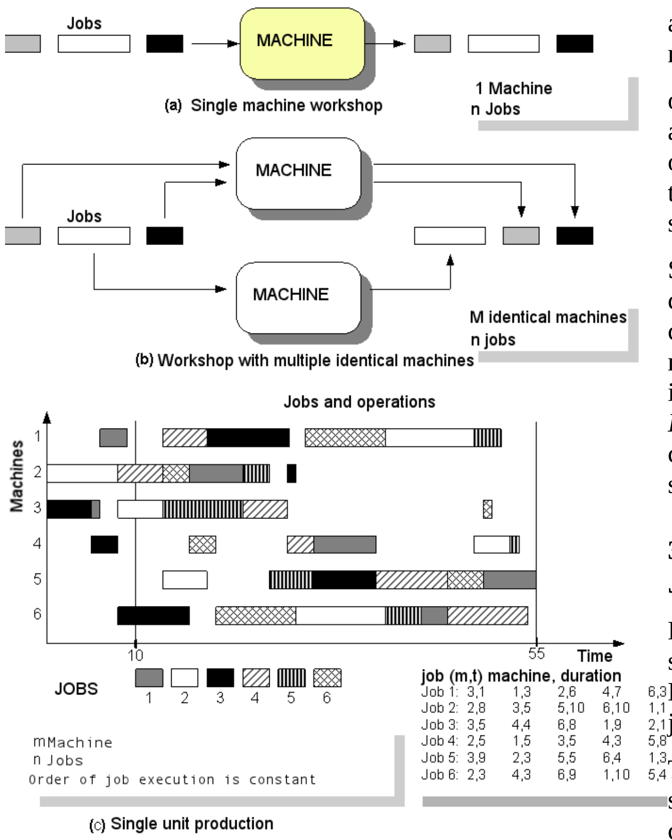

Image 2: Classification of machine scheduling problems

Optimality criteria

Goals of scheduling process are often numerous and sometimes contradictory, and some of them are: minimization of time needed for the production process, maximization of resource usage, minimization of expendable resources needed etc.

Cited criteria are usually represented as needed to be minimized, [20], and are most often cited in literature, Picture 3:

Optimality criteria by the total production time (*total production time, make-span*) min C_{max} or Optimality criteria by the time for job execution as min f_{max} , and criterial by for example: latency, job start time, total idle time, preparation time and machine setup time or combination of mentioned criteria.

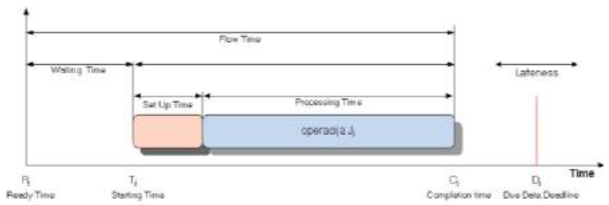

Image 3: Some parameters of scheduling theory

Assumptions

Assumptions will be made to make the area of problems being solved smaller and to limit the generality of the approach and to expand the practical usage, some of the most common assumptions are:

operations uses/consumes only one resource; resources are inconsumable; no relations of priority between operations of different jobs; job is done multiple times on the same machine; a machine can do only one job and similar.

Scheduling can be *Non-preemptive Scheduling* – activities can not be stopped and *Preemptive Scheduling* – activities can be stopped at any time. For moving jobs from one machine to another a time needs to be spent for *set up* and it can be independent from the job order (*Sequence Independent*) or it can be *Sequence Dependent* in which case jobs must be done one after another in the predefined sequence.

3. SOLVING JOB SEQUENCING PROBLEM – JSP (JOB SEQUENCING PROBLEM)

Here we will look into an example of a typical problem of scheduling on one machine, also known as Single Machine Scheduling, a process of appointing a group of jobs to one machine or to one resource.

This problem has a vide practical usage, for example in some workshops one machine can be a bottle neck that can affect performances of production and can require large optimization of scheduling. Many authors have also researched this problem: [11], [14], [4], [3], [5], [23], [2], [1], [24] and many others.

Different goals can be set for scheduling jobs on one machine. Here we are demonstrating one specific example of Job Sequencing Problem on one machine with sequence dependent setups (SDST), where the main goal is going to be lovering the total time of production (makespan), [15] [22].

When preparation time depends on the sequence, minimization of total production time becomes equivalent to minimization of total setup time. This is caused because sum of time needed for analyzing constant while scheduling and all information for jobs are deterministic are are know at the starting point of scheduling.

In this example, problem can be represented like the Traveling Salesmen Problem. In order to apply same solution as to the Traveling Salesmen Problem represents we will represent our jobs as cities and the distance between cities will be the time needed to change from one job to another.

Lets define n as the number of operations needed to be done on one machine. Operations will be executed in random order. The goal is for all operations to complete in minimal time. The problem of finding such order that accomplishes predefined goals is called Job Sequencing Problem.

Machine can me in state S_i ready to do activity i, and is in state S_0 at the start and end of an activity. We will define h_{ij} as the time needed to prepare the machine after one operation i to start another operation j, that is to move from state S_i into state S_j. We will also define p_j as the time needed to execute the operation j ($i \le j \le n$) and p_0 =

0. The goal is to execute all operation with the minimal total execution time.

Problem characteristics:

- operations are predefined,
- time for preparation of a machine from activity *i* to activity *j* is predefined,
- activities take place one after another,
- available capacity is one machine,
- it is an *NP* problem,

There are 2 alternatives for solving traveling salesmen problem:

- *Using algorithms of exponential time complexity*, which give optimal solution, for example looking at all possible variations using recursive backtracking method. This approach can be used on small number of nodes *($n \le 15$)*, because time complexity is *$O(n!)$*, for example if *n where 20* the execution of the program would take years;
- Using heuristic algorithms of polynomial time complexity, that as a result give a good approximation very close to optimal, but can be used on a large number of nodes, they sacrifice solution quality for shorter execution time.

Table 1: Example of scheduling problem with 20 operations on a machine

h_{ij} (min)	operacije																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
operacije 1	0	3	4	8	9	8	5	2	3	8	6	4	7	8	10	7	2	3	11	8
2	3	0	7	6	4	7	7	8	10	9	7	8	6	8	10	12	4	7	9	10
3	4	7	0	9	10	9	7	6	8	9	10	10	12	7	7	8	3	2	2	10
4	8	6	9	0	7	8	7	3	10	8	7	4	5	4	7	6	8	5	3	5
5	9	4	10	7	0	8	12	11	7	9	5	9	9	10	12	9	8	10	12	11
6	8	7	9	8	8	0	5	2	9	5	9	8	5	7	10	11	11	12	6	8
7	5	7	7	7	12	5	0	9	3	4	7	3	6	6	8	5	7	6	8	9
8	2	8	6	3	11	2	9	0	8	3	2	1	8	2	9	6	5	7	9	5
9	3	10	8	10	7	9	3	8	0	9	3	6	2	6	4	9	6	7	3	6
10	8	9	9	8	9	5	4	3	9	0	9	4	3	6	10	6	12	6	4	8
11	6	7	10	7	5	9	7	2	3	9	0	6	10	7	3	5	10	7	7	8
12	4	8	10	4	9	8	3	1	6	4	6	0	4	8	7	6	8	11	12	5
13	7	6	12	5	9	5	6	8	2	3	10	4	0	9	9	8	3	9	5	10
14	8	8	7	4	10	7	6	2	6	6	7	8	9	0	5	4	10	7	10	9
15	10	10	7	7	12	10	8	9	4	10	3	7	9	5	0	4	5	7	8	10
16	7	12	8	6	9	11	5	6	9	6	5	6	8	4	4	0	8	4	8	10
17	2	4	3	8	8	11	7	5	6	12	10	8	3	10	5	8	0	9	5	2
18	3	7	2	5	10	12	6	7	7	6	7	11	9	7	7	4	9	0	3	1
19	11	9	2	3	12	6	8	9	3	4	7	12	5	10	8	8	5	3	0	5
20	8	10	10	5	11	8	9	5	6	8	8	5	10	9	10	10	2	1	5	0

The program is using these algorithms:

- *Backtracking algorithm.* Recursively generates all roads for the traveler, that is all possible permutations for numbers 1 to n that start with 1. For each Hamilton cycle it calculates its length and compares it to the most optimal previously generated length. Time needed to execute this algorithm is long with a large n, so it is used when $n \le 15$,
- *Insertion algorithm.* This is a deterministic algorithm. First it creates a cycle of three nodes and after in each step it tries to add a new node in between preexisting nodes circle by picking the smallest value possible. This is why this method is called insertion algorithm. After this it generates the shortest cycle in the graph by using Dijkstra Algorithm and then in inserts the nodes again until they are all on a circular path. This is a Greedy method that in every moments picks the best possible solution. Time complexity of this algorithm in *$O(n^3)$ so it can be used for $n \le 5000$*. In practice it has shown that using this approach the divination from the best solution is usually less then 20%, but there where examples where it was even bigger and
- *K – optimal algorithm* – Nondeterministic algorithm, shown in point 1.

Inputs for the program are times needed to prepare the machines h_{ij}, it is also allowed to input total program execution time. Example problem of scheduling 20 operations is given in table 1. Result of the execution is the order of activities. Total time of execution is the summation of times needed to do each activity and the time needed to prepare the machine. Example of a solution after 2 minutes of program execution by using Backtracking Algorithm, Greedy Heuristics and K optimal algorithm is given in table 2 and on Picture 4.

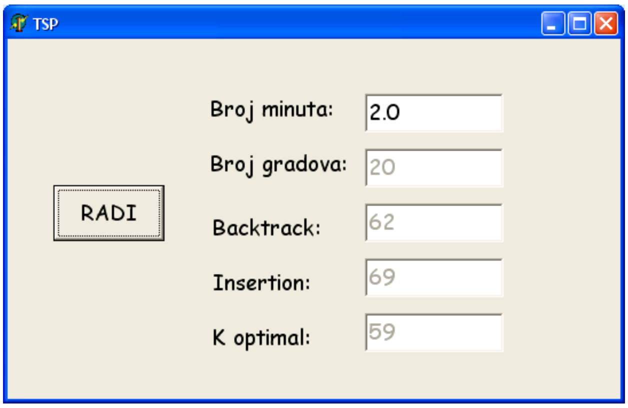

Image 4: View of the JSP program and results for the example from table 1

Table 2: Solving scheduling problem with 20 operation on a machine after 2 minutes of programs execution.

Backtracking algorithm, total time for preparation on the machine 62 min.

Redosled operacija																			
1	8	12	7	9	13	10	6	2	5	11	15	16	14	4	19	3	18	20	17

Insertion algorithm, total time for preparation on the machine 69 min.

Redosled operacija																			
1	2	5	11	15	16	6	13	17	20	18	3	19	4	14	8	12	10	7	9

K – optimal algorithm, total time for preparation on the machine 59 min.

Redosled operacija																			
7	9	13	10	6	8	14	16	15	11	5	2	1	17	20	18	3	19	4	12

4. CONCLUSION

This paper shows different views of the scheduling problem, their usage and complexity as well as the characteristics of the sequential jobs. The example shows application of traveling salesmen problem on solving a particular sequential job problem on one machine, also known as sequence dependent setups (SDST).

Three of the most often used heuristics where analyzed based on the developed application for their representation.

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IMPORTANCE OF INNOVATION IN IMPROVING BUSINESS

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Abstract: *The aim of the research study is to show the role of innovation in the company. Actually what innovation project contributes to the production Wood industry. The key to the success of companies in Bosnia and Herzegovina is competitive advantage. The energy sector and the wood processing sector are most developed and more interesting for foreign investitors through design research we presented practical case based on product innovation in the company Isowood.*

The case from practice contributed to the authors to understand the rapid changes that have taken place in the company Isowood by introducing worktop postformed chipboard. By investing in new product and technology in the company Isowood, achieved the increased number of employees, increased demand and revenue in the domestic market.

Keywords: *Innovation, Innovation project, Wood industry, Competitive advantage, Product innovation, Technology*

1. INTRODUCTION

Companies today operate in a very dynamic, uncertain and competitive enviroment. Today companies in Bosnia and Herzegovina are trying to achieve competitive advantage in order to help them obtain a better and a stable position in the marketplace. The best way for companies to achieve competitive advanatage is through innovation.

Yeung (1999) argued that competition, which was a key driver for competitive advantages, might also be a driver for innovation.

Innovation represents one of the essential characteristics of small businesses. According to some statistical data, in all countries, small businesses constitute the majority of enterprises, and as a result of this, they face the most severe competition. In order so survive in this competition, they are made to be innovative. Small businesses are centres of initiatives for innovative attempts. The ability of the company is to bring in new products and services as a main factor of success to maintain competiton. The innovative ability is getting more important than ever before. Concretely, companies which parcipiate in market environment as a business-consumer claim that starting up of the innovation is the key for the business success (Kastensson, 2011).

If we compare the innovators, we can realize that some companies capitalize innovations better than some other companies. For the existence of the company and creating a competitive advantage in the market it is necessary to innovate (Božić, 2005).

