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COMPARISON OF DIFFERENT QUANTITATIVE APPROACHES TO ASSESMENT OF ORGANIZATIONAL CULTURE

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Abstract: *Different authors point out that the organizational culture is a very important aspect of every organizational system. They all agree that it is usually influenced by various factors and that their combinations generate different types of culture. However, if its elements are managed properly, organizational culture can present valuable competitive advantage and the source of organizational development. It is crucial for management of every organization to adequately deal with the cultural issues, to continuously project the desired condition of culture and to put the efforts on reaching it. In order to define necessary steps for improving the culture, current state of culture should be specified first, and then compared to the designed one. It means that organizational culture needs to be measured somehow. This article will provide two approaches for measuring and comparing the culture among individuals and organizations. Two models, developed by different researchers, but with significant similarities, will provide the method not only for quantifying the organizational culture, but also for developing certain factors that determine it, in order to improve the organizational performance. The results can present the managerial guidelines for leading organizational development through implementing changes in the culture.*

Keywords*: Organizational culture, behavior styles, quantitative approach, measuring, organizational change*

1. INTRODUCTION

The appearance of culture as a concept which is substantial for organizations has generated numerous questions and unresolved issues for the organizational design and development. Opened questions remain concerning the content of culture, the influence on organizational results, the possibility of measuring the culture and the feasibility of cultural change. It is generally accepted that the organizational culture is an important element of all organizations and an integral part of the organizational development (Waterman Jr., Peters, & Phillips, 1980).

Culture has been treated by organizational researchers as a set of cognitions shared by members of a social unit (O'Reilly, Chatman & Caldwell, 1991). These cognitions are developed through social interaction and process of socialization when individuals are in connection with different elements of culture. Professor Geert Hofstede defines national culture “as the collective programming of the human mind that distinguishes one group or category of people from another” (Hofstede, Hofstede, & Minkov, 2010). The "category" can refer to nations, regions within or across nations, ethnicities, religions, occupations, organizations or genders. At organizational level, he defines culture “as the collective programming of the minds of group members by which one group distinguishes itself from other groups”. According to Hofstede, differences between nations are on the deepest level of culture, on the level of values, as presented on Figure 1.

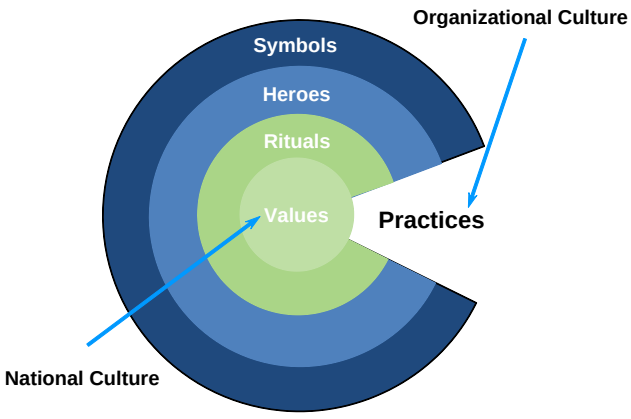

Figure 1: Different levels of culture (Hofstede, Hofstede, & Minkov, 2010)

Organizations that exist within the same national culture differ among themselves on a higher level of culture, the levels called practice (organizational rituals, heroes and symbols). It is level of practice which provides the information about the appropriateness of behaviors. Practice reinforces ways of thinking and behaving of individuals. It strengthens the connection between features in the environment and an individual's responses. There is an interpretation that individuals in organizations develop appropriate behaviors to reduce ambiguity and uncertainty of different events.

Different views on organizational culture and its components will be described in section 2 of this article. As presented on Figure 1, organizational culture can be layered. Each segment of the culture can be compared for different individuals, groups, nations, organizations etc. In order to compare any two features, they must be measured first. In section 3 of this article will be presented two tools for measuring the organizational culture. Each of them focuses on different elements of this phenomenon. However, the results that they provide have numerous similarities, which will be pointed out in the discussion part. Finally, certain conclusions and directions for future research will be given in section 5 of this paper.

2. THEORETICAL BACKGROUND OF ORGANIZATIONAL CULTURE

Relationships among people are recognized as a very important component in different organizational models (Jevtić, 2013). Waterman Jr. et al. (1980) propose *Stuff* as one of the elements in their 7S model. *People* are important part of Star model (Kates & Galbraith, 2007). Harold Leavitt (1965) also recognizes *People* as an organizational factor in his Diamond model. Such relations between members of an organization, together with their thoughts and perceptions, can be described as organizational culture. Different authors have different understandings and approaches to organizational culture.

Charles Handy (1976) describes four types of organizational culture: power culture, role culture, task culture and person culture. A *Power culture* characterizes influence that comes from a one person of group of people. Other members of organization, in which this culture is dominated, are as powerful as their possibility to freely get in touch with the supreme authority and with as few intermediaries as possible. Quick decision making and little bureaucracy are also characteristics of this culture. A *Role culture* characterizes highly defined structure and bureaucracy. In this culture, influence derives from a position in organizational structure, but not from expertise of employees. Role culture increases by procedures, job descriptions and role definitions. A *Task culture* characterize by the structuring of employees within teams. Power derives from expertise as long as a team requires expertise. This culture often exists within the matrix structure. *A Person culture* characterizes situations in which individuals are more important than the organization itself. This culture is appropriate for some professional partnerships, where each partner brings specific expertise to the organization.

Deal and Kennedy (1982) defined organizational culture as *the way things get done around here.* They differentiate four types of cultures: work-hard, play-hard culture, tough-guy macho culture, process culture and bet-the company culture. Those four types of cultures differ on how quickly the organization receives feedback, the way members are rewarded, and level of risks taken.

Cooke and Rousseau (1988) define culture as the behaviors that members believe, are required to fit in and meet their expectations, within their organization. Twelve behavioral norms are grouped into three general types of cultures. *Constructive cultures* characterize interactions among members and approach tasks in ways that help them meet their higher-order needs. *Passive-defensive cultures* characterize interactions among members in ways that will not threaten their own security. *Aggressive-defensive cultures* characterize interactions among members in forceful ways to protect their status and security.

Edgar Schein`s (1992) model of organizational culture has three levels. At the first level are organizational attributes that can be seen, felt and heard – known as *artifacts*. At this level of organizational culture we can see visible items, such as dress code, office design, furniture, rewards and recognition to employees, but also elements as logo and slogan of the company, mission statement and other elements. At the next level of organizational culture are values which represent preferences of individuals regarding certain aspects of business performance (i.e. loyalty and quality of provided services to consumers). Examining this level of organizational structure is mostly realized by interviewing members of the organization and by using questionnaires to obtain information regarding attitudes of employees. According to Schein, the lowest level of organizational structure assumes organizational assumptions. These are the elements of culture that are unseen and not cognitively identified in everyday interactions between organizational members. Surveys and interviews cannot be used for collecting data related to these characteristics of the organization.

Robert Quinn and Kim Cameron (2011) researched what makes organizations effective and successful. Their model of organizational culture distinguishes four culture types. Competing values produce polarities like: flexibility versus stability and internal versus external focus. These two polarities construct the quadrant with four types of culture. A c*lan culture* describes friendly workplace where leaders act like father figures. Clan culture organizations have internal focus and flexible structure. An *adhocracy culture* describes dynamic workplace with leaders that stimulate innovation. Adhocracy culture organizations have external focus and flexible structure. A *market culture* describes competitive workplace with leaders like hard drivers. Market culture organizations have external focus and high level of control. A *hierarchy culture* describes a structured and formalized workplace where leaders act like coordinators. Hierarchy culture organizations have internal focus and high level of control.

3. MEASURING THE ORGANIZATIONAL CULTURE

The study of organizational culture comes from qualitative research methods in the field of organizational behavior (Janićijević, 2011). This was expected, if we take into consideration that the main fields of interests of researchers from that area were social interaction, socialization, behavior and other areas which are typical for qualitative research. On the other hand, qualitative and quantitative methods are complementary approaches in studying organizations and their elements. Qualitative researches are useful in early phases of process of developing a concept (such as organizational culture) when there is no developed terminology used to describe phenomena and when there is a lack of information. The advantages of quantitative methods in examining the attributes of organizations also include the possibility of comparing the results between the organizations, cross-sectional comparisons, possibility of repeating the research in different organizations performed by different researchers, as well as objective interpretation of the obtained results. Two quantitative methods for measuring the organizational culture will be described in further text.

3.1. Organizational Culture Inventory

Inventory which was developed by Robert A. Cooke is one of the quantitative approaches to the assessment of a specific aspect of organizational culture – the shared norms and expectations that guide the think and behavior of members (Cooke & Rousseau, 1988). Rather than measuring organizational culture directly, Organizational Culture Inventory (OCI) focuses on the behavioral norms and expectations associated with the shared beliefs and values held by organizational members (Cooke & Szumal, 1993). Thus, inventory connects the aspects of culture that have the greatest impact on the activities of member and outcomes of the organization. Statements in the inventory describe some of the thinking and behavioral "styles" which members of an organization might be expected to adopt in carrying out their work and interacting with others. These statements measure 12 different cultural styles.

OCI measure more global aspects of culture such as shared beliefs and values and this is what differentiate the OCI from other tools for measuring organizational culture. Although the beliefs and values influence the behavior of people, in the case of norms and expectations, this impact is more direct. By measuring norms and expectations, the OCI makes the concept of culture somewhat less abstract and easier for understanding. The 12 styles of behavior are visualized on "Circumplex", researched and developed by Robert A. Cooke and Clayton Lafferty, in the period from 1973 to 2009, which shows the results for all styles and represents a cultural profile of the respondent's organization, as presented on Figure 2.

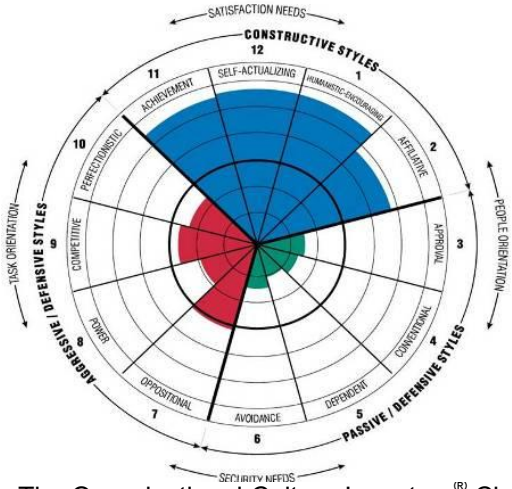

Figure 2: The Organizational Culture Inventory® Circumplex

According to these 12 types of norms we can make distinction between three general clusters:

1) **Constructive cultures** expect their members to interact with people and perform their tasks from the perspective of satisfying the higher-order needs (Self-Actualizing, Achievement, Humanistic-Encouraging and Affiliative norms).

2) **Passive/Defensive cultures** direct members of organization to interact with people in ways that will not jeopardize their own security (Approval, Conventional, Dependent, and Avoidance norms).

3) **Aggressive/Defensive cultures** encourage that the approach to tasks is directed towards protecting their status and security (Oppositional, Power, Competitive, and Perfectionistic norms).

The **Constructive** cluster considers norms of culture which are promoting the needs which has the higher-order of satisfaction and satisfaction behaviors. Constructive cultural norms are:

- (**11 o'clock** position) *Achievement culture.* This culture is typical for organizations which appreciate members who set and accomplish their own goals. These goals are ambitious but realistic. In realizing these goals, employees set up plans for reaching the goals, and **enthusiastically** pursue them. Organizations with achievement culture are effective and solve problems in a proper way. Their clients and customers are well-served, and organizations' and their members' orientation is healthy.

- (**12 o'clock** position) *Self-Actualizing culture.* Valuing creativity, quality and growth of an individual in cooperation with his task accomplishment are characteristics of this culture. In self-**actualizing** cultures employees are pushed towards personal development and enjoy in their work. Although these organizations are challenging for control, they attract outstanding employees and provide high-quality outputs with high level of innovativeness.

- (**1 o'clock** position) *Humanistic-Encouraging culture*. For these organizations it is typical to have person-center management with high level of employees' participation. Employees are pushed to be constructive and supportive which should lead towards effective organizational performance. Members of these organizations are highly satisfied **because** they have provided professional growth and active involvement in organizations' functioning and are highly committed to the organization.

- (**2 o'clock** position) *Affiliative culture.* Affiliative organizations have the constructive **interpersonal** relationships as the top priority. Loyalty, good cooperation and open communication in the work group is typical for these kind of organizations. Employees in affiliative organizations are sensitive to the satisfaction of their co-workers, friendly and open.

Cultural norms of **Passive/Defensive** cluster promote self-protective behavior in interactions with people. Passive/Defensive norms are:

- (**3 o'clock** position) *Approval culture*. Characteristic of these organizations is that they avoid conflict (mostly artificially) in interpersonal relationships. Employees are pushed to be liked by others and agree with all the decisions without giving their own opinion. Although the work atmosphere might be pleasant, effectiveness of these organizations is minimized because of limited "open-mindedness" of employees which are not giving constructive ideas.

- (**4 o'clock** position) *Conventional culture*. Traditional, bureaucratically organized and conservative organizations are typical example for conventional culture. Employees are conformists, they follow the rules, which is limiting innovation and suppressing the level of the organization's ability to adopt the changes occurred in its environment.

- (**5 o'clock** position) *Dependent culture.* If an organization has high level of hierarchical control and low level of employees' participation, we classify it as organization with dependent culture. Members of these organizations are highly limited with centralized decision of their superiors and they actions are highly directed by management. In dependent cultures, performance is not efficient because of low flexibility, no possibility to take initiative and long decision making process.

- (**6 o'clock** position) *Avoidance culture.* Organizations which do not highlight accomplishments but focusing on made mistakes are characterized with culture of avoidance. In these cultures, employees avoid responsibilities because of the negative reward system. Because the members of these organizations are not willing to take actions and make initiative, their survival is questionable.

Cluster of **Aggressive/Defensive** has norms which are oriented towards self-protective behavior and it values the way that members approach tasks. In Aggressive/Defensive cluster, norms are:

- (**7 o'clock** position) *Oppositional culture.* Prevailing negativism and confrontation is the most suitable for describing highly oppositional organizations. These organizations have employees which gain their status by high level of criticism and opposing the new ideas which enables safe decision making process. Unneeded conflicts and issues with problem solving are characteristics of oppositional cultures.

- (**8 o'clock** position) *Power culture.* When there is no participation and the functioning of the organization is based on the authority of the superiors, we have organization with power culture. In these organizational cultures, members have high control of subordinates because they believe they will be rewarded for that behavior. Low effectiveness is typical for these organizations, but members are mostly not aware of it, because subordinate they control are holding back the information and not interesting in giving the contributions.

- (**9 o'clock** position) *Competitive culture.* Competitive-oriented culture mostly values winning and employees are directed toward competing with each other. They believe their colleagues are their opponents and perceive their actions through a "win" or "lose" outcome. Because of limited interest in cooperating and highly set standards these organizations might be poorly effective.

- (**10 o'clock** position) *Perfectionistic culture.* Mostly preferred values in organizations with this culture are persistence, hard work and, of course, perfectionism. Making mistakes in these organizations is not acceptable and precisely defined goals which demand long working hours are not questionable. Although lower level of perfectionism is wanted, going to the extreme level can cause loosing the sight of the goal and becoming lost in details.

3.2. Hofstede model

Another approach to measuring organizational culture, which will be discussed here, was developed by Professor Geert Hofstede. He defines organizational culture as "the way in which members of an organization relate to each other, to their work and to the outside world that distinguishes them from other organizations" (Hofstede & Pedersen, 2002).

The questionnaire was aimed at collecting information on the same four types of manifestations of culture as covered in the interview checklist: symbols, heroes, rituals, and values. The first three are subsumed under the common label "practices" (Figure 1). Values items describe what the respondent feels "should be", practices items what she or he feels "is".

If we talk about dimensions for measuring organizational culture by using Hofstede model, we diversify two main groups of dimensions:

1) Autonomous group of dimensions
2) Semi-autonomous group of dimensions

Autonomous group includes six dimensions**:** organizational effectiveness, customer orientation, control, focus, approachability and management philosophy. On the other hand, group of **semi-autonomous group** has two dimensions: degree of acceptance of leadership style and degree of identification with the organization. In further text will be given the description of every dimension from Hofstede model.

First dimension is *Organizational effectiveness*. This dimension is closely connected with the effectiveness of the organization, and that connection is the closest among all the others. Organizational effectiveness distinguishes means and goal oriented cultures. Means oriented cultures focus on the way of performing work (the key question is "how"), while in the goal oriented cultures employees are primarily achieving internal goals (the key question is "what"), as shown on Figure 3. People from **very means** oriented culture are avoiding risks and giving limited effort at the workplace in reverse to **very goal** oriented culture.