The development process of the products usually start with some kind of user needs (consumer) or with the identification of market opportunities. The basic operation of innovation are creativity, inscrutability, possibility to build upexisting ideas in new solutions or to implement existing solutions in the new context. The creativity and the ideas of generations are useful abilities, but the ideas have to be put on the work. The ability to implement the idea of innovation is an important concern . There are many examples of the implementaion of ideas which do not reach the implementation stage. The key to achieve the complete innovation ability is to develop in common what to do, than who will be the beneficiaries of innovation, and in which context it will be used (Kastensson, 2011).

The innovation consists of three elements such as: ***idea, implementation and performance*** . Sometimes people

define the effectivness as an improvement, not as innovation , but it is one more form of the innovation, because it also includes idea, implementation, and influance on reduction of costs (Dabholkar & Krishnan, 2013). Sometimes people define the effectivness as an improvement, not as innovation , but it is one more form of the innovation, because it also includes idea, implementation, and influance on reduction of costs (Dabholkar & Krishnan, 2013).

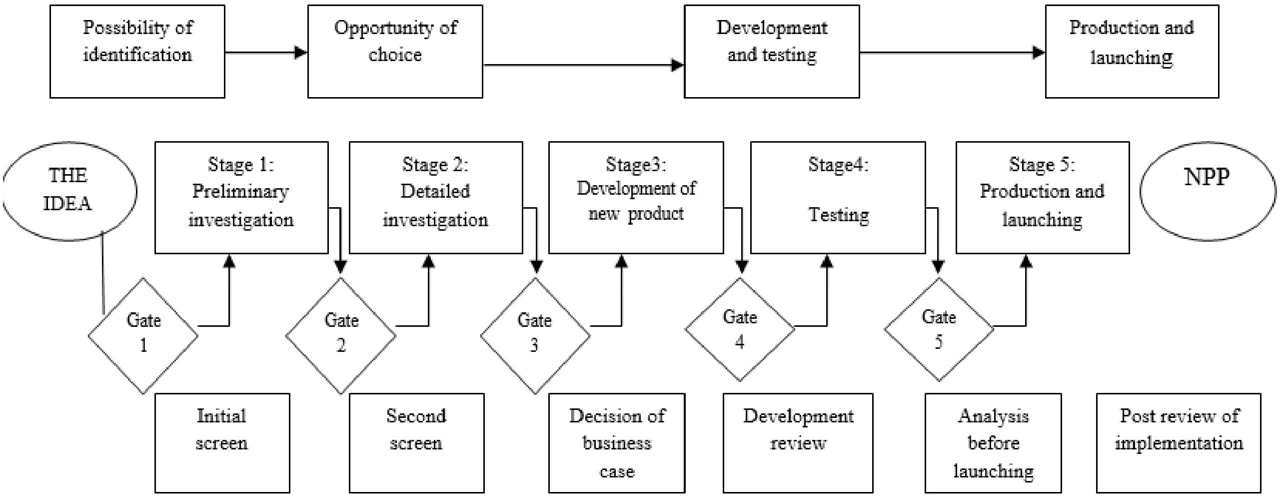

Image 1: The appraisal of the idea; Cooper's Stage-Gate Process[1]

Source: Cleveland, 2005

According to Rebrenik & Bradač to understand the complexity of the complete process about the realization of the idea, from identification of the idea to the implementacion, we have to work out consecutive stage:

1. Identification and organization of the idea ,
2. Making list of available methods and technics,
3. Developed a set of criterias for select aparticular method,
4. Selection of a method,
5. Application of a method,
6. Selection of idea,
7. The idea,
8. Implementation.

When developing the new product it is important to ensure that the new product enter a market as soon as possible ***"time to market"*** , so the invested capital can as soon as possible return (Šimunić,Groš & Medić, 2013).

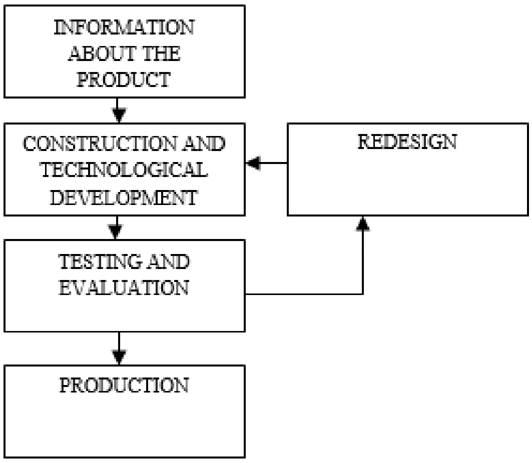

Image 2: The process of developing the new product[2]

[1]Scheme 1. indicates processs of idea managementi for new product development. Stages are stpes in process from idea to commericalization and gates are activities that idea or project should be done beofre idea move from one stage to ontoher. It means that idea should be conducted in context of understanding the process and goals of the company.

[2]Sheme 2. presents process of development new product, in order to reduce time of developing product it is necessary in early stage to make a prototype means a model of the product, which will be useful in later stages. After determining defects, prototype could be redisgn. Process is repeating untill achieved goals, results in the field of aesthetics, functionality and security

Source: Šimunić, Groš & Medić, 2013, p. 187

2. AN EXAMPLE OF THE BUSINESS SUCCESS AND GAIN COMPETITIVE ADVANTAGE IN COMPANY ISOWOOD

It was decided, with strategic plan, to move forwards to innovations of products and enrichment of the section for the production of kitchen worktops-postforming. At the end of the 2012th year there was installed the equipment for the production of new product kitchen wortops-postforming. In forming this section the large contribution had the Swedish development agency "Nerda", who recognized this project and supported it with a donation in amount of 15.384 €. The rest of the costs, for installing and putting into operation of the section postforming, covered the company Isowood by oneself. The total costs, invested in this realization of this idea were in amount of 282.051 €. Having decided to take this step Isowood company became the only factory that manufactures this type of productin on the territory of ex-Yugoslavia.

Table 2: Investing in the realization of idea[3]

The costs of Isowood	266.666 €
Donation of Nerda	15.384 €
Total costs	282.051 €

The idea for production of this kind of product was recognized on the Western market. Compared to Western market the innovative project of the company was that the kitchen worktop which was in the West producing from solid boards covered with CPL, to produce from chipboard covered with CPL. The main factor that influenced on such difference in producing the same product is the price of plywood resources compared to the price of solid boards. Namely, solid board is more expensive compared to the chipboard and the product produced from wood panel could not be competitive and sold on the domestic market. With well done elaborate standard and market in B&H, management of the Isowood company recognized that the kitchen panel could be produced from the chipboard and would be accetable on the domestic market. That appraisal of the company management has shown as correct what confirms also the continuously growth of sales of the kitchen panels from chipboard in the period of the year 2012th year to today.

Table 3: The difference in price of resources[4]

Price of wood panels multiplex (MPX)	12.82 € /m
Price of chipboard	5.12 €/m

With this product the company became a recognized brand on domestic market. By the year 2012 the total revenue of the company depended largely on the export of the product and made more than 97% in comparision with sale on domestic market which has done all about 2.5% of total revenue. However, with the installation of postforming section for the kitchen panels made of chipboard, that percentage has largely changed and now the total revenue projection as significant item occupy the revenues of sales on domestic market.

Today, that ratio in percentage is about 80% of revenue from export and about 20% of revenue from sales on the domestic market.

Table 4: Revenues[5]

Year	Total revenue€	Revenue from foreign market€	Revenue from domestic market€	% Revenue from foreign market	% Revenue from domestic market
2011	5.230.208	5.085.904	144.304	97.24	2.76

[3]Tabela 2. shows costs of investments in installation and sturt up drive of postforming

[4]Tabel 3. presents differences in prices of resources, which was the core factor for project innovation

[5]Tabela 4. indicates persentage of difference in revenue of foreign and domestic markets before and after installation of postforming

2012	4.796.080	4.552.525	243.555	94.92	5.08
2013	4.901.868	4.368.005	533.864	89.11	10.89
2014	4.842.970	3.894.992	947.978	80.43	19.57

3. CONCLUSION

Very small number of companies survive long without innovations. Innovations are the main activator of economic growth and development of the economy of each country. For this reason it is very important, to raise the awareness by the management about the need of creating the creative atmosphere in their companies.[6]

The source of innovative product includes new technology, results of exsperiments, results of creative researches or informations from competitors all together represent the combination of ideas and informations for the realization of the new product on the market. After developed idea comes the implementation of innovative product through the construction and technological development of same product, than testing the product and releasing to production. If testing the product shows barriers for further working production, production and management of the project is obliged to return back to the construction and technological preparation of the production in order to identify the existing mistakes in the preparation of the product. After that the product goes through repeated phase of testing and putting into production.

Without project innovation in any segment, the company slowly but surely dying out. To be noticed by the customers it is necessary to base on the project innovation and in such way potentiate bigger assortment of the products for the customers. Therefore we conclude that innovation improve business success and obtain a competitive advantage.

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TRENDS OF SUSTAINABLE PRODUCTION AND CONSUMPTION IN THE WESTERN BALKANS - THE CASE OF SERBIA

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Abstract: *Sustainable production and consumption consist of a complex web of different activities: from lifestyles, modes of consumption, eco-design of products, ways of using free time, food production to other activities that inevitably affect the environment, but can be changed. This reduces the negative impact on the environment. For as successful changing trends it is necessary that each individual consumer and every businessman, manufacturer start examining their scope of influence in terms of resource sustainability. The Western Balkan countries, among which is certainly leading the Republic of Serbia realize, accept and strive to provide our government acts through a strategy of promoting Sustainable production and consumption. Only then, when people consciously begin to change and change their behavior, we can talk about the changes in the direction of sustainability.*

Keywords: *sustainability of production and consumption, Strategy, Serbia*

1. INTRODUCTION

Sustainable consumption patterns are related to the demand directed at the consumer choice of goods and services such as food, housing, clothing, mobility and leisure, to the fulfillment of basic needs and improving the quality of life. Measures to encourage sustainable consumption do not affect directly only to products and services used by consumers, but also the energy and materials consumed in production processes, and the generation of waste during the whole life cycle, from the exploitation of raw materials to disposal or reuse. Governments must ensure that consumers receive not confusing information on the impact of products and services on the environment by using schemes such as eco-labeling, information, environmental statement, reporting on the environment and information centers for consumers. They should also promote internationally recognized symbols (characters) to eco-labeling. Sustainable consumption requires that consumers, communities, businesses and civil society organizations are aware of the possible impact of products and services on the environment, health and safety, including the local and global impact. Sustainable production refers solely to the manufacturing process and takes into account the economic, social and environmental impacts of the production process. Sustainable consumption refers evenly to the production as well as the consumption part of the process, and responsibility for sustainable consumption lies equally on both producers and consumers. Accordingly, manufacturers should aim for a production process that would not only create quality and lasting products, but would also methodology of this process should be such that it uses the optimal amount of resources and to their maximum. On the other hand, consumers with their proper selection of products and moderation in their use (and appropriate disposal of waste product), but also rational and moderate consumption of basic resources (water, gas, el. Energy) should contribute to changing current unsustainable consumption patterns.

1. CONNECTION OF PRODUCTION WITH CONSUMPTION

Achieving sustainable patterns of production and consumption, globally, demands a clear structural change in the long term. Considerable efforts have already been undertaken by the government, workers, businesses and non-governmental organizations for achieving sustainable forms of production. New opportunities for environmental improvement are provided by placing emphasis on consumption. This approach is based on the impact of the decisions made during the lifecycle of a good or service by citizens, industry and government, so that environmental damage be progressively reduced to the level and in the framework of natural borders. The aim is to increase the selection of the final customer - be they individuals, companies or public companies - to have the choice of sustainable consumption. It is evident that many worrying trends for the environment are largely the result of millions of individual life decisions. But we should not lose sight of that focus on the end customer does not change the basic division of responsibilities of the different actors. Governments should ensure that overlapping frame support, infrastructure, regulation and leadership that will enable other actors to take responsibility for impregnating his part of the chain of production, consumption to disposal. The business sector is ultimately responsible to manage the life cycle of goods and services in a manner that ensures that they are not harming the environment. Public enterprises and business, in addition, use large amounts of energy and natural resources, in addition to generating an equivalent level of pollution and waste. At the same consumers in their decisions, much influenced by advertisements and other economic and structural control mechanisms that have business and government.

To be successful, the action changing patterns of end customers require efficient support, adequate and accessible information available tools, social support systems and cultural norms that reward sustainable consumption patterns.

2. SUSTAINABLE CONSUMPTION AND IN THE INTERNATIONAL CONTEXT

Sustainable consumption and production (SCP) was placed on the political agenda in 1992 at the Conference on Development and Environment of the United Nations in Rio de Janeiro. Globally, the political framework of actions for sustainable consumption and production is based on the commitments undertaken at the World Summit in Johannesburg in 2002 and the Marrakech Process launched in 2003. The EU strategy, Sustainable Development Strategy in 2006, identified sustainable consumption and production as one of the seven most important challenges so that the EU is now developing an Action Plan for sustainable consumption and production. The importance of sustainable consumption and production was identified and the process of Environment for Europe. In the Kiev Declaration in 2003, the Ministers for Environment underscored important is the use of patterns of sustainable consumption and production and encourage regions, sub-regions and countries, where appropriate, launch programs to accelerate this process.

Sustainable consumption and production has been defined as: "... a holistic approach to minimizing negative impacts on the environment through consumer-productive system in the society. Sustainable consumption and production aimed at maximizing the efficiency and effectiveness of products, services and investments so that the needs of society are met without compromising the ability to satisfy the needs of future generations." (Norwegian Ministry of the Environment, 1994)

The concept of sustainable consumption and production is based on the three pillars of sustainability: economy, society and environment. The social dimension of this concept takes into account equality between generations, such as taking care of consumer protection. The economic and environmental dimensions described in the Kiev Declaration as "decoupling economic growth from environmental degradation by promoting simultaneously the economic growth and environmental protection."

Sustainable consumption is a term that encompasses a number of questions such as: satisfaction of needs, improving the quality of life, improving efficiency, increasing the use of energy from renewable sources, minimizing waste. It contains perspective life cycle with the care of dimensions equality. The central question is how the integration of these multiple, provide the same or better services for present and future generations, while continuously reducing environmental damage and the risk to human health.

Therefore, the key question is to what extent it is necessary to improve the quality of the environment can be achieved by replacing the more efficient and less polluting goods and services (patterns of consumption), to which a reduction of the quantity of used goods and services (consumption levels). Political reality in democratic societies is such that it will be much easier to change consumption patterns rather than the size of consumption, although both issues need to be addressed. The basis of modern thinking on sustainable consumption is a growing awareness that reforms of national economic policies that provide goods and services must include environmental costs as well as to stimulate more sustainable patterns of consumption and production. At the same time, the countries of the world continue to increase their income and gross national income. It is possible to increase revenue while reducing resource use. Although, the risk remains that the increase in the volume of consumption to be more important than improving the energy and increase efficiency. There will be situations in which the opportunities for economic growth can come into conflict with the direction of sustainable consumption. Everyone should be aware of such conflicts. But if we are to achieve sustainable consumption is of great importance that in such cases the viability put first.

More in 1992 on the set of land in Rio in 1992 adopted the Declaration on Environment and Development, in which it was pointed out that countries to achieve sustainable development and improve the quality of life of all people should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies. Declaration and Programs of Action for the 21st Century (Agenda 21), adopted at the Conference give strong support to the principle of sustainable development. United Nations General Assembly in 2000 adopted the Millennium

Declaration (United Nations Millennium Declaration), the United Nations political document for the 21st century, which sets development goals in areas of interest to the international community and activities that should contribute to their realization. It is eight Millennium Development Goals for which the Member States of the United Nations have pledged to achieve by 2015. The principle of sustainable development then a strong political support at the World Summit on Sustainable Development, held in 2002 in Johannesburg.

United Nations Conference on Sustainable Development (UNCSD) "Rio + 20", held in 2012 in Rio de Janeiro, has set a comprehensive framework for sustainable development. One of the most important decisions of the Conference is to define future goals of sustainable development (Sustainable Development Goals), which will include the three dimensions of sustainable development - economic, social and environmental, and that should build on development policy contained in the Millennium Development Goals (MDGs) and constitute a global development agenda for the period after 2015. The conclusions of the United Nations Conference on Sustainable Development in 2012 "Rio + 20" gave a new impetus to the policy of sustainable consumption and production, and is part of the document The Future We Want document adopted 10-year framework of programs on sustainable consumption and production (10YFP-SCP). It is anticipated that within the 10YFP-SCP develop voluntary programs, projects and initiatives that will be in accordance with certain criteria: they are consistent with the objectives and principles of the 10YFP-SCP, based on an assessment of the life cycle of products and services, the arts, are transparent, to respond to regional and national priorities and dr. For now identified five areas for program development:

1. Information for consumers
2. Sustainable Lifestyles and Education
3. Sustainable public procurement
4. Sustainable building and construction
5. Sustainable tourism, including ecotourism

International consensus for changing consumption and production patterns is clearly shown. Efforts in the framework of international activities require the establishment of a strong base of support policy application forms of sustainable production and consumption, and in particular it is necessary:

- Explanation of global, regional, national and local efforts for production and consumption, such as environmental planning capacity. The nature and scale of environmental problems created by individual forms and volume of consumption should be known.

- Greater accuracy in defining key concepts, as well as in the separation of levels, consumption patterns and distribution.

- A greater understanding of social, demographic, economic, ethnic, cultural, and technological control consumption patterns.

- Connect action on the micro-level (for example, access to life cycles production management) with a usable capacity of analysis at the macro-level.

The initiative of the EU - Common Market for green products

The Council of Ministers of the Environment of the European Union in April 2013 adopted a Communication from the Commission 'Building a single market for green products. With the Press there is also a recommendation on the use of common methods for measuring and providing information on the environmental characteristics of the product and the organization. Methods for calculating the footprint of Environmental Organization and environmental footprint of products (Product Environmental Footprint, PEF) are based on an LCA (Life Cycle Assessment). In June 2013, the European Commission has launched a three-year pilot project in the framework of which he will be with the help of the Guidelines for the implementation of PEF and OEF develop methods for certain product groups and organizations.

3. SUSTAINABLE CONSUMPTION AND PRODUCTION IN THE SERBIA

National governments have a wide range of important responsibilities, including setting up the analytical and political framework for sustainable consumption (including dynamic market conditions), the establishment of effective incentives, infrastructure and information to allow consumers the choice of sustainable consumption, precedence through procurement policies, and the use of indicators to measure progress. Next empowerment policy should be taken: Government as consumers affect the comprehensive requirements for goods and services through the adoption of environmental policy strategies for procurement and provision of services and administration.

Actions by the controller at the local, national and international levels are important to choosing appropriate forms to the requirements therefore are crucial for achieving sustainability. The challenge for governments is to achieve real synergy in combining different types of instruments to change the requirements.

Governments have a central role in correcting market through the adoption of regulations, social and economic instruments. At the same time, governments should also lead to corrections and their economic and sector policies to ensure that subsidies do not provide support unsustainable patterns of consumption and production. As the main consumer, public companies can help in the design of market conditions by applying environmental criteria and objectives in their purchases, providing services and administrative activities.

National Strategy for Sustainable Development of Serbia emphasizes that the key precondition of realizing the concept of sustainability in all dimensions, including in the field of environmental protection, proper management and broad support of all stakeholders, both political and economic, experts, public opinion, with particular emphasis on public participation in decision-making on solving environmental problems. For this, however, is not important only to highlight the principles of participation, it is necessary to carry out an organized campaign encouraging, informing and training the public, as citizens would be able to influence the solution of the problems that affect their quality of life.

Sustainable production and consumption-example: Serbia

The vision of sustainable development of the Republic of Serbia until 2017 that it was institutionally and economically developed country with adequate infrastructure, compatible with EU standards, with an economy based on knowledge and efficient use of natural resources, higher efficiency and productivity, rich educated people, with preserved environment, historical and cultural heritage, the state in which there is a partnership of public, private and civil sector and that provides equal opportunities for all citizens.

This vision resulted from the strategic goals of sustainable development, based on a thorough analysis of the potential of the Republic of Serbia, as well as the conditions and limitations for the realization of development goals. This vision can be achieved if you are consistently applied fundamental, strategic and consistent objectives, which are based on the needs of the citizens of the Republic of Serbia to reach a better life and a better standard of living. Social consensus means that all levels of government recognize their role in achieving the vision of development of the Republic of Serbia until 2017, and that all together affect the state institutions in order to achieve the strategic goals of sustainable development.

According to the vision, set out the national priorities of the Strategy, as well as strategic and sector objectives of sustainable development and development instruments and activities that are necessary for their realization. Strategic and sector objectives, priority activities and development instruments in the field of sustainable production and consumption means that they must respect the balanced relations in the exploitation of natural resources and ensure a high level of protection and improvement of the environment. To reduce environmental pollution and promote sustainable consumption and production, but economic growth may not cause a proportional increase in environmental degradation.

In terms of achieving sustainable production and consumption, the strategic orientation of Serbia is clear, and it started from the general principle that the Council was already the last three decades of the twentieth century in different ways trying to build a system of sustainable production and consumption. The concept of sustainable production and consumption in Serbia and its strategic documents is based on the generation of greater added value with less consumption of materials and energy and with as little negative environmental consequences that would have left a better chance for future generations. It started from the consequences (resolving the issue of waste, reducing the effects of harmful emissions, "green" packaging, recycling of existing by-products) to a later analysis focuses on clean, energy-saving material and production.

Today's globally usable concept refers to sustainable production and consumption, which includes environmental, material and energy efficiency at every stage of production of goods and services from design and manufacture through primary and secondary use, to recycling and disposal. This model is known as the "life cycle" and referred to it as how designers, engineers, technologists, and economists, lawyers, culture. At every moment of his existence, product manufacturers, distributors and consumers need to be aware of their environmental, socio-cultural and other consequences and be responsible for them. In addition, the transparency of environmental characteristics of the product and the way it is consumed, as well as the broad participation of the public are of great importance for its sustainability.

The Republic of Serbia is in a very precarious place when it comes to sustainable production and consumption. Goods and services on its market are produced and used to produce an excessive and dangerous waste (illegal landfills and large suburban dumps). Energy efficiency is very low regardless of the energy deficit the country as a whole, so we can say that the energy in the Republic of Serbia, which for economic, partly because technological factors, largely dissipated. In the production of goods and services in Serbia too much material is used and the volume of recycling is insignificant, which has a negative effect on the depletion of resources and waste management costs.

The Republic of Serbia shall immediately take very harsh measures to restrict the "dirty" production as well as measures against the production and printing of dissipating energy and material, especially non-renewable resources. Some of these measures are ambiguous, such as the economic price of electricity with internalized environmental and natural rent. Along with that, you need the state, tax or other incentives for "green packaging", biodegradable material reduction and separation of waste, increasing energy and environmental efficiency of production of energy-saving programs. These primarily as a stimulant (and if necessary restrictive) measures must be oriented towards the producers / consumers. This systematically implies:

- Economic intervention - to pay the total price (including externalities) of energy, as well as natural, especially non-renewable resources, goods and services, primarily through changes in legislative activities, in accordance with the principle of "polluter pays" and "user pays" principle;

- Incentives - encouraging the production, maximizing the use of "green" and environmentally friendly materials (recyclable) and renewable energy;

- Adoption of appropriate legislation regulating environmentally harmful and unacceptable production and consumption, import and export of environmentally unsuitable products and services;

- Education and training for sustainable production and consumption on a broad front;

- Standardization of products and services from the standpoint of environmental and other consumer protection;

- Wide media campaign for sustainable production and consumption;

- Demonstration of healthy living and sustainable consumption using the system more efficient, more economical and cleaner transport (public transport and bicycles instead of private cars);

- Encouraging people to the appropriate attitude towards the consumption of energy, water, food, nature protection and conservation of biodiversity, cultural and other permanent value;

- Appropriate protection of consumers and their inclusion in the definition of measures and activities for implementation of the concept of sustainable production and consumption.

Trend of cleaner production - One of the activities relating to all economic sectors and activities, and which brings together the sector objectives and priority actions, is the introduction of cleaner production, in accordance with internationally recognized instruments: IPPC, BAT, BEP, BATNEEC, EIA and LCA. This activity is closely related to the efficient use of production factors, by reducing the energy intensity and the intensity of use of the materials, the development and implementation of a system for the management of industrial waste, especially hazardous waste. It is clear that the Republic of Serbia can no longer provide a competitive advantage in the international market is not cheap labor, not an abundance of natural resources. Natural resources, both in the structure and quality, can not meet the growing needs of dynamic development. No abundance of cheap labor, nor is it can be. Hence the need to find new engines of economic growth and social progress. The overall priority programs and objectives in the field of cleaner production include:

1) changes in the existing or adoption of new regulations for the purpose of promoting the use of cleaner production and harmonization with EU legislation;
2) the introduction and / or enhancement of efficient, sustainable and clean production and more efficient use of energy;
3) construction of infrastructure in the field of cleaner production - the realization of investment projects in the field of research (research and development research, as well as construction of industrial plants) - development of industrial and technology parks, clusters, innovation centers and incubators;
4) establishing a system of waste management, with particular emphasis on the possibility of reducing waste generation and exploitation of waste as secondary raw materials and energy sources;
5) Accelerating the restructuring and privatization;
6) education in the field of environmental protection, the use of cleaner technologies and energy efficiency.

The priority is adoption of implementing regulations under the Law on Environmental Protection ("Official Gazette of RS", no. 606/91, 83/92, 53/93, 67/93, 48/94, 53/95 and 135/04), which relating to: environmental quality standards and emission standards; system of environmental management; Eco; import and export of substances that deplete the ozone layer; import, export and transit of waste; treatment of hazardous substances; monitoring, information system and an integral cadastre of polluters; the introduction of economic instruments (fees for use of natural resources and compensation for environmental pollution).

Through the realization of the objectives of the introduction of cleaner technology improves the competitiveness of the economy, encourage the development of "knowledge economy", and raises the overall prosperity of the nation.

Green public procurement - Green public procurement is a voluntary instrument of sustainable production and consumption, and denotes a process in which public authorities seek to procure goods, services and works that have less impact on the environment during their life cycle when compared to goods, services and works for the same purpose that would otherwise be purchased. In this way, public authorities may have a significant impact on the market and contribute to reducing the consumption of natural resources, reduction of hazardous and toxic substances, reducing emissions to air, water and soil, and can reduce or prevent the generation of waste at source. Promotion and implementation of green public procurement provides the impetus for the development of eco-innovation.