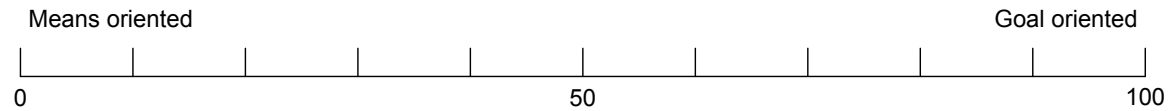

Figure 3: First dimension scale – Organizational effectiveness

Second dimension is *Customer orientation*. In comparison to the first dimension, this one is oriented towards the satisfaction of the customer or other interested parties. According to this dimension we separate internally driven and externally driven, as presented on Figure 4. In a case of **very internally** driven cultures business ethics and honesty are the most important and they work in favor of customer ant the world at large. Employees perceive that their most important task is to meet the customer's requirements in **very externally** driven cultures, and the ethical side of their performance is not in the focus. This dimension also shows how much is the organization's relations with surrounding programmed in advance.

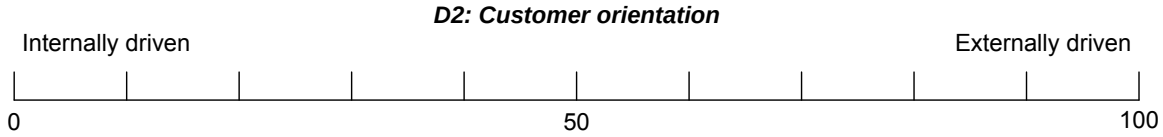

Figure 4: Second dimension scale – Customer orientation

Control, the **third** dimension of this model focuses on measuring the internal structure, control and discipline. As shown on Figure 5, this dimension classifies organizations as **easy-going cultures** if internal structure is loose, with little control and discipline and a lack of predictability, and if it has a lot of improvisation which provokes employees to think out of the box. On the other hand this dimension claims that the organization has very strict work discipline if people are prompt, cost conscious and serious. In difference to the second dimension, this dimension describes the predictability of internal functioning.

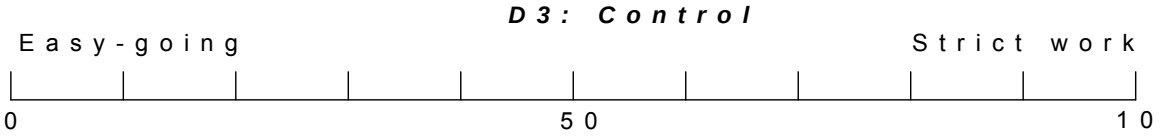

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Figure 5: Third dimension scale – Control

Fourth dimension is *Focus*. According to the focus dimension organizations are diversified by the influence of internal social norm, as presented on Figure 6. In that way, organizations are considered as **local companies** if employees identify with the boss and/or the business unit they belong to, and, the other possibility is to be a **professional company** if the identity of an employee is shaped by his profession and the content of his job. It is important to emphasize that this dimension is not related to the identification with the company as a whole, but the parts of it. The dimension related to the total organization will be explained hereinafter. Also, this dimension suggests that cultures which are classified as **very local** are short term directed and internally focused, and their characteristic is that an employee tends to be like everyone else in the organization.

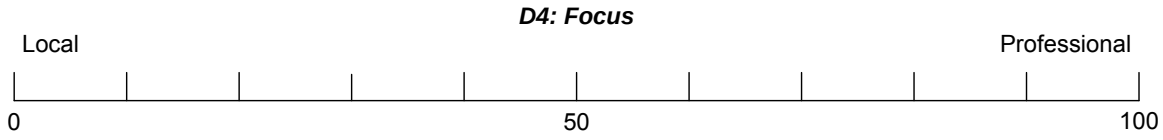

Figure 6: Fourth dimension scale – Focus

Fifth dimension is *Approachability*, presented on Figure 7. In terms of the accessibility of an organization Hofstede defined the fifth dimension, approachability. This dimension separate **open systems,** in which newcomers are immediately accepted, wheatear they are considered as outsiders or insiders. In these kinds of organizations everyone could fit in, while on the opposite side we have **closed systems** in which the situation is reversed. Also, we can mention that, from the aspect of satisfaction, employees' favorite preference is the open culture.

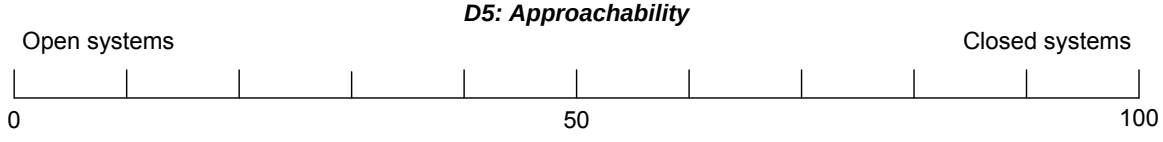

Figure 7: Fifth dimension scale – Approachability

Sixth dimension is *Management philosophy*. Management philosophy diversifies cultures to employee oriented cultures and work oriented cultures, as shown on Figure 8. **Employee oriented** organizations consider that people are more important than completing the job, no matter how high the price might be. Very employee oriented cultures take personal problems of staff into account, contrary to very **work oriented** organizations with a high pressure of performing the task if it harms employees.

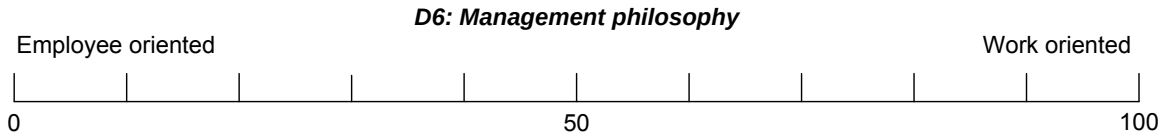

Figure 8: Sixth dimension scale – Management philosophy

Seventh dimension is *Degree of acceptance of leadership style*. In this dimensions difference is made by the answers of respondents give to the questions related to the comparison of true leadership style of their boss versus the leadership style they prefer, as presented on Figure 9. This dimension is different than the previous six, because there is no referent value, just the level of agreement with the preference of the respondents, and the value is correlated with the Power Distance Index of the 5-D Model.

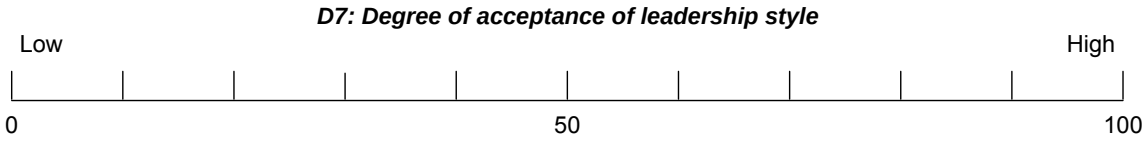

Figure 9: Seventh dimension scale – Degree of acceptance of leadership style

Eighth dimension, shown on Figure 10, is *Degree of identification with the organization*. In describing the fourth dimension, focus, we mentioned that it is not related to the identification with the company as a whole. For the information about the degree of cohesion between of the company Hofstede uses this, eight dimension. Results provided from this dimensions give us the answers about the homogeneity of the culture. As well as the previous dimension, this is also semi-autonomous dimension. We can also mention that scores achieved on this dimension has a certain degree of correlation with the scores on the second dimension, when the more internally driven organizations (low score of D2) most likely identify with the organization overall opposite to identification with stakeholders.

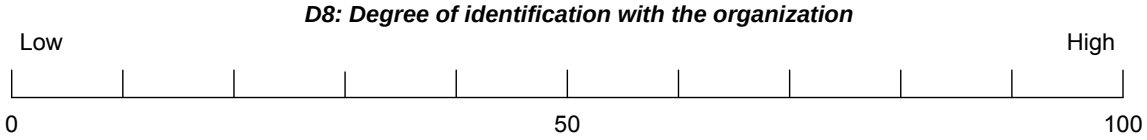

Figure 10: Eighth dimension scale – Degree of identification with the organization

All eight dimensions of Hofstede model are described in brief in Table 1.

Table 1: Overview of Hofstede model dimensions

Group of dimensions	Dimension	Dimension name	Low score	High score
Autonomous dimensions	**D1**	Organizational effectiveness	Means oriented	Goal oriented
	D2	Customer orientation	Internally driven	Externally driven
	D3	Control	Easy-going	Strict work discipline
	D4	Focus	Local	Professional
	D5	Approachability	Open systems	Closed systems
	D6	Management philosophy	Employee oriented	Work oriented
Semi-autonomous dimensions	**D7**	Degree of acceptance of leadership style	Low degree	High degree
	D8	Degree of identification with the organization	Low degree	High degree

4. DISCUSSION

Through parallel analysis of two presented models, certain resemblances can be identified. First of all, their authors have similar view on organizational culture. Both authors define the culture as the approach of the employees to their work, their mutual behavior and interaction, and their attitude towards the organization, its goals and their tasks.

Second, if the definitions of Robert Cook's behavior styles and Geert Hofstede's dimensions are analyzed, certain parallels can also be found. One of them is related to D6 dimension from Hofstede model, *Management philosophy*, and a group of Cook's behavior styles. *Work oriented* side of D6 is the combination of styles from the left hemisphere of the "Circumplex" (*Oppositional, Power, Competitive, Perfectionistic* and *Achievement*), while behavior styles from its right hemisphere (*Humanistic-Encouraging, Affiliative, Approval, Conventional* and *Dependent*) match the reverse, *Employee oriented* philosophy of D6.

Next, opposite values of D3 dimension, *Easy-going* and *Strict work discipline*, mostly correspond to contrary behavior styles, *Power* and *Affiliative*, respectively, but also to all the styles from the top hemisphere (*Easy-going*) and the bottom hemisphere (*Strict work discipline*) of "Circumplex". *Easy-going* cultures are characterized by little control and discipline, and a lack of predictability, and they have a lot of improvisation which provokes employees to think out of the box. Described behavior matches the styles which are oriented towards higher needs and self-actualization, such as *Self-Actualizing*, *Humanistic-Encouraging* or *Affiliative*. The organizations with *Strict work discipline* culture are those with people who are prompt, cost conscious and serious. Those behavior resemble the styles from bottom of the "Circumplex", like *Conventional*, *Dependent*, *Avoidance* and *Oppositional*.

Additionally, dimension D5 from Hofstede, *Approachability,* separates the organizations or organizational units in which newcomers are immediately accepted. Such behaviors are in OCI described by *Humanistic-Encouraging* and *Affiliative* styles. Contrariwise to open systems, closed systems are not friendly and do not support new members or new practices, which corresponds to *Conventional* and partly to *Dependent* behavior style.

Furthermore, reverse cultures of D1 from Hofstede model match the styles on 11 o'clock and 5 o'clock positions on "Circumplex", *Achievement* and *Dependent*. *Goal oriented* side of D1 is described as the culture where employees are focused on achieving realistic and reachable goals, and the accent in their reaching is on "what?" question. It resembles the behavior style described as *Achievement*. Reverse to that, *Means oriented* culture is oriented towards "how?" question and is looking for the answers to the same questions as those which are characteristic for behavior that belongs to *Dependent* style.

Various similarities among behavior styles from one model and cultural dimensions from other can also be recognized when different groups or combinations of styles and dimensions are analyzed.

5. CONCLUSION

Presented models of organizational culture and quantitative approach to their analysis provide multiple benefits. Both models are widely accepted as tools for organizational development. Different organizations have different organizational cultures, even though their members are of the same nationality and come from the communities where similar values are appreciated. As described in other models of organizational culture, all of the styles or dimensions are related to (and result from) organizational structural variables, reward system, leadership and managerial styles and other factors. Norms and expectations are shaped by numerous factors, most of which are controlled by the organization and its leaders. These factors are usually called the levers of organizational change and can be influenced during projects of organizational development.

Both methods for measuring organizational culture that are presented in this paper can be integrated into wider model of organizational change. Their components, behavioral norms in OCI and dimensions in Hofstede, are connected to the organizational change levers. Organizational change models enable the overview of the priorities and the definition of the initiatives which will reduce the gap among current and targeted organizational culture. The priorities are determined by the correlation analysis between organizational change levers and elements of organizational culture. This means that organizational development can be conducted through adequate improvement of different components of organizational culture (behavior styles or cultural dimensions).

In the same way, both analyzed models indicate that behavioral norms or dimensions measured by defined questionnaires are associated with important outcomes at the individual, group and organizational levels. The most immediate outcomes are motivation, inspiration, satisfaction, quality of work-life, teamwork, cooperation etc.

Described tools are widely accepted in organizational science, but there is no data that indicate that they have been used in organizations in Serbia. Such approach could be very useful for Serbian public enterprises, where dominant defensive behavior is the legacy of previous regime and inadequate organizational forms (Todorović et al., 2013). For this reason, future research should determine whether these models are applicable in local cultural values, in terms of providing adequate directions and support for successful organizational development.

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PUBLIC SECTOR DOWNSIZING THROUGH CENTRALIZATION OF NON-CORE FUNCTIONS: BELGRADE CASE STUDY

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Abstract: *One of the burning issues currently in Serbia is the reform of public sector. Present organizational model is the legacy of previous government system and disables public companies to adapt to the changes in environment. Total number of employees in public entities is extremely high, comparing to EU countries, so downsizing is one of the necessary measures and cannot be avoided. In order to successfully complete the EU integrations, Serbian government needs to propose sustainable solutions for public sector organization and management at state and local level. In many cities worldwide local governments recognized network organization as possible solution for increasing the efficiency of public enterprises and upgrading the quality of public service at the same time. Such concept is based on centralization of certain non-core functions which appear in multiple public companies, in order to secure better allocation of human resources and improve their performance. This research aims to show how centralization of adequate jobs can provide the base for reducing the number of employees in public companies, using the City of Belgrade as an example. The findings can be practically used as the guidelines for the city authorities in Belgrade during the following process of public sector restructuring.*

Keywords*: Downsizing, restructuring, public sector, public company, public enterprise, centralization, network organizational model, Belgrade*

1. INTRODUCTION

Public sector functioning is topic of many studies all over the world. Most of that studies conclude, that public spending could be much smaller and more efficient than today (Alfonso, Schuknecht & Tanzi, 2010). On the other hand, the role of local public enterprises within public sector of one country is growing with the development of that country. Industrialized countries typically spend 50% or more of public sector resources to fund local public services (IDG Policy, 2013). Explanation is that the additional services which improve the life quality are demanded, not just communal (Longo & Cristofoli, 2008). In order to adapt to new trends, public sector leaders often widen the scope of public services (Indihar, Stemberger & Jaklic, 2007) For this reasons, performance of public enterprises has become persistent topic in organizational analysis (Aharoni, 2000).

Considering public spending, situation in Republic of Serbia is more dramatic due to several factors. The first one is high overall unemployment rate of 24.1% (Statistical Office of the Republic of Serbia, 2013). That caused excessive employment in local governments, public agencies and public enterprises, usually helped by politicians. Structural reforms promoted by new Serbian government include, as one of the mayor goals, reducing public sector size and scope. This paper proposes one of the possible ways for reducing public sector scope of services, and consequently, its size, in the City of Belgrade.

Today, local public enterprises in City of Belgrade are highly specialized, and with clearly defined jurisdiction. (Todorović, Komazec & Jevtić, 2012). All enterprises are functionally organized, legally and essentially fully independent of each other, although all of them are claiming funds from city budget. This non-cooperation forces local public companies to form similar non-core organizational units, in order to provide support to primary activities and improve the output quality (Jaško, Krivokapić & Čudanov 2010). Besides increased independence of each public company, this led to growth of growth of its size, in term of number of employees (Čudanov, Jaško & Săvoiu, 2012). Large number of employees is just one of the reasons for pure performance, and former studies have shown that there is no public company in Belgrade that is without any reserves in term of number of employees (Todorović, Komazec & Jevtić, 2012).

Many of these problems could be solved by implementation of network organizational model in public sector (Todorović, Komazec & Čudanov, 2013). Network organization, through better coordination, increases the efficiency of resources allocation, brings more flexibility, enables organizational learning, improves planning process and upgrades the quality of services (Jaško, Jaško & Čudanov, 2010). Network organization of

public sector also enables wide spectrum of internal services that companies can provide to each other (Komazec, Todorović & Krivokapić, 2012). Precondition for forming a network is focusing on core business and outsourcing most of the non-core activities (Popović, Jaško & Prokić, 2010). For this reason, the basis for the successful implementation of network model in public sector is the determination of non-core activities in each public company, so some of them could be centralized at network level. This centralization will consequently emphasize double activities and a number of employees that are engaged on them at the level of whole City of Belgrade.

The purpose of this article is to analyze all the functions which exist in Belgrade public enterprises, to separate non-core from core functions, to identify the functions which appear in multiple public companies and to propose the centralization of certain non-core functions. In the second paragraph will be presented the methodology for gathering the necessary data. The third section will describe the process of identifying the functions that are adequate for centralization, and the fourth will deal with the scope of centralization. Number of employees covered by centralization and possible economic effects will be discussed in the fifth paragraph, while conclusions, limitations and directions for future research will be presented in the sixth section of this paper.

2. METHODOLOGY

All the directions for public sector downsizing through centralization that will be presented in this paper appeared during our engagement as business consultants on projects of restructuring public sector in the City of Belgrade. Our analysis included 28 public enterprises, with 21.023 employees, which provide different communal or public services to city residents.

First step was to get insight in all the activities that are performed in individual companies, for every analyzed public company, in order to classify the activities to core and non-core and to select those that could be centralized. Those activities were derived from job descriptions and later categorized to core and non-core and grouped into unique jobs and functions for all 28 companies.

Second step was to calculate total number of employees for each function. For this purpose, we analyzed the content of formal documents in every company. From systematization documentation, existing organizational structures and job classifications we managed to create the list of positions in every public company. Through salary reports we were able to relate each employee with single position from the list, and to calculate total number of employees on every position. Their sum is equal to the total number of employees in public sector. Since every position is followed by job description, we managed to link the positions to previously mentioned functions, and to determine total number of employees for each function.

Based on this, we were able to conclude whether certain non-core functions were executed in multiple enterprises and to calculate the exact number of employees for each function. These two parameters represent the main inputs for the decision making process concerning centralization of non-core functions which will be described in this paper.

3. IDENTIFYING THE FUNCTIONS THAT ARE ADEQUATE FOR CENTRALIZATION

In order to determine which functions are suitable for centralization, unique catalogue of all functions that are performed in public sector is requested to be created first. However, in order not to lose data, the catalogue ought to have two levels, which means that each function will have a list of jobs included. After that, each job from the catalogue should be assigned “1: MANY” relation with the list of public enterprises.

In order to achieve this, various positions from different public companies need to be standardized (Krivokapić, Todorović & Komazec, 2013). For example, same positions, according to job descriptions, may be named differently in two enterprises. As a consequence, all job descriptions need to be analyzed separately in order to perform job standardization. The result is the list of standardized positions, which is in “1: MANY” correlation with actual list of positions that can be found in the official documentation. Now each standardized position can be “1:1” connected to the job from the catalogue.

Finally, since every function is related to the job, standardized position, which is correlated to the actual positions in the companies, as presented on Figure 1, it is possible to conclude which functions are performed in more than one public company.

This way, not only precise number of different public enterprises for each function where it is identified can be determined, but also the exact total number of employees on each function can be calculated, since every actual position has number of employees as an attribute.

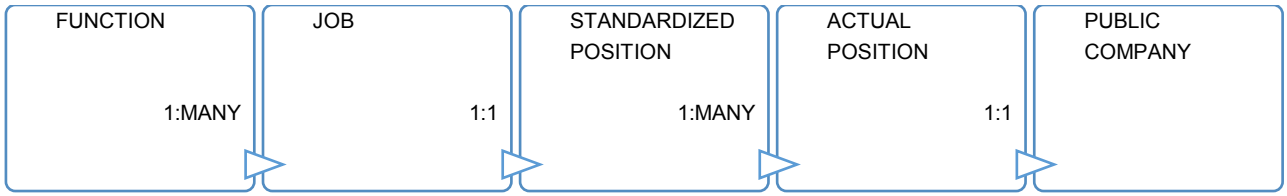

Figure 1: Process of identifying the functions which exist in multiple public companies

Complete catalogue contains 294 different jobs that are performed in Belgrade public sector. Less than 20%, 49 jobs, are performed in more than one public company. Possible explanations are highly specialized core activities in most public enterprises, which are characteristic only for the company which is providing relevant public service.

At first sight, it may seem that these 20% of jobs do not offer plenty of space for centralization. Without deeper analysis, it can be explained by the necessity for some supportive activities, such as cleaning, fire protection or IT support, which are present in almost all companies. Nevertheless, total number of employees on these jobs is 5.645, which is about 27% of total number of employees in Belgrade public sector. If only jobs which exist in 5 or more public companies are analyzed, number of examined jobs is reduced from 49 to 26, but total number of engaged employees still remains over 5.000, 5.088 to be precise, or 25% of total workforce. Same way, if the list is shortened to 21 jobs which are identified in 10 or more Belgrade public enterprises, calculated number of people that are hired just for their execution is 4.405, which is more than 20% of total number of employees in complete public sector.

Considering all of the above, the list of all functions and jobs which should be centralized in Belgrade public sector for the purpose of increasing their efficiency on city level is derived from the catalogue and presented in Table 1.

Table 1: Functions and jobs proposed for centralization in Belgrade public sector

Function	Job
Safety, security and health at work	Safety and health at work
	Security at work
	Firefighting
Finance	Finance
IT support	IT support
Internal transportation	Internal transportation (C, D and E category)
	Internal transportation (B category)
Public procurement	Public procurement
Marketing and public relations	Marketing and public relations
Vehicle maintenance	Administrative support
	Vehicle and mechanization maintenance
	Vehicle repair and maintenance services (C, D and E category)
	Technical inspection of vehicles
	Car washing
Maintenance, Hygiene, Sanitation and Cleanliness	Maintenance, Hygiene, Sanitation and Cleanliness
Legal	Legal
Media space selling	Media space selling
Registration, insurance and car washing	Technical inspection of vehicles
	Car washing
Inbound logistics	Car maintenance
Human resources	Human resources

Several jobs from the catalogue are present in all or almost all enterprises. In some cases it is expected, since certain non-core functions are necessary for normal operations in any enterprise. For the purpose of securing regular workflow, some of those jobs simply need to remain decentralized and to continue performing on company level. For example, centralization of complete storage jobs would be rather inefficient, because it would consider that every time when any office supplies are needed, centralized

warehouse should deliver paper, toner, paperclips etc. Such centralization would have a negative effect on normal, everyday operations in every public company.

Same way, there are jobs which should remain in every company due to their specificities. Accounting is an example. Although it is theoretically done by the same rules in every public enterprise, certain specificities of core business demand the adoption period for accountants, in order to achieve maximal efficiency. If the accountants were integrated and started serving 28 different companies, most of their work time would be spent on analyzing business activities and learning new accounting principles. Since their current job routine would be lost, such jobs ought to be left decentralized.

Centralization considers grouping of employees engaged on same jobs into unique organizational units (Jaško, Čudanov, Jevtić & Krivokapić, 2013). However, since some of the jobs from Table 1 have very large number of employees, next important decision that should be made concerns the scope of centralization. It ought to be determined whether all the employees on same job will be organizationally moved to centralized unit, or some of them will continue working in their current companies.

4. DEFINING THE SCOPE OF CENTRALIZATION

As already explained, introduction of network organizational model and centralization of certain non-core functions in Belgrade public sector can lead towards improved management, more efficient planning, better allocation of public resources and reduction of overheads. However, the scope of centralization cannot be the same for all functions and jobs that were marked as suitable for centralization.

IT support is one of the functions proposed for centralization on city level. Nevertheless, it does not indicate that all IT employees should be locational moved to centralized organizational unit. If that was the case, other employees in Belgrade public enterprises would be left to wait for the arrival of IT support from centralized unit every time they have even smallest technical issues with IT equipment. Described organization would disturb normal operating of individual companies. On the other hand, employees on certain IT jobs, such as software developing or database administration, can be locational centralized without any organizational barriers, since their presence in individual enterprises is not demanded constantly. In these cases, centralization increases their efficiency, but also allows better usage of public sector intellectual capacity and expertise, since functional silos will be eliminated and knowledge transfer enabled (Todorović, Čudanov, Komazec & Krivokapić, 2013).

Another example of function that is proposed to be centralized partially is HR. Same as in previous case, part of employees, those who perform everyday HR activities such as presence recording, sick benefits, holidays etc. should remain in individual companies, while employees on strategic HR jobs such as selections or trainings could be more efficient if they were moved to single centralized organizational unit.

Opposite example are public procurements. Employees on these activities are among those with the lowest performance in Belgrade public sector (Todorović, Komazec & Jevtić, 2012). At first sight it can be explained by too many employees. However, when the real needs of each company in terms of public procurement are identified, it can be concluded that most of the employees who carry out these tasks are really necessary. Underutilization of the capacity occurs due to the nature of this business. The procurement is not something that happens every day. When there are active procedures, all available resources are deployed, often even overtime. The problem is that when there are no active processes, these employees literally have nothing to do. Therefore, their average performance is low.

The solution to this problem is the complete centralization of public procurement at the city level, so the employees on these activities could serve multiple companies. Since on city level at least one procurement procedure is active almost every day, their average performance would significantly increase. Of course, this would mean that the new organizational unit does not require all the employees who are currently performing activities related to public procurements. The savings that could be achieved by reducing the number of employees on these jobs could be used for hiring new people on jobs with lack of available capacity, for expanding the scope of activities under the auspices of Belgrade public sector, or for the development of public service in another respect.

Public procurement is just one of the jobs that can be completely centralized in the network model. Other examples are marketing, vehicle maintenance etc. In certain EU countries maintenance of public equipment is specific activity under the jurisdiction of local public enterprises (Crediop, 2004), which can be guidance and encouragement for centralizing these activities in Belgrade.

As previously described, jobs and functions need to be categorized by the centralization scope criterion, to full centralization and partial centralization proposals, as shown in Table 2.

Table 2: Proposed scope of centralization for all functions and jobs

Scope	Function	Job
Full centralization	Marketing and public relations	Marketing and public relations
	Public procurement	Public procurement
	Vehicle maintenance	Technical inspection of vehicles
	Media space selling	Media space selling
	Registration, insurance and car washing	Technical inspection of vehicles
		Car washing
Partial centralization	Safety and health at work	Safety and health at work
		Firefighting
		Security at work
	Finance	Finance
	IT support	IT support
	Legal	Legal
	Internal transportation	Internal transportation (C, D i E category)
		Internal transportation (B category)
	Maintenance, Hygiene, Sanitation and Cleanliness	Maintenance, Hygiene, Sanitation and Cleanliness
	Vehicle maintenance	Administrative support
		Vehicle and mechanization maintenance
		Vehicle repair and maintenance services (C, D i E category)
		Car washing
	Inbound logistics	Car maintenance
	Human resources	Human resources

After defining centralization scope, it is possible to analyze the number of employees affected by each type of centralization, possibilities for downsizing and economic effects on the city budget.

5. DISCUSSION

In order to get full view of the size and effects of proposed centralization, we need to analyze total number of employees in Belgrade public sector who will be affected if the proposals are accepted. The results are presented in Table 3.

Table 3: Number of employees per scope of centralization, per public company and total

Public company	Full centralization	Partial centralization	No change	Total
Public company 1	2	2	34	38
Public company 2	1	13	44	58
Public company 3	11	240	1327	1578
Public company 4	12	249	2021	2282
Public company 5	42	372	2749	3163
Public company 6	12	386	1637	2035
Public company 7	6	32	184	222
Public company 8	35	2263	4201	6499
Public company 9	4	33	159	196
Public company 10	10	14	145	169
Public company 11	31	256	778	1065
Public company 12	3	48	401	452
Public company 13	9	77	1118	1204
Public company 14	2	10	93	105
Public company 15	1	5	18	24
Public company 16	2	52	257	311
Public company 17	13	28	170	211
Public company 18	1	5	53	59
Public company 19	2	20	124	146
Public company 20	1	8	245	254
Public company 21	/	22	130	152

Public company 22	5	19	169	193
Public company 23	3	13	151	167
Public company 24	/	2	14	16
Public company 25	2	26	139	167
Public company 26	/	5	34	39
Public company 27	2	13	158	173
Public company 28	1	10	34	45
Total:	**213**	**4223**	**16587**	**21023**

Table 3 shows that in each of the 28 analyzed companies are identified the employees who should be included in any of the two proposed forms of centralization. They can be deployed in new centralized organizational units, but also in a completely new public companies, if the amount of work indicates that there exists real need for their formation. In order to gain a clear insight into the extent of the jobs that need to be centralized, it is important to determine the number of employees involved in each of the jobs for which the centralization is proposed, at the entire public sector level. These data is shown in Table 4.

Table 4: Number of employees per scope of centralization, per function and job

Function	Job	No. of employees
Safety, security and health at work	Safety and health at work	39
	Security at work	356
	Firefighting	180
Finance	Finance	357
IT support	IT support	203
Internal transportation	Internal transportation (C, D and E category)	137
	Internal transportation (B category)	61
Public procurement	Public procurement	85
Marketing and public relations	Marketing and public relations	92
Vehicle maintenance	Administrative support	67
	Vehicle and mechanization maintenance	399
	Vehicle repair and maintenance services (C, D and E category)	1721
	Technical inspection of vehicles	4
	Car washing	50
Maintenance, Hygiene, Sanitation and Cleanliness	Maintenance, Hygiene, Sanitation and Cleanliness	412
Legal	Legal	130
Media space selling	Media space selling	9
Registration, insurance and car washing	Technical inspection of vehicles	14
	Car washing	9
Inbound logistics	Car maintenance	21
Human resources	Human resources	90

It can be noticed that the majority of these employees works on the vehicle maintenance. Therefore, the formation of an entirely new public enterprise that would deal with the maintenance of public equipment can be considered. As mentioned above, there are examples of such enterprises owned by local governments in EU countries. Using the same principle, the City of Belgrade may found its own security company, software engineering enterprise, marketing and PR agency, company for maintenance, hygiene, sanitation and cleanliness etc.

A key question that emerges after the centralization is the financing of this new company. Namely, if the local government continue to finance the salaries of all employees who still work on maintenance of public vehicles, there is no progress. It is, therefore, necessary to determine the market value of the services that are provided by the new company for other members of the network (other public companies). This way the transferring prices can be defined, so public funds can be shift to the account of the new company in accordance with the extent of the work and defined transferring prices. These funds will certainly be lower comparing to the total gross value currently allocated for the salaries of employees involved in these jobs. In this manner, the city budget will be significantly relieved.

On the other hand, the management of the new company will be able to make appropriate decisions independently. Either will they reduce the number of employees and adapt to the real needs of other public companies, or will promote their service and offer it to other market participants. Second option would lead to

the utilization of all available resources, but also to the occurrence of additional sources of funding that would cover the costs of the new company, at the same time.

However, jobs like public procurement, human resources, finance, legal etc. can be performed within centralized organizational units. In these cases also it is crucial to adjust the number of employees to the actual needs of public companies which use such services, since they are still financed from the city budget, so any unnecessary expenses should be avoided.

In both situations, total number of employees in Belgrade public sector can be significantly reduced, which is followed by less appropriations for salaries on city level. This way the pressure on the city budget can be considerably diminished, that is one of the main goals of public sector restructuring in the City of Belgrade. Finally, public sector downsizing is achieved without endangering the functionality of public enterprises nor the quality of public service.

Some of the non-core functions may be opened for private capital after the centralization, regardless their organizational form (new public company or centralized organizational unit). In general, studies in this scientific field conclude that in order to improve public sector governments should adopt better institutions and should transfer many non-core activities to the private sector (Alfonso, Schuknecht & Tanzi, 2010). Transferring those activities to private sector could represent acceptable model for additional downsizing, in terms of corporate social responsibility, followed by improved quality of public service due to competition.

6. CONCLUSION

In this paper we have shown that some non-core functions appear in multiple public companies in Belgrade and that number of employees involved in them has significant share in total number of employees in Belgrade public sector. The centralization of certain non-core functions at the city level can highlight the appropriate number of employees, considering the real needs, since the employees on non-core functions will be able to serve more than one public company. In such way, the results of this research can help the city authorities with finding the appropriate model for downsizing public sector in Belgrade, but also to provide useful guidelines for other local governments in Serbia, since the number of employees in public companies is one of the most important issues in the process of EU integrations.

Consequently, the centralization of adequate non-core activities will lead to the reduction of total labour cost and reduced pressure on the city budget in Belgrade, as described in this article.

After identifying the functions that should be centralized in public sector, the next task is to define centralization priorities, since not all functions can be centralized at once. This can be the topic of some future article. Future research should also analyze possible institutional alternatives for implementing network organization in public sector and propose the concrete procedure for introducing such organizational and institutional model, with the centralization of non-core functions as one of the steps.