How do the public procurement procedure 'green'? The criteria of the European Commission for green public procurement technical indicators of the environmental impact of certain procurement of goods, works and services. Their use in public procurement represents a scientifically proven criteria according to which the procurement process is considered a 'green'. The process of developing and auditing standards maintained by the European Commission and the EU Member States themselves to decide the extent to which they will be used in public procurement procedures.

Manual European Commission Buying green (eng) describes how different types of eco-labels can be used in each stage of the procurement process. It serves as a guide for public authorities to procure goods and services, and is considered to be useful for policy makers as well as for economic operators that respond to 'green' tenders. Commission for green public procurement for the development and monitoring and evaluation of the implementation of the National Action Plan for green public procurement aims to propose measures and activities for the promotion of green public procurement.

4. NEW TRENDS IDENTIFIED SUSTAINABLE PRODUCTION AND CONSUMPTION IN THE CASE OF SERBIA

Sustainable production and consumption are engaged in the satisfaction of basic human needs and improving the quality of life in a way that minimizes the use of natural resources, the creation of toxic substances, emissions to air, water and soil, and to prevent or reduce the generation of wastes at source during the entire life cycle of products to not to compromise the needs of future generations. While sustainable production refers solely to the manufacturing process, ie. producers and takes into account economic, social and environmental impacts of the production process, sustainable consumption refers evenly to the production as well as the consumption part of the process, and responsibility for sustainable consumption lies equally on both producers and consumers. Manufacturers should aim for a production process that would not only create quality and lasting products, but would this process and methodologies should be such that it uses an optimum quantity of environmentally friendly resources and to their maximum. Sustainable development implies the realization of three general objectives: stable economic development, social equity and environmental protection. These objectives, taking into account the responsibility of the state at the international level for global issues can only be done in collaboration between all stakeholders. In achieving the aforementioned objectives should:

- protect the earth's capacity to support life in all its diversity, respect the existing limits on the use of natural resources and ensure a high level of protection and improvement of environmental quality, prevent and reduce environmental pollution and promote sustainable production and consumption to economic growth does not necessarily mean the degradation the environment;
- respect national specificities;
- promote an economy based on prosperity, development changes, spirit of competition and the social responsibility, an economy that ensures the quality of life and full employment;
- Promote a democratic, socially inclusive, cohesive, healthy, safe and just society with respect for fundamental rights and cultural diversity that creates equal opportunities and combats discrimination in all its forms;
- scientific and technical knowledge to develop a system for the protection of human health, including the remediation of existing environmental burdens;
- encourage the establishment of democratic institutions in the region and the world and defend their stability, based on the universal right to peace, security and freedom;
- Actively promote sustainable development in the region and the world;
- strengthen partnership among all segments of the community.
-

Directing towards sustainable development will be guided by the following general principles:

a) protection of human health;
b) promotion and protection of fundamental human rights;
c) solidarity within and between generations;
d) open and democratic society;
e) involvement of citizens;
f) involvement of businesses and social partners;
g) corporate social responsibility;
h) integration of economic, social and environmental components in the development of all policies (guidelines);
i) education for sustainable development;
j) coherence of policies at all levels of administration and local self-government;
k) use of the best available technology;
l) recovery (eg. Re-use or recycling) of natural resources;
m) the promotion of sustainable production and consumption;
n) precaution and prevention;
o) "polluter pays" for damages caused to the environment.

Progress towards the development of sustainable production and consumption will be achieved within the framework of the general objectives and balanced policies:

- build a stable economy;
- ensuring energy security and efficiency;
- raise and equalize regional development and realizes good internal cohesion;
- ensure full foreign, ethnic, religious and age equality;
- To build a quality public health;
- build an effective social welfare system;
- Provide high level of education of the population;
- build a system of special measures for the socially vulnerable part of the population;
- to ensure the management and rational use of all natural resources;
- to achieve good environmental monitoring efficient emission control system;
- efficiently protects parts of nature and environmental components;
- Take measures to mitigate climate change or adapt to climate change and minimizes its effect on causing.

For a long time it was thought to be a significant part of the problem of the production process related to the environment, using advanced technologies to solve, but it's clear that this is not so. The assumption that new technologies can make it easier and cheaper production and thus significantly contributing to the reduction of negative impact of the manufacturing process on the environment. But unfortunately leads to a rebound reaction. [1]

Republic of Serbia its country with small and open economy largely linked to other foreign markets. Legislation governing the issue of genetically modified food (GMO) differs significantly between countries of the World. The Republic of Serbia, the Act included the problem of protection from the harmful effects of genetically modified organisms, which includes measures to prevent the release into the environment and placing on the market of GMOs and products containing and / or consisting of, and / or originate from GMOs contrary to the provisions of a special regulation. Also, both countries support the view that modern biotechnology should be used with maximum caution and with maximum protection of human health, consumer interests and the preservation of the environment and natural values. Must be followed strict regulations on GMOs in regulating the handling of GMOs for research purposes.

With increasing awareness of the importance of eco-efficiency as a prerequisite for entry into more demanding markets in the observed countries increases the number of companies certified according to DIN EN ISO 14001 for environmental management systems (EMS), especially in the industrial sector companies and large energy producers, and improvements are realized and implementation of cleaner production projects. [2]

The establishment of the Environmental Information System (EIS) as a set of interconnected electronic databases and sources of information on the state of the environment monitoring of individual environmental components, pressures on the environment, the state of the environment, spatial features, climate and waste.

Clearly, it is precisely this challenge of sustainability, sustainable consumption and production, given the impact of the various stakeholders in the process. Citizens, consumers are equally important stakeholders as producers because they have the ability to direct and encourage processes, for example by selecting products that are manufactured in accordance with the principles of sustainability. Of course, the responsibility for ensuring the transparency of the production process and overall resource consumption in the manufacture of certain products and product composition lies on the legislator in terms of creating a legal framework that obliges the producer to do, and the producer, who is obliged to respect legal provisions and the responsible business.

We want recognition of products or services, which the entire life cycle (consumption of raw materials and energy, emissions to air, soil, water use, waste production, recyclability and the possibility and necessity of disposal) less impact on the environment, manufacturers, distributors and service providers use the environmental label. Tim sign manufacturers / distributors and service providers demonstrate their positive attitude towards the environment, and at the same time is a sign of environmental protection guideline consumers in relation to the environment make the best choice.

Overall objective: Achieve balanced and stable economic growth which would have less impact on further environmental degradation and waste generation than it has now. Growth must be accompanied by a change in unsustainable behavior patterns in households and in the public and private sectors.

Activities or Measures to Achieve the Overall Objective with Specific Objectives: [3]

1. Elaborate all elements and implement a regulatory framework which encourages market supply of sustainable products and services.
2. Increase the proportion of arable land from the present 4.867.000 ha to 5.700.000 ha, by using uncultivated land that presently amounts to 1.000.000 ha.
3. Increase livestock production to pre-war level, with application of new technologies on the principles of sustainable agriculture.
4. Ensure sustainable management of fish stocks.
5. Increase the share of area under organic production (including pastures and forests) and support the development of the market for organic products.
6. Encourage the development of organic food production and ensure sufficient quantities of high-quality food, attract tourists, develop ecotourism and ensure exports of recognizable national products.
7. Achieve competitiveness and enter more demanding markets by increasing efficiency while reducing risks to humans and the environment and by incorporating the principles of socially responsible and transparent business practice and stakeholder interaction.
8. In production processes, products and services to integrate cleaner production programs.
9. Promote and encourage the use of the Environmental Label.
10. For the effective management of the environment and informing the public about the effects of certain activities on the environment, benefits and incentives ensure inclusion of a greater number of organizations in the EMAS system (Eco-Management and Audit Scheme).
11. informing and educating consumers and businesses about the quality of certain products and services, promote the selection of sustainable products and services and develop environmental responsibility; product price must reflect its impact on the environment.
12. Encourage socially responsible business.
13. The introduction of sustainability in public procurement, promote environmentally responsible behavior and the best selection of products according to: best value for money (price, quality, availability, and functionality), environmental aspects throughout the product lifecycle and social aspects (poverty eradication, work conditions , respect for human rights).
14. Separate the link between waste production and increase economic growth and achieve a significant reduction in the quantity of waste generated through waste prevention initiatives, increase the recycling rate, remediate the existing landfills and build waste management centers, establish an integrated waste management information system.
15. Reduce the amount of finally disposed waste and hazardous waste produced by about 20% compared to 2000.

16. In accordance with changes in consumption patterns in the developed world, invest in scientific research and application of cleaner and environmentally efficient technologies with reduced use of natural resources, reducing emissions and waste quantities and risks to health and safety.
17. Develop tourism in accordance with construction criteria, spatial plans and accommodation capacity and efficient adjustment to restrictions and opportunities offered by protected areas, in order to preserve biodiversity, natural and cultural heritage.
18. Implement national economic measures that force economic subjects to pay for environmental impacts.
19. Establish financial mechanisms to reduce excessive consumption of resources.
What is common to the Republic of Serbia, and what is important to mention is that in addition to the existing and new brought important documents that need to achieve the goals of sustainable production and consumption.

CONCLUSION

In guiding towards sustainable development and progress in the Republic of Serbia, it is important, among other things, implement reforms and continue building an efficient state, raising the educational level of all citizens and building a society based on knowledge, foster a culture of research and investment in development and adapt to climate change. This will contribute to achieving sustainability sustainable production and consumption as well as the main sustainability goals that are systematized: Effective State - The state is efficient when, on the basis of the constitution, legal system and separation of powers maintained peace and security, protect the rights of citizens, stimulate economic growth and improve the quality of their lives and provides all the necessary public services. An efficient state has efficient institutions that represent and include all citizens. In addition, good political, economic and administrative governance must create and adopt policies while time answering to the public. For effective state is particularly important to constantly strengthen government accountability. In the Republic of Croatia requires: further development of efficient economic and financial management systems, strengthening the legal system, freedom of independent media and constant strengthening of the civil society which makes requests for changes.

Knowledge-Based Society / Education for Sustainable Development - a prerequisite for sustainable development of Croatian rapid and major changes in the education system: it must increase the number of educated population and level of education, and the education system must develop abilities and skills that will enable an individual quick and easy professional adjustment of the production structure, and prepare him for further learning. Knowledge is the key that opens the way to increasing the quality of life of citizens. Return on investment in knowledge greater than that of any other investment. Research shows that each additional year of average education level of the population turns into a production growth per capita by 4 - 7%. Experience shows that the growth of knowledge increases employment, which would surveyed countries, with declining unemployment, among other things, assist in strengthening social cohesion and reducing regional disparities. Education is a prerequisite for changing behavior and informing citizens about the core competencies to achieve sustainable development because it contributes to greater social cohesion and well-being through investments in social capital, creating equal opportunities, particularly disadvantaged individuals, and public participation. In accordance with the recommendations of the World Summit held in Johannesburg in 2002, the United Nations General Assembly in December 2002, declared the period 2005 - 2015 Decade of Education for Sustainable Development (Decade of Education for Sustainable Development - ESD). The resolution stresses the need for the integration of sustainable development, its values and practices in all forms of education and learning. United Nations Economic Commission for Europe (United Nations Economic Commission for Europe) in its Strategy for Education for Sustainable Development in 2005 stressed that education as a human right and an essential tool for good governance, informed decision-making and the promotion of democracy, can help translate a vision sustainable development into reality.

Topics of education for sustainable development are: poverty alleviation, provision of peace, ethics, responsibility in local and global level, democracy, justice, security, human rights, health, gender equality, cultural heritage, rural and urban development, sustainable production and consumption, corporate liability, environmental and nature protection, management of natural resources, biological and landscape diversity. The present educational programs at all levels of formal education need to be amended and customized to a greater extent include the principles and values of sustainability and interdisciplinary permeation of its three components.

Education for sustainable development is a lifelong learning process - it develops awareness of the impact of decisions that do not support sustainable development. Education, the choices and actions are guided in favor of sustainable development, a healthy and productive life in harmony with nature and with concern for social values, gender equity and cultural diversity.

Research and Development - expansion and accumulation of findings and knowledge depends on establishing a developed communication network for fast and efficient transfer of large amounts of collected data and information for the purpose of their quality application. The experience of successful countries shows that knowledge-based society much faster and more efficient application of advanced information and communication technologies must be accessible to all social groups and strata and embedded in the daily lives of the entire community, not only in the form of e-commerce and e-learning but also through e-government. The application of new technologies will enable the supply and demand of knowledge establishing successful communication at all levels of society and contributes to strengthening the structure of society in economic and social terms. If we want to be competitive knowledge, the use of information and communication technologies is not an alternative but a necessity. Progress will bring the technology itself - progress in, for instance, productivity, will be achieved only broad changes in the way that companies, organizations, public administration and citizens. This route is a strategic document of the European Commission 2010 (A European Information Society 2010) which promotes an open and competitive digital economy, with an emphasis on information and communication technologies, in an age of increasing competitiveness, allow to raise production and improve services, with growth quality of life.

In the global market, and those who manage to have the ability and capacity to innovate - create new products and processes, markets and industries. To ability and capacity for innovation, build and maintain it is necessary: to generate creative ideas that come from strong and diversified basic research activities; a creative, well-educated and motivated workforce and to create an environment that recognizes innovativeness and enables innovations to reach the market. It is absolutely essential that economic progress is based on research and development, science and engineering education and policies that encourage innovation.