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ORGANIZATIONAL ANALYSIS AND DIAGNOSIS: TRACKING DOWN PROCESSES AND STRUCTURE

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Abstract: *Processes and structure are two inextricably intertwined components that must be taken into consideration while designing organization. The aim of this paper is to depict the overall methodology for analyzing and diagnozing processes and structure that can be applied to every industry with some small adjustments. The motive for undertaking its writing is the improvement of existing process and organization structure design practice. It synthesizes and systematizes existing theoretical knowledge that has been refined and proven in practice through implementation of numerous projects within one big vertically integrated profit organization operating in Serbia. The paper starts with an overview of techniques and tools for processes and structure analyses, continues with the manner in which a diagnosis report may be presented, and ends by describing its limitations and providing a recommendation for practitioners. The expected outcome of this paper is contribution to organizational performances increase of all organizations operating in Serbia and the region. In order for this to happen, managers must become aware of the importance of gaining an in-depth knowledge about the processes and organization structure. They ought to realize that this knowledge will enable them to continually improve the manner in which their organizations operate. Therefore, methodology insight provided in this paper is highly beneficial for managers and other practitioners in terms of development of their organizations' competitive advantage, which is a necessity in environment subjected to frequent changes.*

Key words: *organization, organizational analysis, organizational diagnosis, process, structure, organization design.*

1. INTRODUCTION

Quality of organization design has become accepted as one of the major factors of competitive advantage in contemporary environment, even though numerous researchers began investigating this topic back in the 1960s and 1970s (cf. Chandler, 1962; Lawrence & Lorsch, 1967; Greiner, 1972; Galbraith, 1973; Khandwalla, 1973; Mintzberg, 1979). Organization design may be regarded as an outcome of shaping and aligning all the components of an organization toward the achievement of an agreed mission and objectives (Stanford, 2007), which ultimately makes organizations actively practicing organization design high-performing systems ready to adapt to almost any shift in its environment. Since contemporary organizations are facing the unpredictable and more complex environment than ever before, in effect paying attention to a much larger number of variables in the environment and their dynamics than was the case earlier (Stefanović, Prokić & Vujović, 2012), significance of organization design for on-going operations as well as for long-term viability of organizations is obvious.

Each organization design project rests on the chosen organization design model. The organization design model is a model of an organization that identifies its main components and relations between them for the purpose of understanding the organization as a dynamic entity. The most widely used models are the following: (1) Weisbord's Six-Box Model (Weisbord, 1976), (2) Nadler-Tushman Congruence Model (Nadler & Tushman, 1980), (3) McKinsey 7S Model (Pascale & Athos, 1981; Peters and Waterman, 1982), (4) Model of Organizational Performance and Change (Burke & Litwin, 1992) and (5) Galbraith's Star Model (Galbraith, 1995; Kates & Galbraith, 2007). These models are being used because researchers dealing with organizations are unable to treat the organization in all its diversity and multidimensionality, or it is simply not practical, so they, therefore, choose one perspective, or "portion" of the reality and observe the organization through it (Morgan, 1990). Therefore, the main role of organization design models is to provide an understanding of the organization and the effects that specific actions might have within it by simplifying the reality (Janićijević, 2010). The choice of the model depends on the resources available to the organization, as well as required complexity of the organization design project, i.e. the required level of detail.

Two crucial components that are inextricably intertwined and must be taken into consideration in each organization design effort, no matter what organization design model is used, are processes and organization structure. "A process is simply a structured set of activities designed to produce a specified output for a particular customer or market. It has a beginning, an end, and clearly identified inputs and

outputs. A process is... a structure for action, for how work is done... [Business] processes are therefore the structure by which an organization does what is necessary to produce value for its customers" (Davenport, 1994, pp. 134-135). On the other hand, organization structure can be defined as "the sum total of the ways in which its labor is divided into distinct tasks and then its coordination is achieved among these tasks" (Mintzberg, 1983, p. 2).

Processes and structure are at the core of each operational effectiveness analysis that is being undertaken in order to increase the overall effectiveness and efficiency of the organization. Importance of process and structure analysis and diagnosis for in-depth understanding of the manner in which organizations are structured and the way they operate is the reason for which a profound insight on a contemporary methodology for analyzing and diagnosing these two components is presented in this paper.

The reminder of this paper is organized as follows. The next section is focused on process and structure analyses, i.e. techniques and tools for conducting these analyses. After that, an overview of process and structure diagnosis is given, as well as the tool for presenting diagnosis results to the stakeholders. Finally, in the conclusion section, limitations of the paper and a recommendation for practitioners are given.

2. PROCESS AND STRUCTURE ANALYSIS

Before tracking down processes and structure takes place, some preparations ought to be done. The most important preparations include activities such as: stakeholder identification and mapping, development of communication plan with them in order to get their support for the project, as well as early risk identification and making risk management plan. These activities will not be elaborated in this paper because it is out of its scope, but only after they are done properly, process and structure analyses can start.

In-depth knowledge about the processes and structure is necessary for each organization if it seeks to maximize effectiveness and efficiency of its operations. In order to learn about the processes and structure, and how the overall organization works, the first step that management of an organization ought to take is to acquire specific data and perform a set of analyses. The goal is to examine organization from multiple perspectives, after which these perspectives ought to be merged into one snapshot of an organization. In this section, these analyses are listed and depicted.

Process identification and classification. In order to successfully manage an organization, management needs to be familiar with the manner in which organization operate its day-to-day activities. In other words, business processes are the driving force of any organization (Hammer & Champy, 1993), which is why gaining an in-depth knowledge about them has become a necessity.

Therefore, the first step in getting to know the processes is to make a list of them. The result is a process register with the main processes or process areas. These processes are then being decomposed until the level of individual activities is reached. Since processes always achieve a certain result or output, process identification is recommended to start with identification of results or outputs, after which the task of identifying the processes that lead to them becomes a lot easier.

In the second step, identified processes are classified using one of the mostly used and accepted process classifications. Probably the most known process classification concept is the one developed by Michael Porter (Porter, 1985). Porter's value chain in which processes are classified into one of the following two groups: primary processes (processes that directly transform inputs into outputs, i.e. inbound and outbound logistics, operations, sales and marketing, and services) and support processes (those that provide support to the primary processes, i.e. infrastructure, human resources, technological development, and procurement). The other well-known process classification concept has been developed by Jay Galbraith (Galbraith, 1998). He has divided all processes into three groups. Processes at the back of the value chain include all the processes that are related to production, technology, product development, etc. Processes at the front of the value chain are those that have a direct user – external consumer. Processes in the middle of the value chain are the so-called infrastructure processes that have internal users, and that serve as a support to processes at the back and at the front of the value chain. Process classification ought to provide guidelines for further work with the processes, i.e. the sequence in which processes will be mapped, analyzed, and improved.

Process mapping and analysis. After the process classification is completed and priorities in working with processes are defined, the next step is to depict processes by mapping them out. Process mapping is an act of acquiring data about the process in order to make a graphical representation of all the activities and their sequence within the process flow in the regular situation, as well as alternative activities if some sort of

deviation occurs (Stefanović, Milovanov & Momčilović, 2013). The tool for process mapping is shown in Figure 1. Graphical representation of the process flow is given in Figure 2.

Process number	Process name	Process phase	Activity name	Activity description	Alternate scenario	Input/output documents	Duration (days)	FTEs

Figure 1: Process mapping template

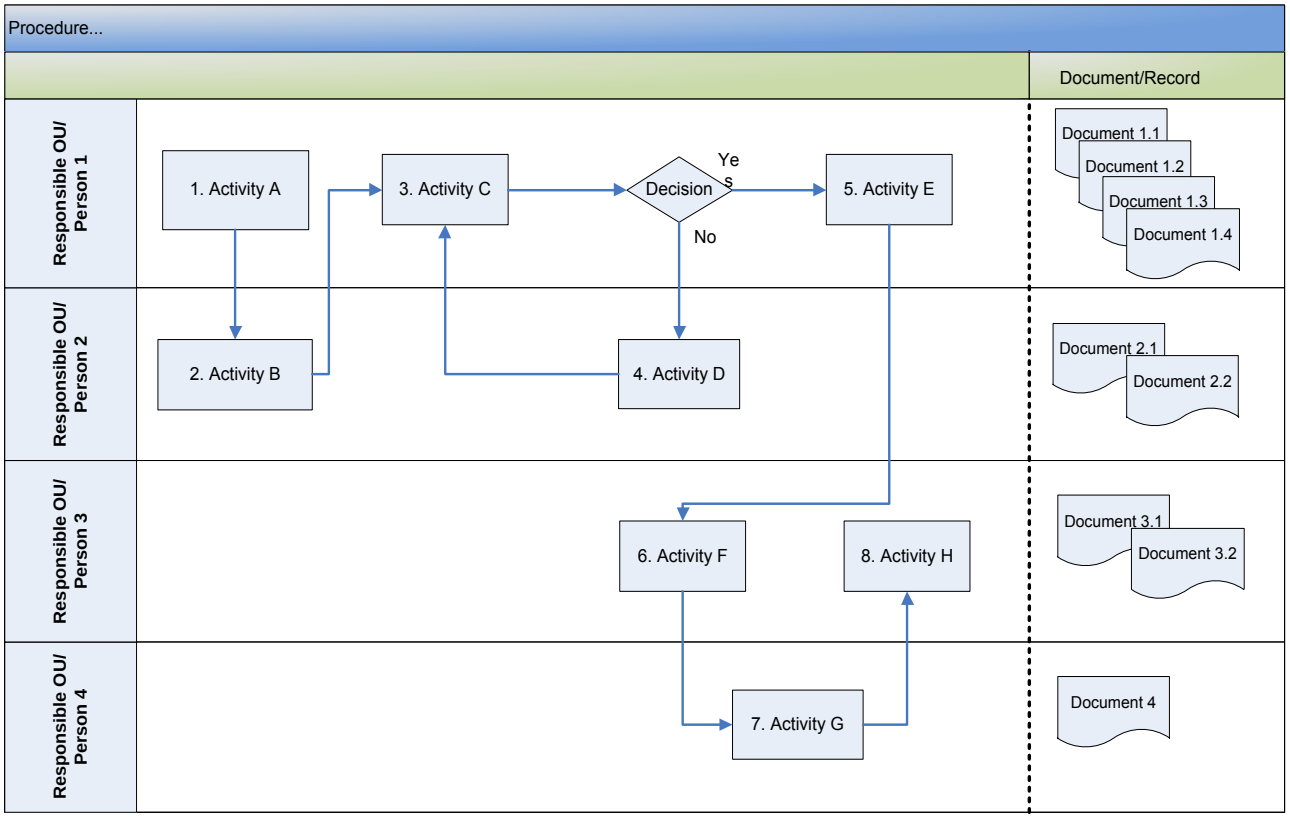

Figure 2: Process flow diagram

Obtained graphical process representation is a basis for performing several types of analyses. These analyses are expected to result in identification of the following: (1) process owner and other process participants, (2) key performance indicators (KPIs), (3) necessary competences for running the process, (4) value being added by the process, and (5) weak points and barriers.

Process/organization structure relationship mapping. Processes are not being performed by themselves, but rather by dedicated employees who are organized in a certain manner that ought to support maximization of the process performances. In other words, organization structure ought to be in the function of supporting the processes, no matter whether it is deliberately shaped or formed in an ad hoc manner. “Structures happen to be there, or, if not ready at hand, they are the outcome of the artful recombination of what is at hand under specific circumstances” (Ciborra, 1996, p. 111).

Therefore, the next step is to determine the part of the organization structure in charge for the process that is being observed, i.e. it is necessary to map the process flow through the organization structure. This kind of process representation provides additional information about weak points and barriers. Figure 3 provides an insight into the process/organization structure relationship mapping.

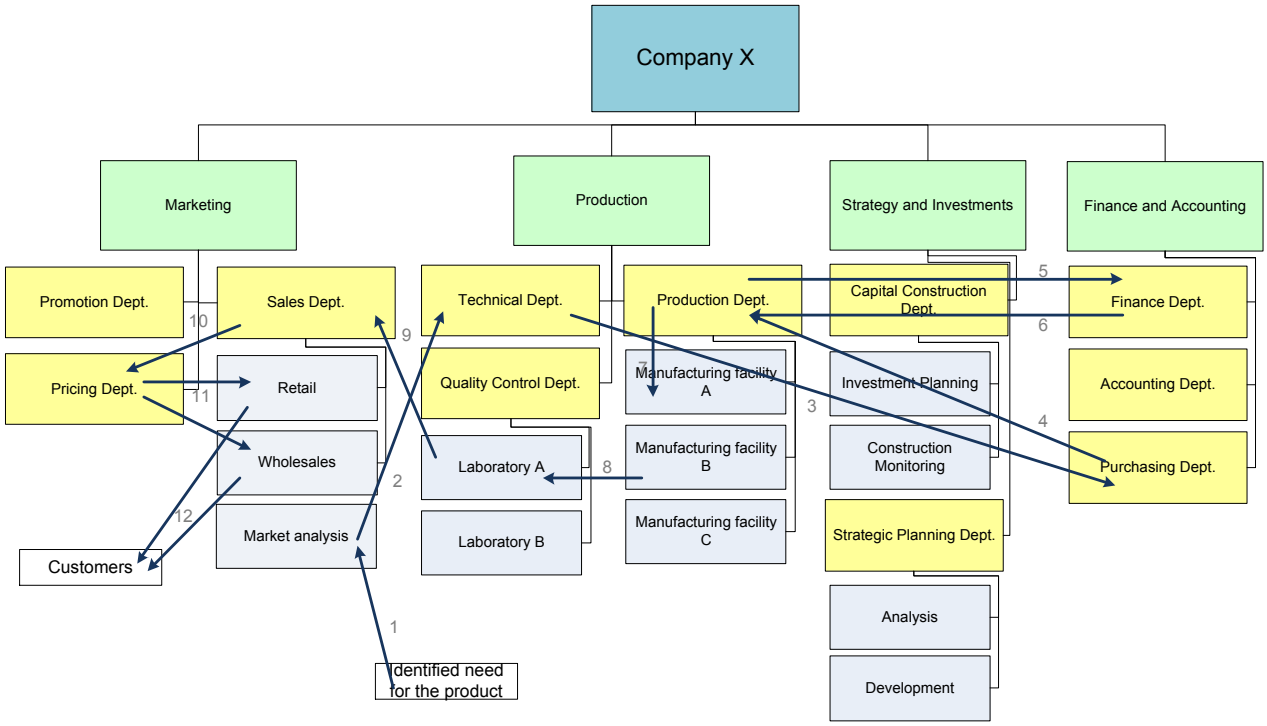

Figure 3: Process/organization structure relationship mapping

Organizational unit scope of work mapping. In this step, the researcher is taking a somewhat different perspective. Instead of tracking down the processes, the focus is now being turned toward the organization structure, i.e. organizational units in particular. The goal of this step is to determine which parts of identified processes are being performed by an organizational unit that is being observed. Therefore, while previous analysis shows the flow of one or more end-to-end processes through the organizational structure, this one is concerned with the sum of all parts of the processes (all activities) being performed by one or more organizational units. The tool for organizational unit scope of work mapping is exhibited in Figure 4.

Processes/ Activities	Market Analysis Dept.	Wholesales Dept.	Retail Dept.	Technical Dept.	Production Dept.	Organizational Dept. N
Activity A1	X	X				X
Activity A2	X		X			
Activity M					X	

Figure 4: Template for organizational unit scope of work mapping

Upon the completion of identifying all the activities being perform by one organizational unit, its scope of work is determined. If the sum of all organizational units' scope of work contains all the activities of all the processes that have been identified and mapped in the previous steps, it means that the researcher has done a superb job: the process mapping and process/organization structure relationship mapping are done in an appropriate manner. In other words, using both process and structure perspective, represent a control mechanism that checks whether all processes are identified and their flow through the structure is precisely depicted.

Structure of activity and workload per position analysis. Once when the processes and their precise flow through the structure are known, the research focus switches to each position in the organization individually. This level of analysis provides an understanding of micro level structure, i.e. the manner in which labor is divided into distinct tasks and then coordinated in order to achieve specified objectives. Two most commonly used techniques for analyzing activities being done and workload per each position are functional analysis and DILO (Day in the life of) analysis.

Functional analysis is based on collecting data related to the activities carried out by an employee in a specified position. The time frame for which these data are being collected may vary significantly, but it is usually a one year period. As far as data being collected concerns, they are usually as follows: (1) activity

name, (2) measurement unit, (3) time required for execution of a measurement unit, (4) number of measurement units for a designated period, (5) total workload in minutes or hours for the designated period, which may be obtained by multiplying (3) and (4). These data result in charts that show the time distribution per each activity, distribution of value added activities versus non-value added ones, existing bottlenecks in the processes, and whether a specified position requires more or less employees. Functional analysis may be done in two ways: by sending functional analysis template to an employee or employees occupying specified position in order to fill it in, or by interviewing the same employees. In each case, statements and figures in the template ought to be supported by hard evidence. Functional analysis template is shown in Figure 5.

Position/Organizational unit		**Name of an employee:**			
Number of activity	**Activity**	**Unit of measurement (UM) of the observed activity**	**Time needed for 1 UM in min**	**Workload from (start date) until (end date) in UM**	**Workload from (start date) until (end date) in min**
1					
1.1.					
1.2.					
2					
3					

Figure 5: Functional analysis template

DILO is an observational record of each activity performed by an individual during one working day or full shift including observations, quotes and comments. It provides the following information and benefits (Celerant Consulting, 2007): (1) a detailed understanding of how the activities are being performed, (2) insights into the issues and problems that arise on a day-to-day basis and how both of these are being managed, (3) distribution between value added and non-value added activities, as well as types, quantity and causes of non-value added activities, (4) understanding workload and the complete environment within which activities are being performed, (5) understanding of an organizational culture, and (6) builds credibility and relationship with employees being observed. Table 1 provides an insight into typical value added and non-value added activities.

Table 1: Typical value added and non-value added activities

Value added activities	Non-value added activities
- Working on a job - Working in a workshop - Receiving directions/coaching from supervisor - Safety required job preparation - Filling documentation into system/entering required data into computer system	- Waiting for work (no work allocated or between tasks) - Unofficial/excessive breaks (late start, over run on breaks, early finish) - Unnecessary movement - Pacing inappropriate (actual time to historical average or best demonstrated to quantify pacing) - Waiting time (for colleagues, permits, etc.) - Rework (job not completed correctly first time, repair job, extra time required, not using correct tools, etc.)

Headcount, spans of control and hierarchy analysis. These parameters are a direct consequence of an organization size. They ought to indicate whether the size and shape of the organizational structure are aligned with other organizational components.

Headcount may imply the overall remuneration costs, organization inertia/flexibility, necessary coordinating mechanisms, etc. This parameter is also a fertile ground for making various ratios that can be used in order to determine an appropriate size of some parts of the structure, as well as benchmarks against the competitors. Some of the ratios that may be taken into account are (Irwin i Cichocki, 2011): (1) number of employees in support function to total headcount, (2) number of billable employees to number of non-billable employees, (3) revenue per employee, (4) number of employees to new customer orders, (5) number of employees to number of customers, etc. The importance of having a proper headcount may not be

overstated. Having the right number of people enables an organization to get the work done in a most efficient manner.

Span of control affects the width of an organization. It is the number of employees reporting to one manager, thus making an organizational unit. Span of control refers to the amount of information coming to the manager from his direct subordinates. Contemporary organizations often have higher spans of control than was the case in the past. There are many reasons for this (Irwin & Cichocki, 2011): (1) the workforce is generally better educated, (2) managers are also better educated, (3) production technology makes it easier to apply consistent standards to work, (4) development of information and communication technology makes coordination and knowledge-sharing much easier, etc.

Hierarchy represents the height of an organization, i.e. the number of organizational levels. Hierarchy directly affects the responsiveness of an organization to the stimuli coming from its environment, as well as the P/A ratio (number of employees that directly create value to number of administrative workers). In organizations with tall structures (more organizational levels), it usually takes more time for an information to reach a relevant decision-maker, especially if he is located near the top of hierarchy and the source of information is at the bottom. This time lag causes slower response to the information, which reduces the overall responsiveness of organization. In addition, tall structures are characterized by low P/A ratio, which usually means that organization is highly bureaucratic and has high overhead costs. The following table (Table 2) provides a comparison between tall and flat structures.

Table 2: Tall and narrow versus broad and flat organizations (Irwin & Cichocki, 2011)

Organization structure shape	Advantages	Disadvantages
Tall and narrow	- Allows manager to communicate quickly with immediate staff - Allows close supervision and direct control - Feedback of ideas between immediate supervisors and staff is more effective - The fewer the staff, the lesser the management skills required	- Many levels of management mean higher cost of management staff - Large distance between top management and staff, poor executive communication and visibility - Less independence and decision authority for staff
Broad and flat	- Staff has better communication with top management - Costs less as organization employs fewer managers - Flat organizations are associated with higher level of employee morale and productivity - Encourages empowerment through delegation of authority and decision making	- Creates more supervisory responsibility for relatively few managers - Overloaded management leads to loss of control

Coordination mechanisms analysis. This analysis aims to highlight the existing coordinating mechanisms between employees, as well as their suitability. It starts by identifying liaisons between employees, which can be extracted from the process flow diagram or process/organizational structure relationship map. In the second step, prioritization of obtained liaisons is being done based on their impact on organizational performances. The list of prioritized liaisons represents the sequence in which a researcher ought to identify and analyze coordination mechanisms and their historical problems, starting from the most important liaison.

In order to analyze current coordination mechanisms and determine the gap between them and the actual requirements, it is necessary to do the following analysis for each identified liaison (Recardo, 2008):

- Importance. This is done by determining how critical each liaison is to the organization (this was done in the previous step in order to make a list of liaison priorities).
- Complexity. Greater complexity requires more sophisticated coordination mechanisms.
- Task uncertainty. The scale for assessing task uncertainty is 1 for predictable and repeatable task, while 10 is for ambiguous and unpredictable one.
- Interdependence. The scale for assessing interdependence is 1 for pooled interdependence (groups are relatively independent of each other, but contribute to the overall goals of the organization), 5 for sequential interdependence (outputs of one group become the input of the other group), and 10 for

reciprocal interdependence (certain outputs of each group become an input for the other group; collaboration needs to occur in both directions).

Figure 6 exhibits the manner in which coordination mechanisms are analyzed.

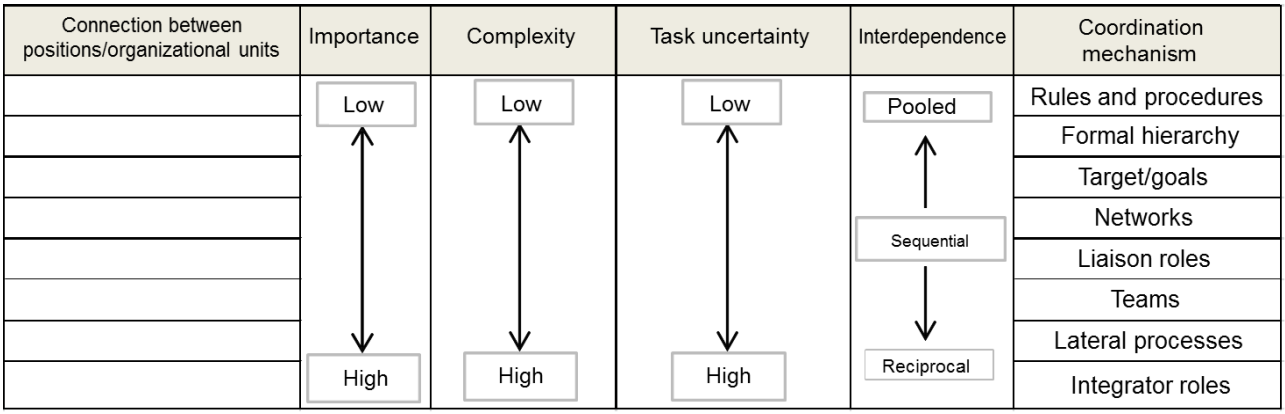

Figure 6: Coordination mechanisms identification table (Recardo, 2008)

Employee structure analysis. This analysis indicates the ability of the existing human resources within an organization to secure that on-going operations are run smoothly, and take part in the overall organizational development at the same time, in order for organization to seize new market opportunities and thrive in the long run. In other words, this analysis provides an insight into the human potential of an organization. It highlights the strengths and weaknesses in this domain, which is, without any doubt, the most important one. Indicators that explicitly or implicitly show human resources characteristics within an organization are the following: (1) age distribution, (2) qualification distribution, (3) quality of recruitment and selection process, (4) quality of training and development process, (5) reward and incentives system, (6) absenteeism, (7) employee turnover, and (8) remunerations (base salary and other monetary or non-monetary benefits that employees receive).

In addition to these, it is possible to perform a number of other analyses, while some of them may be done by a combination of some of the above. The choice of the analyses to be performed depends on the situation specifics.

3. PROCESS AND STRUCTURE DIAGNOSIS

Process and structure diagnosis is a step following the completion of analyses discussed in the previous section of this paper. After the results of each of the presented analyses are known and placed together, a researcher can start analyzing the relations between them. In the next step, all the results are being summarized (a synthesis of the obtained analysis results is being made) and again analyzed, but this time the analysis is being done in a holistic manner, for all the elements combined. Thus, the sum of these analyses results in the processes and organization structure snapshot that, after being subjected to a critical review, makes a process and structure diagnosis. In other words, process and structure diagnosis is a critical review of the state of processes and structure at a particular point of time.

Table 3: Diagnosis report example

Diagnosis parameters	Weak points	Actions to be taken	Benefits expected
Process (1... X)			
Organizational unit (1... Y)			
Position (1... Z)			
Headcount			
Spans of control			
Hierarchy			
Employee structure			

Process and structure diagnosis is a report that shows all the existing problems related to processes and structure, as well as the potential problems that may occur unless some actions are taken. After that, guidelines for actions are provided with the expected benefits. On the other hand, diagnosis may highlight positive aspects as well, depending on the desired effect of presentation. Therefore, the diagnosis report usually shows weaknesses (sometimes even strengths), actions to be taken, and benefits expected as a

result of these actions. The manner in which it will be presented may be customized to best fit the purpose. An example of the diagnosis report is exhibited in Table 3.

Process and structure diagnosis report is a starting point for process and organization structure design, i.e. for the first step in this process, which is the development of design principles and metrics. Diagnosis report broadly defines a domain in which alternative process and structure designs ought to be found. In other words, diagnosis report provides guidelines for making specific design decisions.

4. CONCLUSION

Process and organization structure play a very important role in creating a competitive advantage of an organization. On the other hand, since these two components cannot be observed and analyzed isolated from the other organizational components (e.g. strategy, human resources, organizational culture, etc.), but only through a network of complex interactions with them, it is quite clear that process and organization structure design efforts depend on these other components, but also have a profound effect on them. Therefore, it can be concluded that tracking down processes and structure is a very complex matter that does not consist of a simple series of sequentially related steps leading up to a predetermined goal. Process and organization structure design is much more than that. It is a process with logical sequence of decisions and actions that ought to be followed, but it also involves a great deal of intuition when it comes to searching for available solutions determined by the dynamic environment and internal factors specific to each organization.

What further complicates this process is the fact that there is no ideal solution for the processes and organization structure. It requires constant comparison between positive and negative traits of each solution and making a compromise. The aim is to achieve the closest approximation to an optimal solution as possible taking into account all the circumstances. However, a typical problem that arises while making a decision about the solution to be implemented is the lack of a proper feedback. This is due to the fact that effects of process and organization design typically have a delayed effect, which means that the results of chosen solution may be evaluated only after certain period of time passes from the full implementation of new processes and structure. This is usually measured in months or even years.

Even though authors are hoping that this paper presents a solid methodological foundation suitable for practitioners in order to develop their plans for tracking down processes and structures in various organizations, some limitations it suffers from are recognized. First, this paper does not provide all the techniques and tools available to the practitioner while performing process and organization structure analyses. However, the reader ought to keep in mind the complexity of this process and the limited length of this paper. Second, process and organization structure methodology presented in this paper is aiming at large and perhaps some medium-sized organizations. As such, it can be applied to small organizations, but with certain adjustments being made, which are not discussed in this paper. Finally, methodology presented here ought to be incrementally adapted to the circumstances specific for each organization. The manner in which the methodology ought to be modified is not the topic of this paper.

One general recommendation for practitioners can be extracted from this paper. It concerns general awareness about the importance of the topic presented here. Therefore, it is essential to communicate with the managers in all kinds of organizations about the importance of gaining an in-depth knowledge about the processes and organization structure. They ought to realize that this knowledge will enable them to continually improve the manner in which their organizations operate, which will affect strengthening of their competitive position in the market. Managers also need to know that tracking down processes and structure is not a one-time action, but rather a permanent process of monitoring the changes in the environment and other organizational components, as well as their effects on processes and structure. Only if they keep on tracking processes and structure inside of their organizations, they will enable them to continually increase effectiveness and efficiency of its operations, thus providing them at least a chance to thrive in this age of technological and market discontinuity.

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ROUTINES, CAPABILITIES, AND ABSORPTIVE CAPACITY INTERPLAY: A REVIEW AND RECONCEPTUALIZATION

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Abstract: *Researchers have often used constructs such as routines, operational capability, dynamic capability, absorptive capacity, etc., to explain various organizational phenomena, especially a competitive advantage of firms. As a consequence of their frequent use in different contexts, these constructs have become extremely broad and blurred, thus making a void in strategic management literature. In this paper we attempt to bring a sense of holistic perspective on these constructs by briefly reviewing the current state of the research and presenting a conceptual model that provides an explanation for the causal relationships between them. Authors hope that findings in this paper may serve as a foundation for other research endeavours related to the topic of how firms achieve competitive advantage and thrive in their environments.*

Keywords*: absorptive capacity, dynamic capability, operational capability, routines, inertia.*

1. INTRODUCTION

Field of strategic management is primarily concerned with the question of how firms develop strategies and thrive in their respective environments. In this quest, strategic management has developed theories and concepts that examine the environment and look inside the firm (Herrmann, 2005). Its goal is to explain underlying mechanisms and depict actions that ought to help firms in satisfying the needs of its stakeholders and outpacing the competition.

In the past few decades, the focus of the research has been partially shifted toward some specific internal aspects of firms, such as routines (Nelson and Winter, 1982; Cohen et al., 1996; Zollo and Winter, 2002; Feldman and Pentland, 2003; Becker, 2004), operational capability (Amit and Shoemaker, 1993; Winter, 2000; Schreyögg and Kliesch-Eberl, 2007; Helfat and Winter, 2011), dynamic capability (Teece et al., 1997; Gilbert, 2006; Schreyögg & Kliesch-Eberl, 2007; Helfat and Winter, 2011), absorptive capacity (Cohen and Levinthal, 1990; Kim, 1997a; 1997b; Van den Bosch et al., 1999; Zahra and George, 2002), etc., in order to explain the creation and retention of their competitive advantage. Even though these constructs were initially used to explain different aspects of organizational dynamics and competitiveness, in time they started to become extremely broad and less concise, as a consequence of their frequent use in different contexts. These days, the field of strategic management lacks clear understanding and differentiation between these constructs, as well as clear linkages joining them.

The identified gap in the strategic management literature has been the rationale for writing this paper. The effort was undertaken in order to precisely define these constructs based on literature review, make a clear boundary between them, and finally, since all of them are inseparable from the field of strategic management, make a clear connection between them. Thus the two primary goals of this paper are: (i) to review the most influential papers in strategy management literature in order to crystallize the meaning of the following constructs - routine, operational capability, dynamic capability, and absorptive capacity; and (ii) to reconceptualise their connections by integrating them into a conceptual model extracted from a literature review.

2. CONCEPTUAL FRAMEWORK

For a firm to be successful in the contemporary environment, it must maintain continuity of its on-going operations, while fostering innovations and change at the same time. Continuity and change come together when stability, hierarchy, specialization, formalization and centralization are coupled with attributes such as speed, flexibility and responsiveness (Graetz & Smith, 2008). In order to achieve a competitive advantage and growth, a firm must be capable to continuously reconfigure its resources and capabilities in order to adapt to changes in the environment (Argyris, 1996), but without

compromising the stability of its operations. This is especially true in a situation in which the management of a firm ought to pay attention to a much larger number of variables in the environment and their dynamics than was the case before (Stefanovic et al., 2011; 2012).

The ability to change continuously while keeping the efficiency is a core capability of successful firms, especially in the highly competitive, high-velocity oligopolies in which many contemporary firms compete (Brown and Eisenhardt, 1997). In other words, "a system has to develop boundaries, identities, procedures, practices, and competencies that bring about institutionalizing effects (replicability, inertia, selectivity, etc.) likely to damage the system"s adaptability and flexibility. Responding to those inevitable tendencies (trade-offs), an organization has to find ways to handle this risk of inherent dysfunctional flips and rigidity" (Schreyögg and Sydow, 2010, p. 1258).

In this paper we provide a review and propose a reconceptualization of several constructs that represent antecedents of competitive advantage of firms by achieving efficiency through stability and continuity, and at the same time, effectiveness through instability and adaptability.

2.1. Routines

"As companies grow, they develop structures and systems to handle the increased complexity of the work. These structures and systems are interlinked so that proposed changes become more difficult, more costly, and require more time to implement, especially if they are more than small, incremental modifications. This result in structural inertia – a resistance to change rooted in the size, complexity, and interdependence in the organization"s structures, systems, procedures, and processes... Quite different and significantly more pervasive than structural inertia is the cultural inertia that comes from age and success. As organizations get older, part of their learning is embedded in the shared expectations about how things are to be done. These are sometimes seen in the informal norms, values, social networks, and in myths, stories, and heroes that have evolved over time. The more successful an organization has been, the more institutionalized or ingrained these norms, values and lessons become. The more institutionalized these norms, values, and stories are, the greater the cultural inertia – the greater the organizational complacency and arrogance" (Tushman and O"Reilly, 1996, p. 18).

In order to discuss the concept of routines, we will adopt the approach of Nelson and Winter (1982), who begin their analysis of routines from the notion of skill, which they define as "… a capability for a smooth sequence of coordinated behaviour that is ordinarily effective relative to its objectives, given the context in which it normally occurs" (p. 73). Skill is a basic trait that determines the quality of work performed and things to be done. As far as routine concerns, although the term has been in circulation for decades, we are just beginning to understand its nature (Pentland and Feldman, 2005). Routine represents a general way of doing things, that is, a stable pattern of behaviour that characterizes organizational reaction to a specific internal or external stimulus (Zollo and Winter, 2002).