In order to achieve this it is necessary to: increase funding for scientific research and scientific infrastructure in order to encourage the development of fundamental ideas which serve as the basis of innovation; to achieve close cooperation among higher education institutions, the more encouraged the best students; and ensure open interaction between students, scientists and engineers.

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FACULTY OF MANAGEMENT, METROPOLITAN UNIVERSITY

FAMILY BUSINESSES – FOUNDATION STONE FOR ECONOMIC DEVELOPMENT

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Abstract: *Family businesses are core of economic activity and foundation stone for economic development, not only in SEE region but also all over the world. International surveys on family businesses and identification of this type of organizations as the organizations of the highest importance made us interested in scientific approach used in treatment of family businesses in SEE region. The survey in Serbia, the first of that type at all, made us even more interested in regional approach – if family businesses are very important or extremely important factor in western economies, they are survival apparatus for economy of Serbia and economies in SEE region. Polling has been done on the sample of 200+ family businesses, resulting with practical guidelines for upcoming years and work on the topic of family businesses.*

Keywords: *family businesses, generations transfer, management, professionalization, sustainability, development.*

1. INTRODUCTION

Family businesses in Serbia share the values of the family businesses worldwide, including crucial elements which make this type of business organizations as crucial factor of economic heart rate of each single country in the world. These values make long list of pro and contra arguments, but we will keep on three non-doubtful core values strength of interdependency which focus the views on long-term context, feeling of stewardship as a familiar mission instead of ownership as a corporate goal and cohesion designed not only by emotional context and need for love, but also by basic live values and survival need. That is exactly how the owners and managers of Serbian family businesses described their advantages in the research on Serbian family businesses implemented in 2014.

Owners of Serbian family businesses act and think similarly to the owners of family businesses in Western European countries and worldwide, expressing over 70% belief that familiar identity of their business makes comparative advantage and develops the strengths which do not exist in non-familiar businesses.

Such optimism generated around the mission of the company opens the opportunity to do a *more in morning hours than pessimistic team would do in entire day*.

In fact, work on the topic of family businesses in Western Balkans region firstly made us realize an important note about this topic in general. The tradition of entrepreneurship and the context of stewardship instead of ownership is pretty old in Western Balkans countries, and it has been hit many times by political contexts, wars and political arrangements, at the same time keeping the fire open and keeping the business going on. Some of crafts, companies and businesses have survived for several centuries, spiting and doing what exactly looks like impossible.

Research results are pretty aligned with similar researches implemented at international level, opening the space for scientific work and development of the tools to encourage and develop the concept of family businesses. Such tools are pretty developed and available, with need for modification and harmonization with reality in Serbia and in the region of Western Balkans.

2. RESEARCH IN SERBIA 2014

The first outputs of the research on family businesses implemented in 2014 show that majority of family businesses in Serbia are pretty young, over 75% of them have been found by current owner and still did not pass transition process. However, 17.3% of them have been inherited by earlier owner or founder.

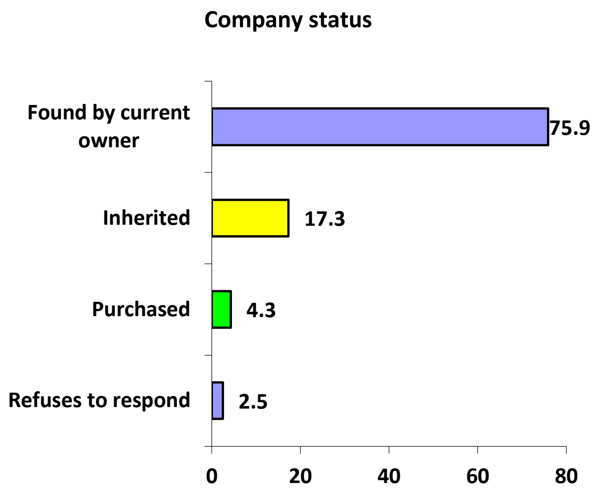

Image 1: Status of family businesses

In regard to the age of family businesses in Serbia, what was discovered is that most of the businesses are in the age of 0-19 (57.4%), while 35.8% of them have been found before more than 20, but less than 50 years.

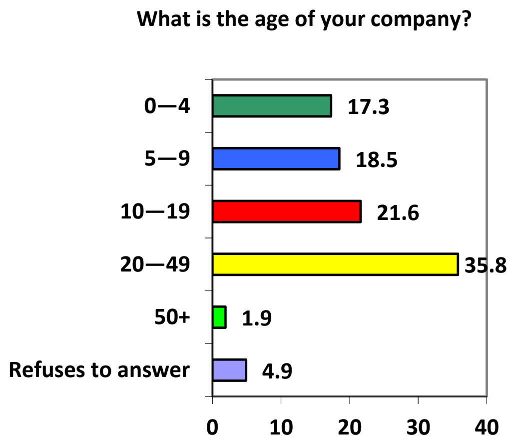

Image 2: Age of family businesses in Serbia

In regard to the age of family businesses in Serbia, what was discovered is that most of the businesses are in the age of 0-19 (57.4%), while 35.8% of them have been found before more than 20, but less than 50 years.

If we assume that the founders have been founding the companies in the average age of 33 years, thus means that very high percent of the companies will face transition and generational transfer in upcoming period, or they were supposed to do it in previous 5-10 years.

If we compare previous two images, it is clear that the transfer in regard to ownership rarely happens (17.3%), although 35.8% of the companies are in the age of 20-49.

When asked to express the opinions in regard to their biggest business challenges, the owners and managers of Serbian family businesses clearly posted on the first place high duties towards the state, i.e. unfavorable business climate.

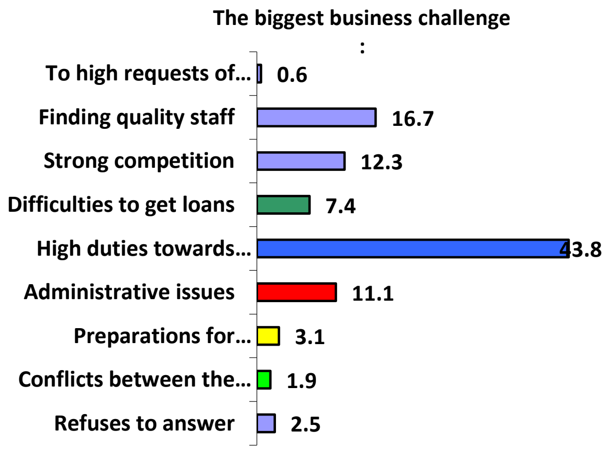

Image 3: Business challenges of Serbian family businesses

Answer on this question is the best possible invitation for the Government and governmental instruments for our further project activities.

At the same time, 71.6% of family businesses owners expressed opinion that the authority in Serbia fails to initiate the measures needed to improve business climate in the country, while only 6% of the respondents stated that the state works on satisfactory level.

3. FAMILY BUSINESSES KEY CHALLENGES

According to the leadership lessons learnt from the biggest family businesses in the world and published by HBR, strategic orientation and accuracy in definition of the steps which leads towards resources development are crucial challenge of the family businesses.

The context of family gravity and difficulties in making fast direction changes make family businesses even more dependable from those steps, and one of the first consulting practices is to introduce strategic programs for short-term period.

According to the research implemented by “Pro Educa” Education Centre, strategic orientation of Serbian family businesses is more self-understandable than part of clearly defined vision. Namely, when asked whether their enterprise have strategic program for upcoming three years, 62.3% of the managers answered negatively, but when asked about the strategy of work in upcoming 12 months, they said that it is focused on growth and expansion, consolidation and survival (91%).

Investment criteria are focused on sales, as the way to get faster revenue, bigger cash flow and more financial capacities for changes.

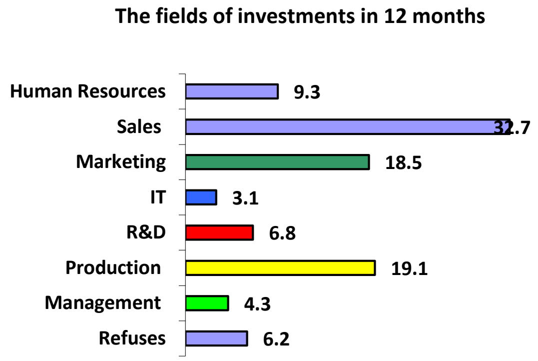

Image 4: The fields of investments in 12 months

Besides sales, it is evident that investments priorities are in production and marketing.

Regarding ownership strategy and the vision about future owner of the company, the respondents expressed logical trend of family businesses' intend to keep the company in family ownership, either on 100% or on a little bit lower level.

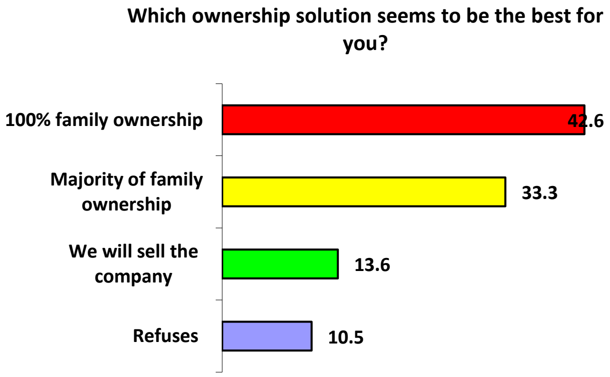

Image 5: Ownership solution

However, the respond of majority of family ownership illustrates awareness of the owners/managers that share of ownership is also acceptable idea for development and progress of the company.

Having in mind specific points related to family businesses, we have prepared the list of questions related to the family members and their role in the company, as well as the questions about familiar relations, share of roles and responsibilities and best practices in family functioning within the company.

The topics of engagement of non-family managers, professionalization of the companies and opening of family businesses for non family staff are somehow present, but obviously family businesses in Serbia are still not on clear ground about this topic. On the other side, it seems that the talks on testament, family statute or building the managing structures in Serbian family businesses are obviously still not present on significant level in the family business in Serbia.

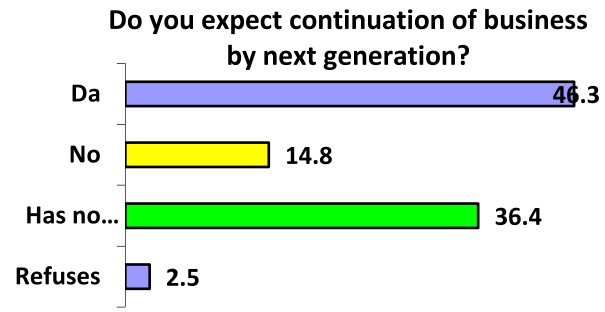

Image 6: Opinion about engagement of next generation

46.3% of questionned owners and managers expect engagement of next generation, while 36.4% of the respondents have no opinion about this topic. 14.8 % of them do not want to see engagement o next generation in their businesses.

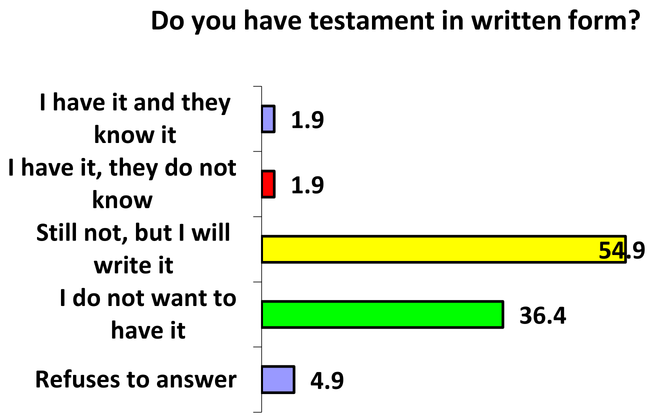

Image 7: Is there a testament

3.8% of the family business owners have written the testament, while 54.9% plan to do it in the future. Every third respondent clearly stated that he/she does not plan to create the testament.

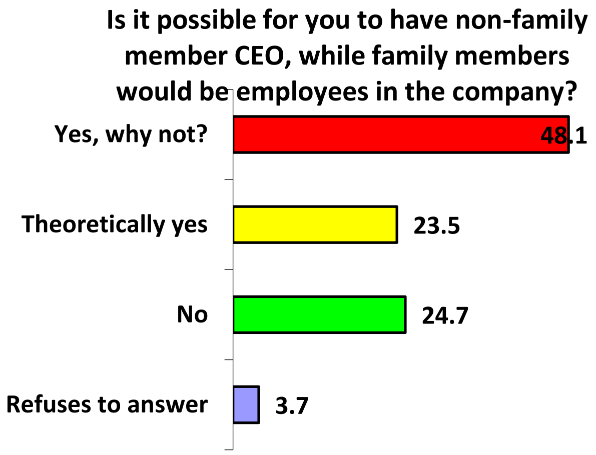

Image 8: Possibility to have non-family member as CEO

Almost half of the respondents have no arguments against engagement of non-family manager, but 23.5% of them warn that it sounds as good solution, but it is difficult to implement in in practice.

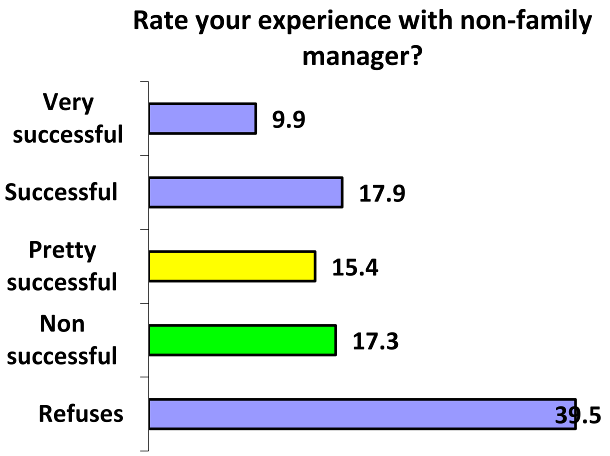

Image 9: experience with non-family manager

Only 9.9 % of participants in the survey have had negative experience with non-family manager in the Company. However, 39.5% of them refused to answer this question.

4. CONCLUSION

Family businesses in Serbia are relatively young and motivated organizations, but mature enough to face all the challenges typical for this type of organizations. The tradition of entrepreneurship and the motive of familiar business keep such organizations in the world vital for decades and centuries. However, unfavorable ambience for business, high administrative costs and duties, ambience instable for investments and lack of strategic focus make those organizations as vulnerable. Family businesses share the destiny all over the world, and Serbian family businesses are already in complex position regarding ownership issue and generational transfer since there are no testaments, there are no open talks and professionalized processes of introduction of new generations in family businesses.

Research results are pretty similar with similar researches on international level, just opening space for intensified scientific work targeted on encouraging and developing the tools and concepts for family businesses.

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MILLENNIALS RESHAPING BUSINESS COMMUNICATION

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Abstract: *The modern age of high technology and constant innovation provides an opportunity to disseminate information instantly, 24 hours a day, 7 days a week. Stakeholders are completely connected, they expect transparency and they desire and seek more information from the companies and brands. As the information are disseminated through various channels and sources, it is necessary for companies to secure their place and presence across all channels used by stakeholders. These are precisely the points in which the companies build their identity. The companies build relationships of commitment and loyalty with the target audience through integrated corporate communication. The process of integrated corporate communication requires full cooperation of the key disciplines of public relations and marketing communication. It is based on the benefits of synergy and recognition that communication integrity is always better than the simple sum of its separate parts.*
In this paper, emphasis will be placed on a very important segment of integrated corporate communication: integrated business communication.

Keywords: *integrated business communication, Millennials, process, technology.*

1. INTRODUCTION

Companies consider members of the Millennial generation to be an extremely important market segment, characterized by myriad of members, large purchasing power and gaining of primacy in the labor market. Therefore, it is necessary to pay special attention to the synergy of integrated corporate communication and parameters which it depends on. In the first place, there is the level of development of business culture, then the development of the model of internal and external communication, corporate identity and developed and efficient models of communication in conflict and crisis situations and developed functioning of public relations.

Members of Millennial generation use digital technology and social media as an extra hand and they represent the first generation that is always online [1].

In order to establish relations based on loyalty, trust and constant stable positioning of the product/services or organization in the minds of the target audience, it is essential that companies integrate all internal and external communication activities.

As the implementation of the integrated corporate communication concept is largely dependent on the development of communication technologies as well as on developing of internal, external and business communication as its most important components, it is necessary to include all current models of communication in the very system of corporate communication, starting from the web service, through social networks and interactive services.

2. CHARACTERISTICS OF INTEGRATED BUSINESS COMMUNICATION

The quality of communication is determined by the degree of growth in business performance. Companies that have developed a good and effective communication system are far more successful than those without that system. In the well-established relationship between superiors and subordinates, the level of quality of the relationship is directly dependent on the nature of communication relationships.

In business, effective business communication is the basis for the development and realization of ideas, leadership, guidance and motivation of employees. A complete organizational and functional structure of the company is based on the exchange of information, plans and ideas, creation of databases, meetings and research. All of the above represent different forms of business communication.

"Communication is an act of influencing and directing others to respond in a manner represented by the sender, or the relationship between the sender of the message and the target audience. It is about interpersonal and interorganizational exchange of materials, ideas, understanding and information". [2]

Management communicates on business policy, coaching, facts and achievements in a way ensuring that all employees will understand the message and adopt it. Effective business communication is very much alive within the company, precisely because employees are better motivated if they clearly recognize the appropriateness of the set goals.

Well-organized business communication at all levels within the company and toward the target audience outside the company, inspires even disgruntled and uninterested users to change their minds and form a good opinion of a company that communicates.

Author Reinsch (1996) says that business communication is a practical-science. He believes that approaches ivory-tower (knowing-why) and a trade-school (knowing-how) are sufficient, so both knowing-why and knowing-how elements should be present in business communication [3] [4].

Communication abilities include certain knowledge and skills such as: effective communication with all levels of management, certain experience or training in verbal and written communication, ability to prepare special analyses, conclusions of the research, as well as the ability to present ideas, companies and products through business communication, and to establish positive relationship with customers. It can be said that the success of very business operation depends directly on effective business communication.

The process of business communication consists of the following elements:

- Context - the topic that a message must contain
- Sender - a source and a sender of information
- Message - a meaningful context and detailed information
- Media - the channel through which the message is sent to the recipient
- Recipient - a decoder of a received message and of an information included therein
- Feedback - the final phase in which the sender receives a response from the target audience in the form of approval or criticism

In addition, an effective business communication is based on the knowledge of the so-called "5W" - (When?, Who?, Where?, Why?,What?).

Companies' ability to build solid relationships based on the effective and efficient exchange of information between employees, customers and clients, vendors and distributors and other businesses is called business communication. [5]

The role of integrated business communication in any type of organization is vital not only for the structural functioning but also for the overall reputation of the set of all activities directed toward the target audience. Basic communication model demonstrates in the following figure the elementary structure of functioning. [3]

Figure 1: Basic communication model of integrated business communication

The source is an individual or an organization as the sender of the message/information to the audience.

The media is used as the message/information carries, or as the means used to ensure that the message/information has reached the recipients, i.e. the target audience.

Varieties can be as follows: voice mail, an electronic message - e-mail, fax or Web, phone, text message on paper - a letter, memo, poster, picture, visual message, audio message, nonverbal communication - smell, touch, body language signs, colors.

Recipient - A person or a group or an organization receiving the information.

Feedback - Source/sender cannot know whether the communication is successful until it/he receives any response in the form of activity or changed behavior.

The problem rests with the fact that integrated business communication is rarely as simple as such suggested by the models. There are several different types of media that are used for the transmission of message in integrated business communication, and it highly depends on the source whether the message recipient will understand its contents precisely as the sender has expected.

The degree of understanding to be reached between the participants in integrated business communication also depends on "interference" in the transmission, which can make the sent message seem insufficiently comprehensible or substantially altered. Communication barriers are created in multiple manifestations, which include the following:

- Language barriers
- Technical contents

- Superficial interpretation of sender's intentions
- Inadequate communication feedback
- Impact of emotions (different understanding of the message if any of the participants in the communication process is upset, and the like)
- Unequal education level of the participants in the communication
- The quality of information sent
- The use of inadequate communication channel (media)
- Lack of confidence and doubt in the integrity of the message sender
- Cultural differences
- Poor ability to receive the information
- Unclear position or status of the information source

As a result of impact of the communication barriers, the communication model scheme can be summarized as follows. [3]

Figure 2: Communication model scheme as a result of impact of the communication barriers

Kala defines effective communication as an interactive two-way communication process resulting in an action or a decision (even if it is not the intended action or decision); effective communication can be distinguished from communication (two-way exchange of messages without action), and informing (one-way sending of messages) [4].

Figure 3: The "7 Cs of Effective Business Writing"

The efficiency of integrated business communication depends on the seven basic principles of the so-called 7C. First one is conciseness, which is a prerequisite for a message to be understood and easily attract attention; Second is concreteness, which means that the meaning of the message must be such to make the message clear and as short as possible; Third is clarity, meaning that the message must carry an explicit opinion which cannot cause confusion for the recipient at any level; Fourth principle is completeness, which is also very important for the recipient in order to have a clear picture of the meaning of the message; Fifth is courtesy, expressing respect for the recipient of the message and often giving certain privileges; As for the sixth, the message must be "literate", meaning it has to comply with the spelling and language rules. The seventh principle affecting the efficiency of integrated business communication implies that the message has to take into account the authoritative views and opinions, and must not convey personal position. [5]

Companies seeking to improve their business must systematically identify all the parameters of integrated business communication in a way that provides a top priority for the information process. Such orientation implies not only skills and knowledge but also the commitment to the intent to ensure that every segment of business policy, procedures, systems and processes interact throughout the company and toward the target audience.

Functional interaction in business communication between different organizational units within the company and toward the target audience, lead to comprehensive engagement of full potential in which marketing has the power of "strategic arms". [6]

3. TYPOLOGY OF BUSINESS COMMUNICATION

Understanding of the four different types of integrated business communication contributes primarily to better understanding and better interaction with superiors, co-workers, colleagues and clients. Understanding of own communication style and typologization of styles used by other participants in the communication process, improves communication in a way that it can be adapted and modified in certain situations, as required.

Communication styles can be primarily divided into "light" approach in the communication process which is progressing step by step, then direct and logical approach supported by arguments and evidence, compelling style and the style of a "feeler" or a tracker. [7] This communication approach also has most flexible adaptive potential" (Peschong, 2011).

Identifying of communication typology is of great importance for the successful functioning of integrated business communication, especially toward the target audience.

By simply using the words such as: I hope, I feel that, I appreciate that, I understand, in any segment of integrated business communication, helps achieve the effects of respecting the recipient of the message and its absolute independence and logical reasoning, while also achieving the goal of making the recipient accept the sender's message as completely compatible with own attitudes. The persuasion is here not based on the logical approach, but on the emotional impact.

Logical type of communication is most frequently used in offices, business premises and the sources thereof are usually managers and those who make strategic decisions. The required and necessary effectiveness of business communication is achieved by logical order in decision-making and forwarding clearly formulated messages that are always supported by information and documents. This concept of communication model includes clear instructions from the sender of the message, full understanding of the given guidelines and feedback based on the same principles and representing a strategic basis of a teamwork.

Since the integrated business communication is an essential framework which regulates functioning of any type of organization and without which it would be impossible to maintain strong relationships between functional organizational units within the company/organization, employees and the target audience, the following typology implies division into external and internal business communication. The way in which integrated business communication is organized and the level of successful performance thereof, have direct impact on the success of very business operations.

External business communication is any communication that takes place between the company and customers, vendors and persons not directly involved in the process of production or service rendering. Everything related to external business communication involves strategic effort to establish communication with the widest possible audience by creating the possibility for the consumers to understand how to establish communication with the company. Advertising and marketing campaigns most commonly use tools of external business communication.

The strategy of external business communication primarily involves clear views on the type of a corporate picture the company wants to present to the target audience. The approach is accented emphasizing top professionalism but also humane approach in all business segments. Customer satisfaction contributes to success of external business communication since communication between satisfied customers represents very important proof of successful implementation of business communication in the target audience.

Internal business communication is actually "business management": the way in which employees interact with each other in order to overcome conflicts and other problems in interpersonal relationships, whether there is an open system in which employees can, in a relaxed manner, express satisfaction or dissatisfaction with the way in which the organization or its individual units operate, whether they seek instructions from their superiors to solve dilemmas, etc.

Internal business communication is usually more severe than the external one, because its functioning needs to be balanced between different personalities and implemented on a daily basis.

Each individual has different opinion on how something should be done and arranged within the company, and every situation in which things are left to the discretion of individuals may have unexpected consequences for the company.

Clear and unambiguous instructions, precise deadlines and, on the other hand, open possibility for communication between employees and their superiors, adequate reward and recognition for their work, are the basic postulates of the functional implementation of internal business communication.

Good communication is important, because organizations are made up of people; in other words, communication is business essence.

4. MODELS AND FORMS OF BUSINESS COMMUNICATION

As a tool, communication provides a great deal of flexibility. [8]

Integrated business communication must be observed through global perspective. Given the development and growing application of electronic communication channels, it is no longer possible to talk about local or national firms, but only about organizations on a global level. The reality is that organizations no longer have a choice. Once they become participants in the electronic arena, they automatically turn into global brands in the "new economy".

This "globality without remainder" creates a two-way situational communication scenario for business decision makers:

- integrated communication, which is created and applied at the level of a corporate brand and
- integrated marketing communication that takes precedence at the level of individual brands" (Kitchen & Schulz, 2003). [9]

Communication in business organizations provides the critical link between key functions. Successfully implemented models of business communication assume that the following conditions are met: in verbal or written communication objectivity is clearly articulated and recognized, clear message is sent, centralized or decentralized administration is adequately assessed and appropriate business communication is accordingly implied, message recipients are motivated, receptivity is provided and appropriate channels (transmitters) are selected in business communication.

Environmental changes and business complexity in the 21st century make business communication very important business segment. Status of the organization, diversification of employees and an increasing participation of expert teams in the work, make integrated business communication become the basis of the organization success.

The fact is that autocratic leadership models have become obsolete and that they belong to past generations and have been replaced with participatory management models in which integrated business communication is the key basis of building trust, promoting understanding, encouragement and motivation.

Diversification of business operations and the global market imply that employees express mutual differences in age, ethnicity, race, psychological abilities, gender and sexual orientation. Respect for diversity is not just a matter of social responsibility, but is, primarily, an economic issue. Companies thrive only if they are able to fully engage creativity, talents, experience and future prospects of such a diverse base of employees.