Historically, the term „routines" clearly referred to reccurent interaction patterns, that is, collective recurrent activity patterns (Becker, 2004). It is "an executable capability for repeated performance in some context that has been learned by an organization" (Cohen et al., 1996, p. 683). In a revision of the extent literature, Becker (2004) identified the following characteristics associated to the routine construct: (1) patterns, (2) recurrence, (3) collective nature, (4) realm of consciousness (mindlessness vs. effortful accomplishment), (5) processual nature, (6) context-dependence, embeddedness and specificity, (7) path dependence and (8) triggered.

When viewed from a distance, any particular organizational routine can exhibit a great deal of continuity over time, which leads some theorists to emphasize their role in organizational inertia and stability (Nelson and Winter, 1982). This stability-providing effect of routines is important for organizational learning, as well as for organizational efficiency increase. However, sometimes the stability-providing effect of routines does develop into a pathology. Repetition of specific activities takes place, even though there are no obvious evidence of benefits for this kind of behaviour. In other words, routines may lead to inertia (Becker, 2004).

Gilbert (2005) argues that two basic types of inertia are resource and routine rigidity. Resource rigidity stems from resource dependency, i.e. blinders created by resource dependence, and incumbent reinvestment incentives, i.e. a desire to preserve market power. Resource dependency means that

firm"s external resource providers, i.e. capital markets and customer markets, shape and constrain its internal decision-making process (c.f., Pfeffer and Salancik, 1978). Incumbent reinvestment incentives are found to exist in situations in which firms cannot acquire new technology, and therefore they increase investments in their current market positions (Gilbert & Newberry, 1982). On the other hand, routine rigidity may influence inflexibility of firm routines as well. In this view, routines are seen as repeated patterns of response that become reinforced through repeated use. Routines are self-reinforcing by nature and are not built to change. Gilbert (2005) explains that both resource and routine rigidity constrain adaptation, but they have different underlying causal mechanisms. "Data show that resource rigidity stems from unwillingness to invest, while routine rigidity stems from an inability to change the patterns and logic that underlie those investments. The first relates to the motivation to respond, the second to the structure of that response... By analogy, resource rigidity is concerned with movement along a line, while routine rigidity deals with the trajectory of the line... Threat decreases resource rigidity but increases routine rigidity" (Gilbert, 2005, p. 757). One of his main findings is that the response to discontinuous change in environment requires more than just commitment of resources. The underlying organizational routines that use those resources must also adapt accordingly. Therefore:

Proposition 1: *Resources and routines, if not questioned and re-examined periodically, have a tendency to become rigid due to the force of inertia.*

Having this in mind, the question that practically imposes itself is whether routines exhibit only continuity and repetition, or there is some other trait invisible when viewed from distance. Closer observation of routines reveals their different kind of nature, the one that is opposite to continuity and repetition. Viewed up close, routines change. They change continuously and endogenously, which leads various academics to emphasize their role in flexibility and change (Pentland and Reuter, 1994). In response to these apparently contradictory empirical findings, Pentland and Feldman (2005) argue that routines are continuously emerging systems with internal structures and dynamics. The internal structure of a routine can produce a wide range of different outcomes on the continuum between „very stable" and „constantly changing", depending on circumstances.

The stability and instability of routines are both desirable. This presents a paradox that continually challenges organizations to balance the two objectives (Poole and Van de Ven, 1989). Anand et al. (2012) argue that routines go through alternating cycles of intended stability in terms of adherence to the established procedures, and intended instability in terms of improvisation and change in these procedures. In other words, operational routines go through regular phases of renewal through organizational learning. In the absence of a renewal, adherence to routines tends to decay, leading to a state of higher entropy over time. The preceding arguments suggest the following proposition:

Proposition 2: *The greater the extent to which firms foster organizational learning, the greater the likelihood they will establish empirically proven routines that will be subjected to renewal as circumstances dictate.*

2.2. Organizational (operational) capability

The capabilities refer to a firm"s capacity to deploy and coordinate different resources, usually in combination, using organizational processes, to affect a desired end (Amit and Shoemaker, 1993). Hence, resource and capability represent two different conceptual levels. A firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semipermanently to the firm (Wernefelt, 1984). On the other hand, capabilities are focused on the combination and linking of resources, that is, capability represents a distinctive and superior way of allocating resources (Schreyögg and Kliesch-Eberl, 2007), and each firm gradually develops its approach to selecting and using specific resources (Schreyögg and Kliesch-Eberl, 2007), which is why it is also called organizational capability, or even operational capability. All these terms are treated as synonyms in this paper.

Organizational capability may also be regarded as a firm"s capacity to perform a specific activity or interrelated set of activities in a reliable and at least minimally satisfactory manner (Helfat and Winter, 2011). "Operational capability enables a firm to perform an activity on an on-going basis using more or less the same techniques on the same scale to support existing products and services for the same customer population." (Helfat and Winter, 2011, p. 1244) According to Winter (2000), an organizational capability is "a high level routine (or collection of routines) that, together with its

implementing input flows, confers upon an organization‟s management a set of decision options for producing significant outputs of a particular type" (p. 983). Hence:

Proposition 3: *Firms that incorporate appropriate routines on the selected resources during their operations will have a greater chance to create more effective organizational (operational) capabilities.*

As already implied in the section covering routines, organizational capabilities may fall into trap of becoming needless routines if their underlying logic is not subjected to continuous re-examination and evaluation. "Any capability therefore contains an inherent risk, that is, the risk of rigidity and helplessness in the face of fundamentally changing conditions. As a consequence, organizations are confronted with a dilemma: on the one side, they have to develop reliable patterns of selecting and linking resources in order to attain superior performance and competitive advantages and on the other side this endeavour constitutes – at least in volatile markets – a considerable risk of becoming locked into exactly these capabilities" (Schreyögg and Kliesch-Eberl, 2007, p. 919). Based on the aforementioned:

Proposition 4: *Organizational (operational) capabilities, if not questioned and re-examined periodically, have a tendency to become rigid due to the force of inertia.*

An organizational capability is the result of an organizational learning process (Schreyögg and Kliesch-Eberl, 2007). Organization learning is a form of informational updating through which decision makers develop an understanding of relationships between organization actions and outcomes (Levitt and March, 1988). Thus, the factors that define an organization‟s capabilities evolve over time: they start with resources, then move to processes and values, and finally end with culture (Christensen and Overdorf, 2000). Seen through these lenses, it is not surprising that creating outstanding organizational capability has a synergistic effect, i.e., it enables the company as a whole to be more valuable than the sum of its parts (Brockbank and Ulrich, 2009). Therefore:

Proposition 5: *The greater the extent to which firms foster organizational learning, the greater the likelihood they will establish adequate organizational (operational) capabilities.*

2.3. Dynamic capability

In an environment where technological, regulatory, and competitive conditions are subjected to rapid change, persistence in the same operating routines quickly becomes hazardous. If the change is not only rapid but also unpredictable and variable in direction, operational capabilities and even the higher-order learning approaches will need to be updated repeatedly. Failure to do so turns core competencies into core rigidities (Leonard-Barton, 1992). Thus, established organizational capabilities ought to be changed as quickly and frequently as environment changes. In other words, a firm must adapt its operational capabilities fast enough in order to cope with the environment dynamics.

Firm‟s ability to thrive over time lies in its ability to integrate and build upon its current competencies while simultaneously developing fundamentally new capabilities. This is called a „dynamic capability". According to Teece et al. (1997), dynamic capabilities may be regarded as "the firm‟s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (p. 516). In other words, organizations must develop dynamic capabilities in order to survive in the contemporary environment.

Dynamic capabilities are those that promote a seemingly radical change in how a firm makes a living (Helfat and Winter, 2011) on the basis of its existing (operational) capabilities. They refer to the capacity to renew competencies (Teece et al.,, 1997). When change in the environment is discontinuous, residual fit usually remains between the already established firm‟s capabilities and some portion of the environment, which means that established capabilities as well as new ones must coexist for some period of time. This is what dynamic capabilities really mean: moving from one competency configuration to another, and maintaining multiple competencies that address inconsistent contexts simultaneously (Gilbert, 2006). "Dynamic capabilities in this sense build different types of capabilities, which amount to experiential, improvisational, and highly fragile processes of reconfiguration, integration, and acquisition of resources. They make use of real-time information, simultaneously explore multiple alternatives, rely on quickly created new knowledge, are governed by very few simple rules, do not get stored in the organizational memory, and thus do not produce

predictable outcomes. Their strength no longer flows from architecture but rather from its ability to continuously produce new constellations and solutions" (Schreyögg & Kliesch-Eberl, 2007, p. 919). The foregoing literature review suggests the following proposition:

Proposition 6: *The greater the extent to which firms develop various organizational (operational) capabilities, no matter whether in a successive or simultaneous manner, the greater dynamic capabilities they possess.*

Thus, an organization"s dynamic capabilities depend on simultaneously exploiting current technologies and resources to secure efficiency benefits and creating variation through exploratory innovation. Maintaining an appropriate balance between exploitation and exploration is critical for firm survival and prosperity (March, 1991; Teece et al., 1997). This is not to say that dynamic capabilities are supposed to replace operational capabilities, but rather that, as Graetz and Smith (2008) argue, the key characteristic of duality thinking that organizations must achieve if they are to exploit and explore, is the bidirectional partnership between continuity (efficiency through operational capabilities) and change (flexibility and responsiveness through dynamic capabilities).

Therefore, aligning organizations to simultaneous exploitation and exploration is a task of dynamic, rather than static alignment (Raisch and Birkinshaw, 2008), and the firm"s capability to manage this alignment is called organizational ambidexterity (Duncan, 1976; March, 1991). Even though organizations need both types of capabilities (exploration and exploitation), organizational ambidexterity can be viewed as an organization-level dynamic capability (Jansen et al., 2009), but only if management can repeatedly and intentionally orchestrate firm assets and resources (O"Reilly and Tushman, 2007). "As a dynamic capability, ambidexterity embodies a complex set of routines including decentralization, differentiation, targeted integration, and the ability of senior leadership to orchestrate the complex trade-offs that the simultaneous pursuit of exploration and exploitation requires. Developing these dynamic capabilities is a central task of executive leadership" (O"Reilly & Tushman, 2011, p. 6).

Cao et al. (2009) have shown that ambidexterity is fostered by close interrelations between existing and new knowledge. They argue that synergistic effect can be achieved by allowing existing resources to be more fully employed to acquire new capabilities, while at the same time permitting new knowledge to be more fully integrated into the existing pool of resources. Therefore, since organizational ambidexterity is a dynamic capability, it can be concluded that dynamic capabilities must be developed through learning. Zollo and Winter (2002) focused on organizational learning as a source of dynamic capability, which they defined as "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (p. 340). They argue that dynamic capabilities emerge from the co-evolution of tacit experience accumulation processes with explicit knowledge articulation and codification activities. It thus follows:

Proposition 7: *The greater the extent to which firms foster organizational learning, the greater the likelihood they will establish dynamic capabilities.*

2.4. Absorptive capacity

An absorptive capacity is the ability of a firm to identify, assimilate and apply useful external knowledge (Cohen and Levinthal, 1990). It can also be acknowledged as the capacity to learn and solve problems (Kim, 1997a; 1997b). In order to identify, assimilate and exploit new knowledge, a firm must possess prior related knowledge. The prior knowledge allows assimilation of new knowledge only if some portion of it is closely related to the new knowledge (Cohen and Levinthal, 1990). An absorptive capacity tends to confine a firm to operate in a specific technological domain (Cohen and Levinthal, 1990), which may eventually lead to the pattern of inertia (Nelson and Winter, 1982). Hence, two propositions follow:

Proposition 8: *The greater the extent to which firms foster organizational learning, the greater the likelihood they will have effective absorptive capacity.*

Proposition 9: *Absorptive capacity, if not questioned and re-examined periodically, has a tendency to become rigid due to the force of inertia.*

“Absorptive capacity is more likely to be developed and maintained as a byproduct of routine activity when the knowledge domain that the firm wishes to exploit is closely related to its current knowledge base. When, however, a firm wishes to acquire and use knowledge that is unrelated to its ongoing activity, then the firm must dedicate effort exclusively to creating absorptive capacity (i.e., absorptive capacity is not a byproduct).” (Cohen and Levinthal, 1990, pp. 149-150) Creative utilization of new knowledge will be permitted if some part of the prior knowledge is fairly diverse, although still related (Cohen and Levinthal, 1990).

Van den Bosch et al. (1999) argued that Cohen and Levinthal"s (1990) implicit feedback loop (absorptive capacity→ learning → new absorptive capacity) is mediated by the environment in which the firm competes and its success in coping with it. Firms facing stable or turbulent environments tend to organize themselves differently and emphasize different ways of combining knowledge (Lane et al., 2002).

On the other side, Zahra and George (2002) have established a conceptual link between absorptive capacity, organizational (operational) capability and dynamic capability by defining absorptive capacity as “a set of organizational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organizational capability.” (p. 186) According to them, acquisition, assimilation, transformation and exploitation are organizational capabilities that build on each other to yield absorptive capacity. In this way, absorptive capacity may actually be seen as a dynamic capability that enable firms to create and deploy the knowledge necessary to build other organizational capabilities, that is, production, marketing, sales, etc. (Zahra and George, 2002). Therefore, two propositions are extracted from the foregoing claims:

Proposition 10: *Absorptive capability is a dynamic capability*.

Proposition 11: *The greater the absorptive capacity/dynamic capabilities that firms possess, the greater the possibility they will develop various organizational (operational) capabilities.*

Based on a thematic analysis of the literature, Lane et al. (2002) found that organizational learning and absorptive capacity coevolve with each influencing the other. However, they concluded that little attention has been given to the implications of exploitative versus exploratory learning for absorptive capacity development. Thus, Lane et al. (2006) suggested a more detailed definition of absorptive capacity as a firm"s ability to utilize externally held knowledge through three sequential processes: (1) recognizing and understanding potentially valuable new knowledge outside the firm through exploratory learning, (2) assimilating valuable new knowledge through transformative learning, and (3) using the assimilated knowledge to create new knowledge and commercial outputs through exploitative learning. Hence:

Proposition 12: *The greater the extent to which firms have established absorptive capacity/dynamic capabilities, the greater the likelihood they will foster organizational learning.*

3. CONCEPTUAL MODEL

The propositions extracted from the literature review of the constructs in this paper determine connections between them, thus making a conceptual model depicted in Figure 1.

The first trait of the proposed model that ought to be emphasized is the relationship between dynamic capabilities and absorptive capacity. The literature review began by considering them as two separate constructs, but ended with the premise of them actually being one construct. The second obvious trait of the model is positioning of operational capabilities as a central construct inextricably intertwined with all the other constructs.

Resources and routines, as well as operational and dynamic capabilities, if not questioned and re-examined periodically, have a tendency to become rigid due to the force of inertia. The explanation for this statement lies in the velocity of the contemporary environment in which majority of firms operate (Stefanovic et al, 2012). In the ever-changing environment, sustainable competitive advantage is a thing of the past. Contemporary environment has shifted the focus towards the temporary competitive advantage (D"Aveni et al, 2010), because the true sustainable competitive advantage is rare and declining in duration (Ruefli and Wiggins, 2002). Long-term survival ought to be embedded in new

variations, internal selection that correctly reflects external selection pressures and top management"s capacity for recognizing and retaining viable strategic initiatives (Burgelman, 1994).

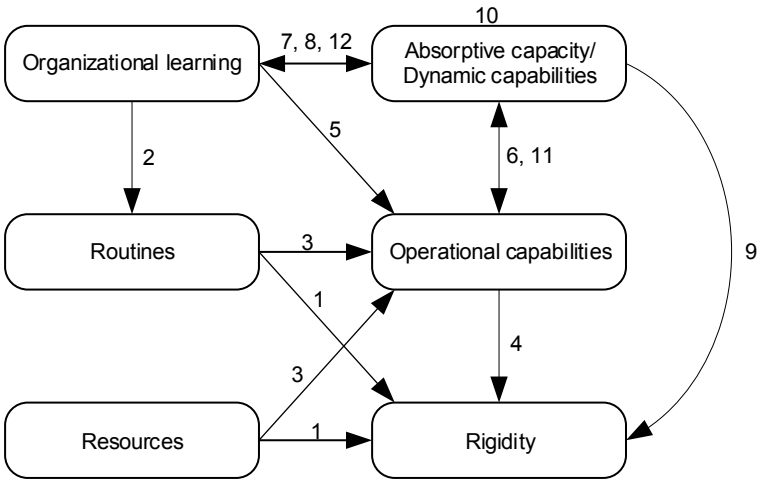

Figure 1: Conceptual model of routines, capabilities, and absorptive capacity interplay

In other words, firms ought to engage in the process of continuous organizational learning in order to cope with the changes and surprises arising from the environment. Fostering organizational learning within firms increases the likelihood of establishing empirically proven routines that will be subjected to renewal as circumstances dictate. Firms that learn how to incorporate these routines on the selected resources during their operations will have a greater chance to create more effective operational capabilities suitable for the specific situation. Therefore, widespread organizational learning increases the likelihood of creating adequate operational capabilities, but also plays an important role in establishing dynamic capabilities/absorptive capacity. Nevertheless, there is also a direct causal relationship between operational and dynamic capabilities. Thus, the greater the extent to which firms develop various operational capabilities, no matter whether in a successive or simultaneous manner, the greater dynamic capabilities they possess. Finally, the greater the extent to which firms have established dynamic capabilities/absorptive capacity, the greater the likelihood they will foster organizational learning and develop needed operational capabilities.

4. CONCLUSION

The constructs of routines, operational capabilities and dynamic capabilities/absorptive capacity have been applied to a wide variety of phenomena in recent years. Their growing appeal is a reflection of their versatility, but this versatility carries the risk of a lack of clarity in meaning and differentiation between these constructs, as well as clear linkages joining them. In this paper, we attempt to bring a sense of holistic perspective by briefly reviewing the current state of the research and highlighting what is known about the topic. After that, the conceptual model is provided based on the propositions extracted from the literature review of the constructs.

Even though this paper provides a reconceptualization of causal relationships between routines, operational capabilities and dynamic capabilities/absorptive capacity, and may present a small contribution to the holistic perspective on how firms achieve competitive advantage and thrive in their respective environments, authors are fully aware of its limitations. First and foremost, this paper presents a theoretical review and reconceptualization based on this review. In other words, the conceptual model presented in this paper has no direct empirical confirmation. It is simply a synthesis of various research papers, which is why its approval in an empirical setting is needed. Second limitation concerns the scope of the literature reviewed. Even though some of the most influential articles on the topics of interest are covered, and they share practically the same underlying logic, maybe some less-known articles would indicate other aspect of the gap in the strategic management literature we are trying to bridge. Thus, a review that covers a broader scope of articles covering these topics is needed.

We hope that this paper encourages future research on the dimensions, causal relationships linking them and contributions of the constructs. It is reassuring that researchers in diverse organizational disciplines have recognized the explanatory power of routines, operational capabilities as well as

dynamic capabilities/absorptive capacity, and we hope that their future uses of this concept will show greater recognition of its multiple dimensions and their links to create and sustain a competitive advantage of firms.

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DEVELOPMENT OF PROCESS MODEL OF ENTERPRISE ORGANIZATION

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Abstract: *This paper examines the emergence and development of process model of the enterprise. Here are given the early contributions of authors who have indicated the occurrence of the process model. Basic theoretical models are given, ranging from Deming`s flowchart and Porter's value chain model over Davenport`s model, horizontal organizations: Rumler and Branch, John Byrns and Ostroff, to the reengineering of Hammer and Harmons organizational models and processes. In particular, a model of quality management systems and model thin horizontal structures are shown. Based on them, the basic model of process organized company is given and its main characteristics are described.*

Keywords: *model, process, development, structure, horizontal organization*

1. INTRODUCTION

Process approach to the organization of companies that emerged at the end of the twentieth century is not at the same time brought the establishment of a general process model of the enterprise. Some authors in their papers describe their models, but none of them was good enough to become generally accepted - universal (general). Each of them contained the individual "process" elements but was not universal, and today there is no single model that would be in the science of the organization ranked next to well-known model of organizational structure: functional, multidivisional, project and matrix, but there are more, originating from a variety of authors and institutions. Such a single model can be reached by a critical analysis of the known models and by the results of process approach researches published so far, and the integration of the knowledge thus obtained.

2. THE START OF THE DEVELOPMENT OF PROCESS MODEL

The process model has a long course of development, which began in the early years of the twentieth century, and its fundamental shaping was achieved in the nineties. In a period of about 80 years, a number of practitioners and scholars have contributed to the emergence and development of the process model.

Gant created Gantt chart at the beginning of the twentieth century - a graphical way to view the flow of production through a series of horizontal segments, showing the duration of the manufacturing operations and their relationship. By these diagrams Gant became unconsciously the originator of the process model.

Fifty years later the Network planning was designed - graphical and quantitative methods for the analysis of complex enterprise, consisting of a large number of interconnected horizontal activities. Two techniques were developed: 1) CPM (Critical Path Method), and 2) PERT (Program Evaluation and Review Technique). Although they were methods of planning and management, they paved the way for the arrival of process model by the horizontal propagation of events.

A significant shift towards a process model was brought by the emergence of the theory of the system - the system approach of the mid-twentieth century, as it has begun studying a whole composed of parts - as a whole system. The system is defined as a set of related elements (entities) and their properties, integrated relationships between themselves and these properties. (Berrtalanffy, 1951.) Is a graphic system shown as a box with a horizontal structure - general qualitatively defined and relatively stable ranking of relationships between elements of the system - subsystem and horizontal inputs and outputs. Each system can be seen as part of the - a subsystem of a higher system, and it can also have its subsystems.

A significant contribution to the research enterprise as a system given by the 60s of XX century, Forrester, who was a pioneer of industrial dynamics - a mathematical approach to the study of the forces at work in the company and moving to one of his causes. To study the dynamics of the industry, it is used for simulation, which is specially developed methodology graphical and mathematical modelling of the functioning of the company as a whole, consisting of horizontal associated elements of state and change of state elements.

According to Forrester, the business system is a complex organization and functioning of the various states and flows controlled flashback coupled circuits. In his operation on the target-oriented, and only operation is the result of the incorporation of various activities. Business system is a subsystem of broader and more complex systems, and participates in the exchange of goods, energy, information, etc., the transformation of the lower usability in more, their exchange and consumption. Specific environment and structure of parts of the system as well as their mutual coupling significantly affect the behavior and performance achieved. (Forrester, 1963, by Rajkov, 1977.)

All these results have created a solid theoretical framework and some practical experience on which several authors in the second half of the twentieth century, published his models to generate a process approach.

3. PREVIOUS THEORETICAL MODELS

3.1. Deming Flowchart

One of the first process model given by Deming, even in 1950 at the commencement of his famous lectures in Japan. The model shown on figure 1, he used to explain to Japanese managers the interplay of individual parts of the system quality. Deming described it as "a network of independent components that work together to achieve the objectives of the system".

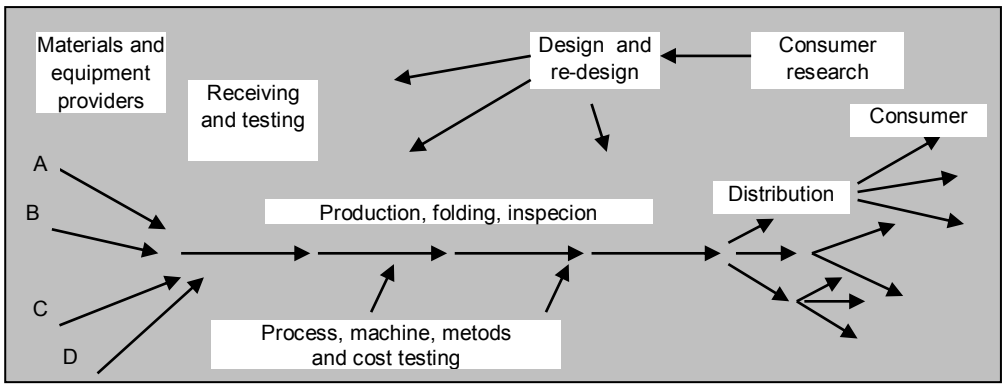

Figure 1: Production shown as a system (Deming, 1996.)

Deming has already used Flowchart - graphical display system components in a horizontal range of activities necessary for the creation and distribution of products.

3.2. Porter`s model of the chain of values

For further development of the process model, the fundamental importance of the Port`s value chain model, (published in 1985.), which contributes to the achievement of competitive advantage. "Competitive advantage can not be understood if the company is not seen as a whole. For analysis of the sources of competitive advantage, it is necessary systematic examination of all activities performed by firms, and their interactions. Every company has a set of activities that are performed in order to design, manufacture, marketing, delivery and support of its products. All of these activities are shown on figure 2 value chain of each company consists of nine generic categories of activities that are characteristic way related to each other." (Porter, 2007).

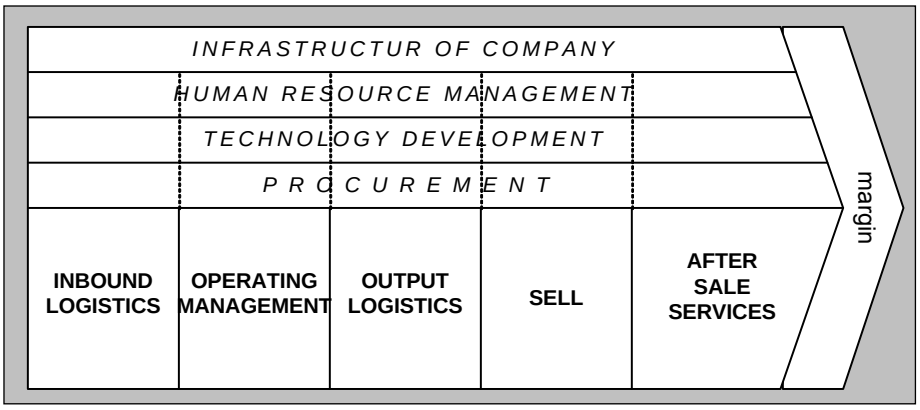

Figure 2: Porter's value chain (Adapted from Porter, 2007.)

Porter then viewed the company as a whole (process), which consists of two groups of horizontal activities (sub-processes): 1. PRIMARY - contribute to the creation of new values of the company through five generic activities: Inbound logistics, Operations, Output logistics, Sales and Service After Sales and Service and 2. *AUXILIARY*, which provide basic support, but also to each other, by providing: Inputs, Technology, Human resources and Other functions at the firm level.

3.3. Horizontal organization Rumler and Brache

Rumler and Brache (Rummler, Brache, 1990). assume that organizations behave as adaptive processing systems, which convert various input resources into outputs of goods and services, which supply the market. These organizations are based on, to processes for, structures, measures, rewards, and resources.

People within a working, functional silos, focus on what is best for a given function, often to the detriment of other functions. Rumler and Brache among the first propose the organization of activities, structures, measures and rewards, around horizontal processes.

3.4. Horizontal organization John Byrne

Byrne in 1993. popularized the term "Horizontal organization" and gave the definition of the model oriented towards business processes. Horizontal organization is described as the removal of both functional as well as the hierarchical boundaries. They all work together, within multidisciplinary teams, conducting key processes such as product development.

Byrne described horizontal organization model which contains the following elements:
1. A company is built on about three to five key processes, not tasks, with specific goals and each executive process is given to the "owner of process".
2. Hierarchy is flattened, shallow. Supervision (supervision) is reduced, fragmented tasks are combined, work that brings value was eliminated, the number of activities of the process is reduced to a minimum the number of teams in the implementation process is as small as possible.
3. Teams manage everything. The teams are the main building blocks of the masonry, with limited supervision, because they themselves manage them. They are responsible for the executive measurable goals.
4. Contacts with suppliers and customers are direct.
5. All employees are informed and trained.
6. Customer satisfaction, rather than a capital increase or profitability is a primary driver, and performance measures. Profit will come and capital will grow, if the customers are satisfied.
7. Performance team is rewarded. The review and payment, reward effects, the results of the whole team and not just the individual. (Byrne, 1993.)

3.5. Davenport's model of integrated company

Davenport (Davenport, 1993.) was among the first focused on the improvement and process improvement in this regard stressed the crucial importance of information technology. Model integration of an enterprise (figure 3), which was established as part of the improvement of its processes, can be considered as the first practically usable process model company. However, it is quite a general view of the processes in the company, and Davenport has not focused his attention to its further improvement. Still visible is its horizontal flow, the main processes and their relationship and taking into account the customers and retailers. Unusual is the unification Engineering and Marketing.

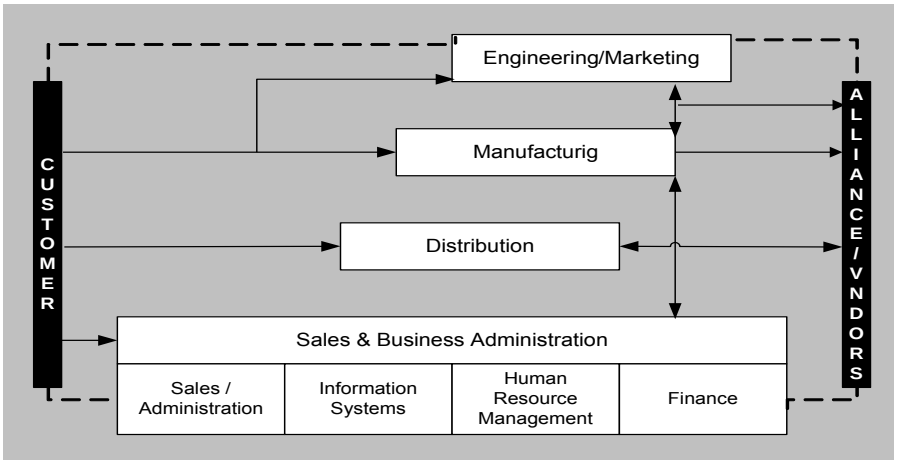

Figure 3: Davenport`s model integration off enterprises (Adapted from Davenport, 1993)

3.6. Horizontal organization Frank Ostroff

Ostroff 1999. offers the first viable concept map the horizontal arrangements under which explains what the horizontal organization, what it looks like, why it is important, as it leads to performance improvement, where appropriate, to introduce and how to develop. He explained the twelve primary key principles for the formation of horizontal organization. The five principles relate to:
1. organizing around basic cross-functional process, not about the tasks or functions;
2. setting process owner or manager who will take responsibility for the main process;
3. the formation of teams, not individuals, as the foundation of organizational design and performance;
4. reducing hierarchy by eliminating jobs that do not create value;
5. integration with customers and suppliers.
The other seven principles relate to institutional changes:
6. allowing employees to make decisions important to the team's performance;
7. use of information technology to assist people to reach performance goals and deliver proper value to the customer;
8. highlight multiple competencies and train people to solve problems and work productively in cross-functional areas within the new organization;
9. promote multiple skills, abilities, creative thinking and flexible response to the new challenges that arise in business performing teams;
10. teaching people trained primarily in specific functions or departments to work in partnership with others;
11. measuring target output process performance such as customer satisfaction, employee satisfaction financial contributions;
12. building a corporate culture of openness, cooperation and collaboration, which focuses on continuous improvement of performance and evaluate accountability, well-being and empowerment of employees. (Ostroff, 1999.)

With these principles Ostroff gave a graphical representation of the model, but it only shows the position of teams within the classical vertical structure and not widely usable.

3.7. Process reengineering by Hammer and Champy

A decisive contribution to the implementation of the process approach in practice achieved reengineering processes since 2001. firmly suggested Hammer and Champy. "It is no longer necessary or desirable to companies organize their work around the division of labor Adam Smith. Jobs oriented task in today's world, customers, competition and change the date. Instead, companies must be organized around business processes." (Hammer, Champy, 2004). According to them, it means the next ten changes in the company:
1) Work units change - from functional departments to process teams.
2) Jobs change - from simple tasks to multidimensional work.
3) The role of the people is changing - from controlled to authorized decision-making.
4) Shall be prepared for the job - the practice of education.
5) The focus of enforcement measures and compensation shifts - from financial results.
6) Changes to the criteria for promotion - from the productivity capabilities.
7) Values change - from patronizing the creative.
8) Managers change - from supervisors become coaches.
9) Changes to organizational structure - from hierarchical to flat.
10) The Executive Directors are changing - from the counter points to the leader.

These changes represent the essence of reengineering, which is described as follows: "Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in contemporary critical success criteria such as cost, quality, service and speed." (Hammer, Champy, 2004.)

3.8. Harmon`s model of organization and process

Harmon (Harmon, 2003) says we should leave the organizational chart because under it we do not know which organizational unit is responsible for a process. He used the name of an organization chart which shows the three main processes: R&D, Sales and Marketing, Manufacturing and Order Fulfillment group and Auxiliary processes. Each of these processes consists of several sub-processes, and the processes are divided into activities. To view the process Harmon uses rectangles with rounded corners to distinguish the organizational units (departments) showing by rectangles with normal angles. View the processes of enterprises with the help of an organization chart is important because "department don`t produce profits; value chains and processes produce profits." Therefore, "organizations need to focus on the flows and relationships that actually add value and produce product for customers." (Harmon, 2003.)