In a recent study of the Fortune magazine, of 1000 companies as much as 83 percent reported that they implemented teamwork and that all the teams were formed and tasked to deal with business communication with the aim, through work teams, of "capitalizing on creative potentials of diversified workforce, directly dependent on communication." [10] Today, messages, methods and channels can be added or subtracted depending on the audience. [8] Hence, companies use different methods and channels while communicating with different target groups.

The globality of world economy has a new meaning, thus the performances of integrated business communication have become very difficult in several different segments given that globality has explicitly indicated the necessity of a new approach and new solutions to the problem.

Fugere, Hardaway and Warshawsky, consultants at Deloitte Consulting, implemented the software called "Bullfighter" that stores jargons in the database and "Bull Composite Index calculator" that registers the number of jargon terms used in business communication. [11] These results have indicated the need to overcome communication problems, i.e. misunderstanding, when using jargon in different countries.

Global integrated business communication is challenging in many ways, thus in this field as well, given that certain jargon terms used in communication have one meaning in one part of the world, and quite different meaning in another part of the world.

A special contribution to solving the newly emerging dilemmas in the field of integrated business communication was made by the authors Brian Fuqere, Chelsia Haraway and Jon Warshawsky in their report. In a book titled "Why Business People Speak Like Idiots: A Bullfighter`s Guide” published by the Free Press, New York, the wrong steps in business communication were analyzed: traps of ambiguities, traps of anonymity, difficult sales and traps of boredom and monotony. The authors emphasize that the "jargon, eloquence and bypassing the truth are indispensable "spices" of modern business communication, but at the same time are its greatest enemies." [12]

For managers, international experience in integrated business communication has shifted from the desirable to the necessary and crucial. The Study conducted by the Columbia University School of Business emphasizes the necessity of international business communication experience for managers of the the 21st century.

The ability to conduct business under conditions of market globality represents a challenge which sees the only solution exclusively in developed integrated business communication. Organizations want to negotiate, buy and sell, to merge and unite and thus increase their business share on a global level. In all this, communication is the most important factor.

Just because of its inappropriate name (brand name), many products have failed on the international market: Olympic Roto (a copier) failed in the state of Chile, just because "roto" means "broken" in Spanish; Chevy Nova failed in Puerto Rico because the word "nova" means "is not going" (this is automobile), then Randan failed in Japan because the word "randan" in Japanese means "an idiot". The product naming represents the first level of communication.

5. PARTICIPANTS IN INTEGRATED BUSINESS COMMUNICATION

Computer technology has major influence on the overall business environment and, certainly, on business communication. Global market that has evolved into business environment in which all companies operate, sometimes not as conscious choices and decisions of their own, certainly encourages the growth of productivity, but on the other hand often ignores the humane point of view in automated companies and often leads to various forms of employee dissatisfaction.

As the computer technology continues its rapid growth, it certainly affects more seriously the models of companies’ communication. Successful implementation of integrated business communication often depends on the degree to which "human factor" is prepared and ready to change.

Apart from the above, the characteristics and expectations of the members of Millennial generation should be borne in mind.

Author Sweeney suggest that Millennials expect anytime - anywhere communication. Also, they prefer interactive full-motion multimedia, color images and audio. [13]

Author Housel states that: "Development of programs that synthesize research, trainings and evaluation of integrated business communication and underline the appropriateness of its effects, is a very important part of business success." [14]

On the other hand, the author Weinberg points out that "the way in which the companies personify communication results in company's ability or inability, success or failure, financial profit or loss". [15]

Managers have to face the challenges of formulating new strategies of integrated business communication and, on the other hand, to apply the first rule according to which successful business communication is not a one-way process. Numerous participants in integrated business communication show that communication is above all a human relationship and is essentially much more than mere information sharing.

The first step towards successful realization of business communication is to gain the attention of people the communication takes place with, which requires the removal of each source of "interference" in either the information channels or in the form of other external impact, as well as mental or emotional discomfort, personal problems and negative attitudes.

Milica Slijepčević points out that " in business, effective business communication is the basis for the development and realization of ideas, leadership, guidance and motivation of employees. Complete organizational and functional structure of the company is based on the exchange of information, plans, ideas, creation of databases, meetings and research, which altogether represents business communication in a variety of forms. " [16]

Expression of respect for the participants in business communication is a prerequisite for gaining attention and, in a specific way represents an important catalyst for the communication process. Empathy makes business communication more successful, provided that the rule according to which the word concern is replaced by the word understanding is successfully applied.

The proper relationship between sender and recipient of the message, which indirectly increases the perception and improves the level of understanding, implies encouraging of the free flow of information. The ideal result is achieved when the message recipient has completely adopted the message and has further become sender of that message. Assimilation of the concept presented by management or by other employees to the management ensures active participation in the process of business communication.

Difficulties in functioning of the theoretical model of integrated business communication in practice result in failure to accept good ideas or to apply them in an adequate manner.

Advantages of the applied integrated business communication process are evident in every aspect of business operations in any organization: in conflict and crisis business situations, in the level of business skills, in presentation skills, in the extent and degree of impact on the global market, in negotiation skills, in psychology of sales, in user service, in media skills, in leadership development and in personal development.

"Speech has allowed the communication of ideas, enabling human beings to work together to build the impossible" (Hawking, 2010).

6. CONCLUSION

Finally, we can summarize that integrated business communication can be any type of communication that is used to build a partnership, to gather the intellectual sources of information, to promote ideas, products, services and organizations - and thus to create objective values of business operations.

It is also worth mentioning that integrated business communication unites communication flows and makes them individually compatible in the following segments:

- Internal business communication (interpersonal communication, business documentation, crisis management) and
- External business communication (presentation, sales, negotiation, users service and cooperation with the media)

As members of the Millennial generation are slowly gaining primacy in the labor market, it is necessary to adapt business communication to their wishes and needs.

Of all the previous generations, members of the Millennial generation use digital technology to the fullest extent, thus it can be said that such a "digital world" represents the biggest opportunity for companies to send a message that will reach them and convince them to buy their product/service.

What can be done?

Companies can design the communication tools appropriate for Millennials. Also, it is important to manage to create instant reply to all stakeholders' questions via their preferred method of communication, by using current technology to improve communication process.

Critical success factors of any organization represent the very process of implementing integrated business communication in the organization, and communication skills of the participants in the implementation process. This paper represents the basis for future research in the field of integrated business communication and designing and implementation of new models tailored to members of the Millennial generation and to the current technological changes.

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ASPECTS OF SUPPORT MANAGERIAL DECISION MAKING WITH REFERENCE TO COMPUTING WITH WORDS

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Abstract: *The study of the process of decision-making in enterprises is motivated by its importance, a high degree of complexity and increase of its relevance, as well as the fact of a lack of adequate support. Modern business demands faster action and decision making, with little reliable data.*

There is the need for significant support for solving unstructured and semi-structured problems, business decision making in almost all areas, for example in the field of analysis of process performance, customer satisfaction, supplier selection, location of operations, technology choice, production program, planning and scheduling, inventory control and other parameters and improvement of the majority decision, not only at the level of strategic management, but also the middle and lower management levels.

In particular, aspects of the problem of decision-making regarding the vagueness and fuzziness of information, especially the middle of the stage, are discussed.

Keywords: *operations management, decision making, fuzzy theory, computing with words*

1. INTRODUCTION

Decision-making is a key activity of the managers and the essence of management, permeates all management functions - planning, organizing, management and control. However, in the decision-making process, the manager is faced with many problems, primarily the problem of short time limits for decision-making and the so-called information gap that arises on the one side, due to the lack of sufficient information within the organization and on the other side, due to the lack of quality information. The information on which decisions are made, are largely imperfect, i.e. indeterminate and / or fuzzy. Vagueness and fuzziness can be treated as incompleteness, lack of information, but they are certainly real feature of many information.

This explains the theory of H. Simon, the theory of bounded rationality [11], according to which the decision-makers in real terms, with a number of constraints, around the problem instead of looking for the optimal decision, in most cases satisfy, usually the first feasible solution, which will enable the realization of the set goal.

The paper consists of the following units: (i) introduction, (ii) aspects of the problem of managerial decision making, (iii) the problems of support managerial decision making, (iv) the classification of the problem of decision-making, (v) support managerial decision making by applying computing with words, (vi) conclusion and (vii) the reference.

2. ASPECTS OF THE PROBLEM OF MANAGERIAL DECISION MAKING

Modern business requires a multidisciplinary and multicultural teams, as well as multi-educated people with flexible specialization, so-called. hybrid managers who are able to establish a synergy between fundamental knowledge that significantly affect business: marketing, operations (manufacturing of products / services) and information and communication technologies, as technological dependent operations (primarily from information and communication technology), but without customers meaningless .

Today is sought symbiosis more competencies - the ability to solve problems and not only that, but also to anticipate future risks and preventive resolve and ability of innovative thinking.

Aspects of problem solving and decision making

Decision-making is one of the most important management activities, it is synonymous with management. Decision-making may be determined as a selection of the operating mode between multiple alternatives, or process of problem identification and problem solving process.

Figure 1 presents the aspects of decision-making of the perpetrators to managers at different levels, some characteristics of the decision making process, as well as the tendency of enriching the job by assigning the rights to autonomy and decision-making which increases the motivation of employees. The process of decision-making can be classified and such to: reactive (post factum) and proactive decision making; individual and group decision-making; strategic, tactical and operational.

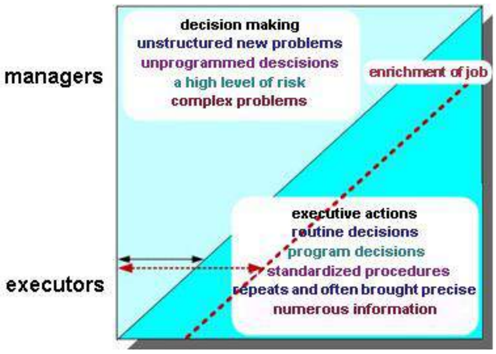

Image 1: Characteristics of decision-making and participation in decision-making

Decision-making is related to problem solving. The word "problem" shows the difference between an existing situation and some of the desired situation. The problem of reducing the cost of material, for example, indicates a difference between the current costs of the material and the desired level of material cost, [31].

According to the Society for Judgment and Decision Making [26] theory of decision-making is the process of specifying the problems or opportunities identify alternatives and criteria, evaluation of alternatives and selection decisions between alternatives. The objectives of the decision making process are: optimization (finding the best possible decision) maximization (finding a solution that satisfies the largest number of criteria) and satisfying (finding a satisfactory first, a possible solution). The steps in problem solving are shown in Figure 2.

Let us mention here the attitude of Peter Drucker progress to be obtained only by taking advantage of opportunities, not solving the problem. When you solve problems, all you do is guarantee a return to the previous state.

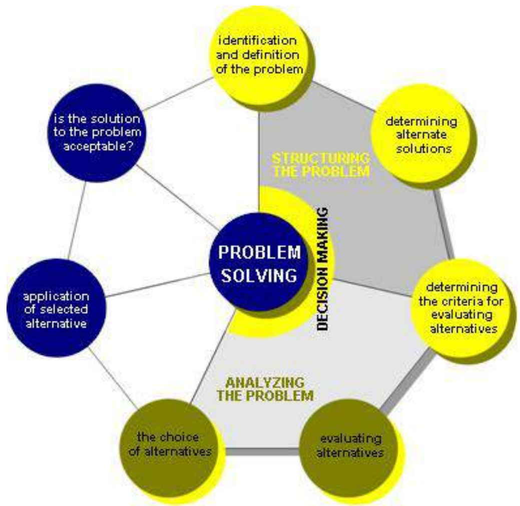

Image 2: The relationship between problem-solving and decision-making

3. PROBLEMS OF SUPPORT MANAGERIAL DECISION MAKING

Some aspects of the complexity of the business and production systems, and management tasks are shown in Figure 3.

The manager, in his practice, faced with two types of problems, namely the system: well-structured problems / systems (Model Based Systems) and poorly structured or weakly formalized problems. In the first case it is easy to make a mathematical model and apply it. In the second case (due to the complexity of the problem) mathematical model is difficult or inefficient to make. To solve the problem for which there is no good mathematical description, fully defined theoretical solutions, i.e. which cannot be effectively solved by conventional computer systems, using the methods of artificial intelligence. Most technical systems and business processes - production systems are poorly structured systems.

Another important aspect of the problem is related to the information on which to make decisions that are highly imperfect, i.e. vague and / or fuzzy. The vagueness and fuzziness can be treated as incompleteness, lack of information, but they are certainly real feature of many information. Fuzziness refers to the content of information that have vague, imprecise boundaries, and the vagueness of its truth.

There are also a large number of practical problems, i.e. algorithmic model whose time work is not limited polynomial function of dimensions of the problem n, but rather a form of function c^n, $(c > 1)$, they are called exponential, bad algorithms that for sufficiently large n can be made for a reasonable time. Group of problems that cannot be solved in polynomial time using deterministic method is called NP problem area.

To solve such problems apply heuristics. Heuristics are a finite set of steps - an algorithm of polynomial complexity - which are obtained by solving the problem of optimizing (without guarantee of optimality, usually without assessment of their quality) for a relatively short period of time, where, therefore, sacrificing optimal solutions for the benefit of the speed program execution, i.e., its applicability.

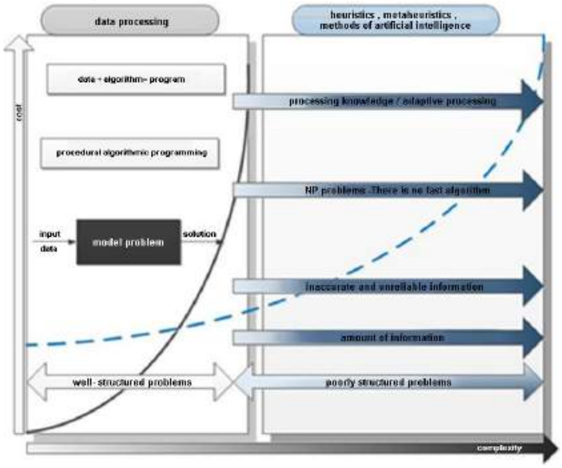

Image 3: Some aspects of the complexity of decision-making in production - business systems

Development of classical heuristics (that are customized to solve specific, individual problems) led to the development of universal heuristics or so metaheuristics which are based on the general optimization algorithms - involve the use of iterative processes in order to improve, repair an existing solution, and can be applied for solving many types of problems. Featured metaheuristic methods for example: genetic algorithms, neural networks, tabu search, variable neighbourhood search, simulated annealing, ant colonies, and the like.

Another important aspect of the problem is related to the amount of data, so-called problem of large amounts of data (Big Data). This area is explored in the context of business intelligence (Business Intelligence - BI), which integrates methodologies, technologies and platforms data warehousing (Data Warehousing - DW), OLAP (Online Analytical Processing) data processing and data mining (Data Mining - DM) enabling coming to useful management information from the data on the operations which are dispersed in different transactional systems, and come from different internal and external sources.

Big Data & Analytics - problems of analyzing information in real time are solved by the application of a database of parts, which can be searched in parallel and / or caching algorithms, such as the so-called in-Memory Computing etc.

4. CATEGORIZATION TROUBLE MAKING DECISION

Within the framework of decision making theory developed numerous techniques and troubleshooting procedures, which are, however, due to the complexity of research and diversity and specificity of tools, methods and demands of the customer, unsuitable for practical use.

Area of decision making can be divided into a number of categories, such as the consequences of the decisions / alternatives: decision-making in terms of certainty, decision making under risk and decision-making under conditions of uncertainty; according to characteristics of problems, Figure 4:

- Multiple Criteria Decision Making (MCDM) where it belongs for example: a method of simple additive weight - Simple Additive Weighting Method (SAW), Ordered Weighted Averaging (OWA), maximin (pessimistic) method, maximax (optimistic) method, lexicographic method, Analytic Hierarchical Process (AHP) method;
- Multiple Objective Decision Making (MADM) where it belongs for example: Goal Programming, Linear Programming;
- Group decision making - Multiple Experts Decision Making (MCDM), which belongs: for example Game theory; Social Choice Theory - access to the voting mechanism that allows the majority to determine the selection; Group decision using expert judgment - which can be classified into categories: methods for generating ideas, for example: brainstorming; methods of collecting ideas, for example: surveys, Delphi method; simulation models, which include for example: Cognitive maps, Six Thinking Hats, Successive Proportional Additive Numeration (SPAN).

Group decision making is necessary for solving problems, especially for complex problems.

This includes most of the tools from the group Q7 - Seven quality tools and M7 - Seven management tools that support the different steps in solving problems (information gathering, problem identification, problem analysis, and the like), as well as the for example: SWOT analysis, FMEA methods and others.

According to the characteristics of the information may be different, and so-called Hard Decision Systems and Soft Decision Systems. Soft systems of decision-making applies qualitative methods which in practice means the use of imprecise and linguistic entity.

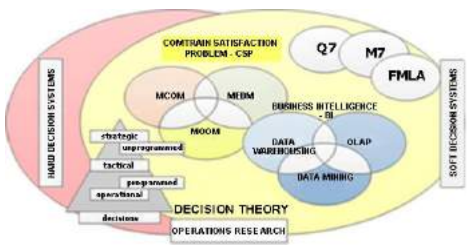

Image 4: Categorization trouble making decisions

5. SUPPORT OF MANAGERIAL DECISION MAKING BY APPLYING COMPUTING WITH WORDS

One of the problems of decision making related to the vagueness or their fuzziness of information. Since most of the events, processes, concepts in the real world has the property of intensity, this is an important practical problem and successfully solved using the modeling phase of the system. Figure 5 shows the key characteristics associated with computing with words.

The so-called theory fuzzy sets (Fuzzy Sets) theory and fuzzy logic (Fuzzy Logic) by the mid 60-ies of the last century, a professor of the University of California at Berkeley, USA, L. Zadeh, [17] as a new way to computer models a real problem in the way the people who do it. This approach is characterized by the introduction and use of imprecision and gradualness and the use of qualitative descriptions of concepts and events. Professor Zadeh is the creator often quoted the principle of incompatibility, which reads as follows [18]:

With increasing complexity of the system, our ability to reveal precise and at the same time significant positions on his behavior decreases until it reaches a certain threshold, after which precision and significance of each almost lose meaning,

or

With increasing complexity, precise positions lose importance, a significant stands lose precision.

So, what's a closer look at the real problem, the solution becomes more stage, Figure 5.

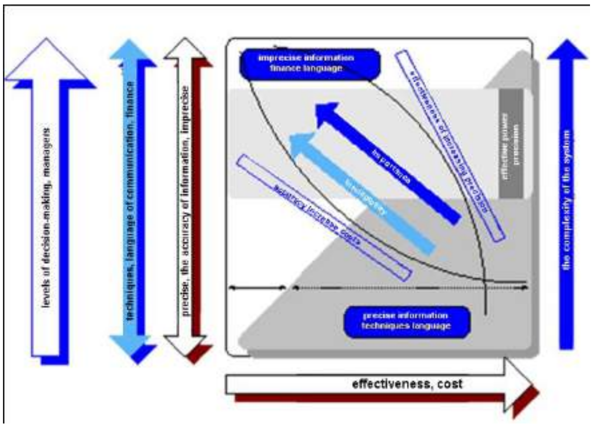

Image 5: Some features associated with vagueness and fuzziness of information

Due to the uncertainties related to the words, every person who uses the words may have a different definition of value carried by word. In such cases, the linguistic models provide an alternative because the processes described in natural language.

Computing with Words (CW or CWW) is a methodology for reasoning, computing and decision making with the information described in a natural language. Area practical application is broad, for example: Human Resource Management [32], [29], the choice of location of objects [28], inventory management [12], the selection and evaluation of suppliers [10], evaluation of projects and investments [33] and so on.

Table 1 shows the importance of computing with words through the level of information processing in the human communication.

Table 1: Levels of information processing in the human communication, [1]

Level	Information Processing	Examples
I Senses	Symbol	Sound, line, color
II Recognition	Signal	Language, contours (shape)
III Understanding (of micro knowledge)	Local meaning	Meanings of words, single objects
IV Understanding (of macro knowledge)	Global meaning	Meanings of sentences, complex objects
V Understanding (of emotions and intentions)	Impression, conception	Association, imagination, the arts, personality

Review of the decision-making in fuzzy environment

In the 1970, Bellman and Zadeh, in a document titled "Decision-making in the middle of the stage," [24] applied the theory of fuzzy sets in addressing the problem of optimization in fuzzy environment. In general terms, they expressed their decision-making process by the expression:

Decision = Intersect objectives and constraints.

It is assumed that the goals and limitations of the stage of nature, that are represented by fuzzy sets.

Let the A means a set possible actions. Let G_i , and $\in N_n$ means set of goals, each of which is represented by fuzzy set defined over A, or over a set that can be obtained from the A a simple function g i C_j, $j \in N_m$ means fuzzy set of constraints (Constraints), each of which is represented by the fuzzy set A defined above or of a set which can be obtained from a simple function c.

Fuzzy set of decisions D, which is defined over A, and whose membership functions:

$$\mu D(a) = min\ \{\mu G(a),\ \mu C(a)\}$$

So fuzzy set of decisions is *intersection of the Goals and Constraints, i.e* t also satisfies (to some degree) set goals and constraints $_i$ and C_j, in Figure 6.

The most common solution is to take a set of solutions to which corresponds the highest level of affiliation to set D. A set of final solution is defined as:

$$A_r = \{a_r / \mu D(a_r) > \mu D(a)\},\ \forall a \in A$$

Shown decision-making process can be extended to include the relative importance of the impact of the various objectives and constraints, so they will apply weight coefficients to describe their priorities. Application of weight coefficients enables more important criteria have a greater effect on the objective function of the less important [30].

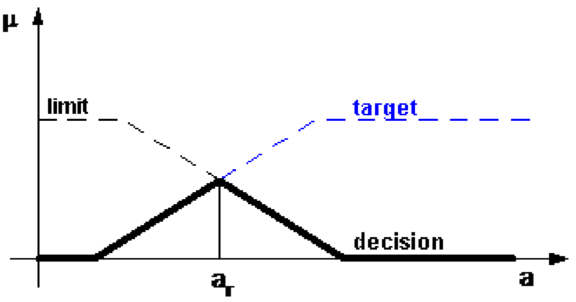

Image 6: Fuzzy decision making [24]

Computing with words is engaged words and statements from natural language as the main object computing, for example: small, large, expensive, quite possible, or even more complex sentences as "tomorrow will be cloudy but not very cold," [16].

An example that shows the way in which people ask question and whose common characteristic imprecision or both understandability of interlocutors:

Suppose we want to analyze errors, i.e. placing the request, i.e.: Costly mistakes that often occur and are found lately.

It offers a classic, solid query, e.g. can read:

Costs Errors> 10,000 Number of impressions and> = 3 and Impressions Date > = "01.04.2016"

Such a classical complex criterion does not include many cardinal cases, eg:

Costs Errors = 30,000 Number of Impressions = 2 and Impressions Date > = "01.04.2016" or

Costs Errors = 9,000 Number of Impressions = 10 and Impressions Date > = "01.04.2016" or

Costs Errors = 40,000 Number of Impressions> = 3 and Impressions Date = "29.03.2016" etc.

Figure 7 shows an example of determining the price of a new product with three rules (Restrictions), [9]:

R1 - the product should have a low price
R2 - Product price should be close to the price of competing products
R3 - Product price should be close to double the cost of production.

Linguistic values are, by rules, described in triangular fuzzy letters, A1, A2 and A3.
Let the price of competitive products is 25, a double production costs 30. Let's set of alternatives in the interval [10,50], and the product should have the price of this interval.

Decision D is in the interval [25, 30].

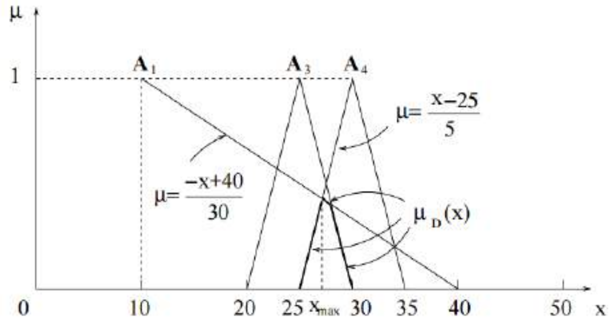

Image 7: Model pricing of the product [9]

Maximization decision gives the result x max = 27.14 , which can be interpreted as the price of a product . Of course, part of the price after the decimal point can be ignored , and the final price can be taken close to the price proposed for example: from the interval [25,30] . It can be seen that the effect on the maximum cost in this case, they have only limited to R1 and R3.

6. CONCLUSION

In paper is discussed about classification and the main aspects of the problem of decision-making, especially regarding aspects of vagueness and fuzziness of information. The complexity of the classification and the number of tools and methods that support certain aspects of decision making show that they mostly represent a partial approach to solving. The complex problem of categorization and decision-making tools is the result of intensive research and the topicality of this problem.

Traditional or classical techniques of operations research and operations management often can not model the complex nature of the system especially because they involve people. Decision makers make up weaknesses of mathematical models using knowledge based on experience and instead to look for optimal decision is usually first meet feasible. Fuzzy logic introduces the concept of graded affiliation, which is interpreted as different degrees of truth as opposed to classical logic which divides the testimonies of the true and false, and better describes the real problems.

Each of the tools to support decision-making has its own stage version, for example: the so-called. Multi Fuzzy Decision Making (FMCDM) techniques, Fuzzy Group Decision Making (FGDM) approach, Fuzzy Expert System, Fuzzy FMEA, fuzzy linear programming and fuzzy Petri nets etc. For example. u [19] states that the "Managing uncertainties is Critically important system design issue ... because a lot of information in the knowledge base ... inaccurate, incomplete or not fully reliable." Problems Big Data & Analytics and Business Intelligence for efficient and effective analysis of data, using Fuzzy Data Mining. Group decision making is basically asking the opinion of experts, and combines these into a coherent assessment of group decision. The experts many times cannot express quantitative assessment through precise numerical codes and use linguistic terms or fuzzy approach.

It can be supposed that fuzzy knowledge representation and reasoning, computing with words, soft computing, will be a key area of development in the area of decision-making especially aspects of risk and uncertainty regarding the behavior of the system in real conditions, [2], [3], [5].

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