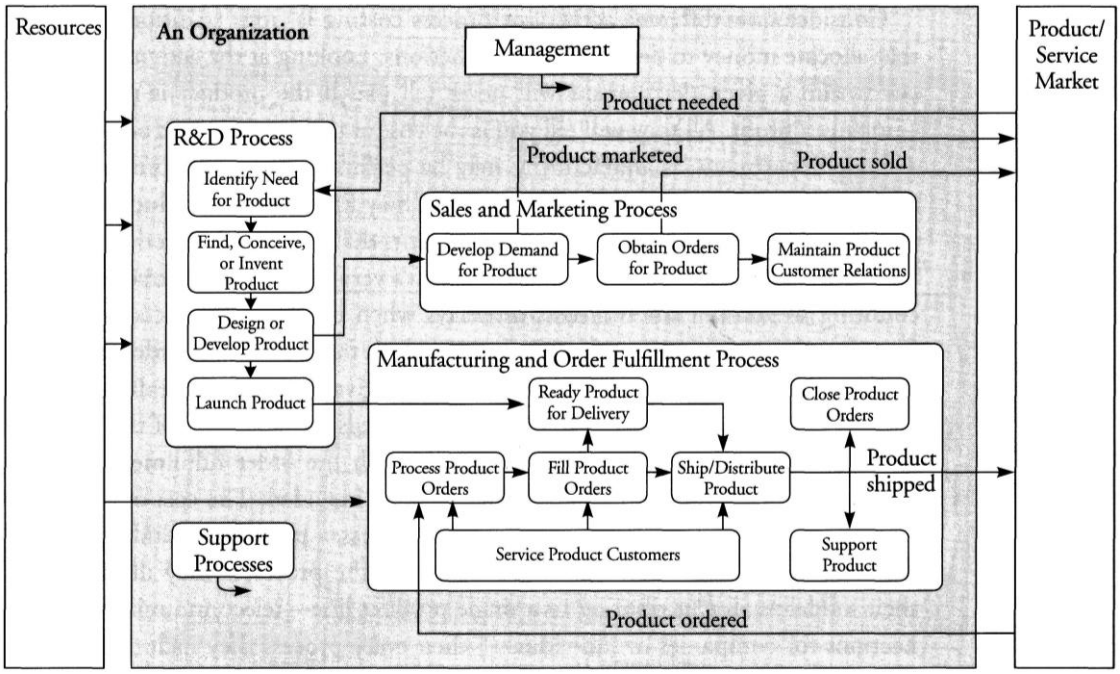

Figure 4: Harmon`s organization chart (Harmon, 2003) (On basis General Elseivier permission)

3.9. Model of anatomical structure of the business system

A group of autors at FOS developed a model of anatomical structure of the business system (Radović, 2008.) with four processes: Research and Development, Production, Business and Management, which consists of ten subsystems: 1) The basic activity, 2) Marketing, 3) Supply, 4) Sale, 5) Economics, 6) Finance, 7) Personnel, 8) Legal-normative, 9) Control) and 10) Development. For this model a detailed process approach of the 12 steps was developed, among them a central place occupies 5. Identification and classification process. This approach - engineering process is carried out in a number of organizations.

4. QUALITY MANAGEMENT MODEL

ISO 9000 published in 1984. developed rapidly, so that the version of the year 2000. was based on the process approach. For an organization to function effectively, it must determine the number of related activities and to carry out their management. Activities or groups of activities, using resources, and managed in order to enable the transformation of inputs into outputs, can be considered as a process. Often the output element from one process directly forms the input element to the next. Application of processes within an organization, together with the identification and interaction of these processes, and the management of them, to obtain the desired results, it can be called a "process approach".

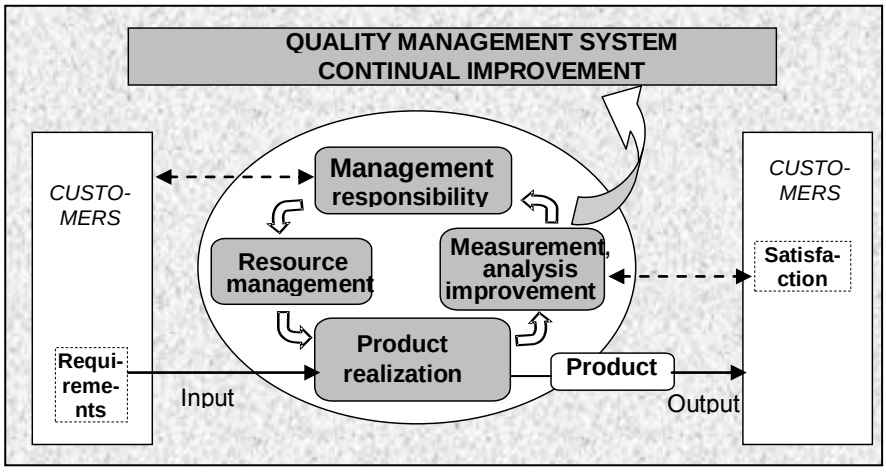

Figure 5: Model of quality management system based on processes (Adapted from SRPS ISO 9000:2005)

Model quality management system based on processes (Figure 5) shows that customers play a significant role in defining requirements as inputs and monitor their satisfaction which is determined by how the

organization meets their requirements. The model is fully consistent with systems theory, a control uses a feedback mechanism, which consists of the measurement and analysis of data collected for the purpose of continuous improvement.

5. MODEL THIN HORIZONTAL PROCESS STRUCTURE

The idea of tanks - flattened horizontal structure was quickly accepted as a way of achieving a process approach in organizations. It particularly applies to the logistic and operational aspects of business. One of the models of tanks is shown on figure 6.

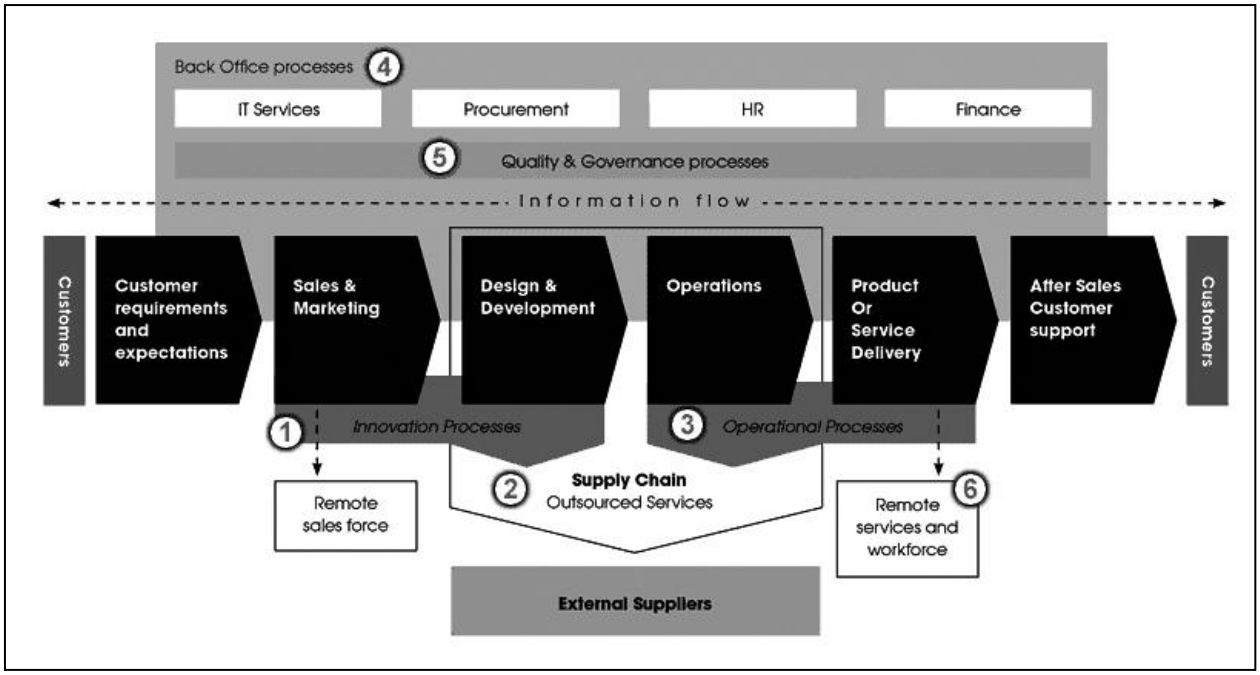

Figure 6: Model thin horizontal process structure (With Lean Business Thinking permission)

In this model, it was pointed out that there are six key process groups:
1. Innovation Processes - Development processes usually involve transforming customer's requirements and information along the value stream.
2. Lean Supply Chain Development - It is important to recognize that outsourcing can provide lean levers for improvement.
3. Lean Operations - Sales, Procurement and Manufacturing.
4. Lean Back Office - Within your organization there are a series of non customer facing, but business critical processes.
5. Quality Lean - Lean techniques signpost a different role for the Quality organization.
6. Service - Lean thinking is directly applicable to service industries. It is important for service delivery teams to have a clear understanding of the characteristics of service (value) that the customer cares about.
Company Lean Business Thinking using this model as a starting point in the acknowledgments of consulting services for process improvement.

6. BASIC MODEL OF PROCESS ORGANIZED COMPANY

Based on the characteristics previously described models can form a general - a universal model, which can be used as a starting point in the application process approach in each company. How it is used as a basis for the design process on the folder might be called the basic process model of enterprises, and its essential one feature are:
1) The model assumes that the company operates in an environment with market principles of business, making sure there is the process of marketing management (MM) and customer relationship management (CRM) through which establishes relationships with customers that defines their requirements and monitor the achievement of satisfaction.
2) The model also implies that the main objective of business enterprise economic efficiency - profit making, which is why there is a process of financial management (FM).
3) The products and services of the company is in the process of devising their own research and development (R&D), but are used and the results of R&D and others.

4) The company's activity is achieved in the process of operations management (OM), supported by the process of supply chain management (SCM).
5) Needed quality of products, services and business processes is realized by QM and appropriate integrated management system standards: quality, environmental protection and employee safety.
6) People are creative factor in business and management, and they can engage in teamwork - teams and managing established through the owner of the process, which is under the process of human resource management (HRM).
7) The structure of the model is made by the listed horizontally oriented processes, which are shown by arrows, and their informational links that are indicated by dashed lines, which establishes an IT process (IP). It is organized as an information system ERP type and should provide support to the management and processing teams and achieve integration process.
8) Top management in collaboration with the owners determine the strategic framework - vision, mission, objectives, strategies and policies.

The elements of the process model of enterprises and their relationship are shown on figure 7. As you can see, the display processes and sub-processes using the horizontal arrow, which reflects the nature of the process: the horizontal orientation of the flow of converting inputs into outputs.

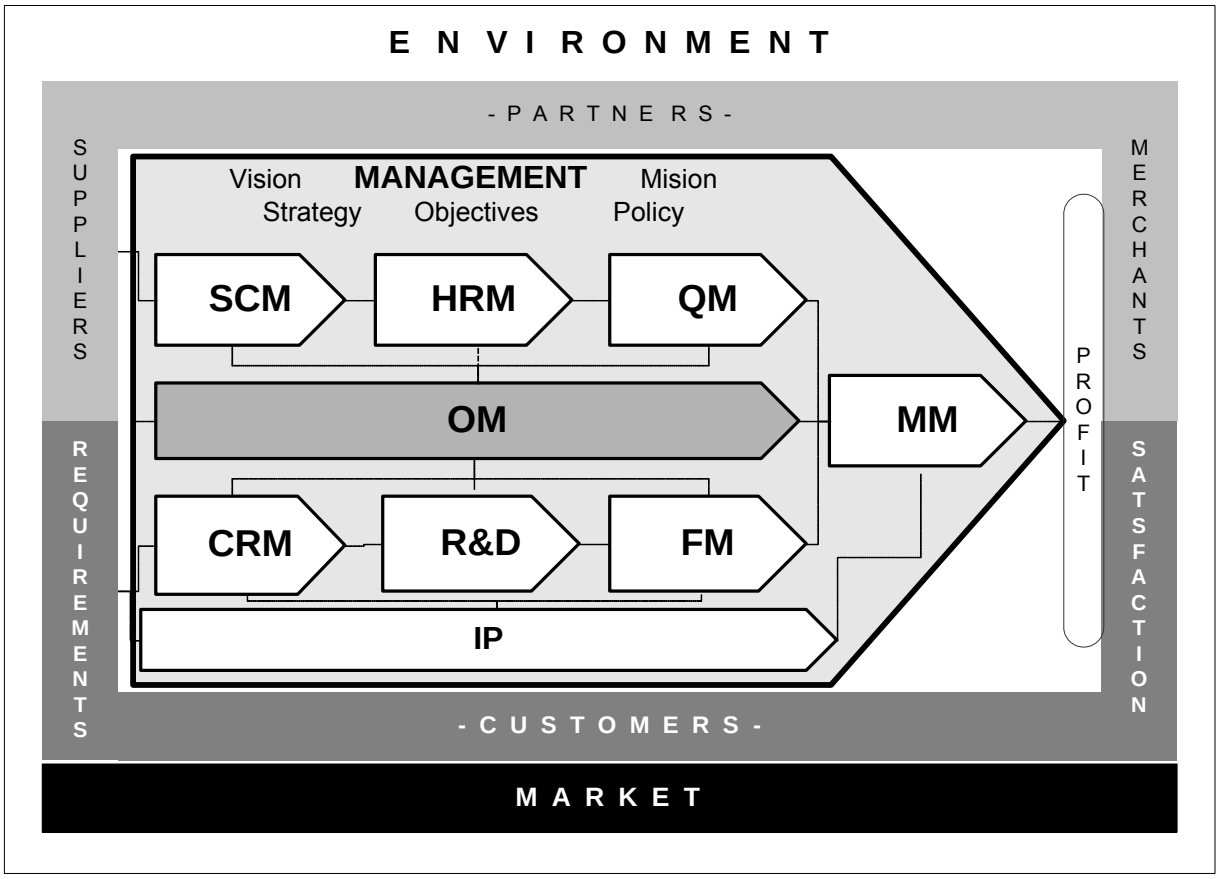

Figure 7: The basic model of a process of organized enterprises

Dashed lines connecting subprocesses indicate that the model involves multiple interconnectivity process. In the model is clearly visible role of top management to integrate processes and direct corporate performance by defining a framework of business factors. The model clearly shows that the final users are the main reason for the company's operations, the good organization of its processes, realized profit, operating in partnership with its suppliers and distributors.

7. MAP OF PROCESSES AND ITS CREATION AND PRESENTATION

These models reflect the views of their authors by the process approach. When implementing these models in practice for any particular company it is needed to create a process map, which describes in detail a process organization. To view maps of the process there are many different methods (standard) and software tools such as Method Integrated Definition (IDEF), Workflow Management (WfM), Unified Modeling Language (UML), Business Process Modeling Notation (BPMN), Business Process Modeling Language

(BPML) and so on. (Comparative analysis of the most important methods - standards have been published in: Ryan,K.L.Ko, Stephen,S.G.Lee, Eng Wah Lee (2009) and Recker,J., Indulska,M., Rosemann,M., Green, P., (2009). It is important to note that the process creates a special folder for each company, and that the process model is unique for all companies, except that adapts to each individual case.It is also important to distinguish between the process model as a general view of the processes in the company from a folder process that gives a detailed view.

8. CONCLUSION

The process model of the company has evolved over several decades of the twentieth century. A significant contribution to its development was given by several authors, for which there are several models. Analytical approach separates their main features, and it is given in their graphical representation. Due to the complex nature of the process approach integrating a feature of all of these models can come to one basic process model that clearly and unambiguously determines the way of the company. It is general enough to be applied to all companies and specific enough to be clearly different from other models of organizational structure. Further, the proposed model includes all the processes that exist in modern enterprises. Therefore, when working on the implementation of the process approach in every enterprise it can be used as a starting point for understanding the processes of the company and determine its process structure. Then it should be used as the basis for creating detailed maps of its processes using a variety of methods, standards and procedures to identify, describe and improve process.

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RELATIONSHIP BETWEEN BUSINESS ENVIRONMENT AND ENTREPRENEURIAL ACTIVITIES

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Abstract: *This paper will present causal relationship between entrepreneurial ventures and the business environment in which such activities are initiated. Academic research in this direction emerged in last few decades, and they point to the undoubted importance of this topic for economic development at the national and global level. Many authors have indicated the complexity of relations and interactions between entrepreneurship and the environment, and have emphasized the importance of certain factors that simultaneously represent potentials and threats for these businesses. Also, although it is clear that the environment influences the encouragement of entrepreneurship and its success, the influence in the other direction should not be neglected, since these ventures largely affect the business environment, especially if they are numerous and significant for other companies.*

Keywords*: Entrepreneurship, environment, Porter's structural analysis, Population ecology theory, Resource dependence theory*

1. INTRODUCTION

Although entrepreneurship has its roots in changes and development of the society, it has become a subject of studies only in the last few decades (Fayolle, 2008). For a long time it has been held that entrepreneurship is not something that should be paid attention on in academic circles. However, we witness the fact that the modern economy is actually based on entrepreneurial ventures in different stages of development of the societies. Special attention was devoted to this concept during the last decade of the twentieth century, as evidenced by many indicators such as number of researchers involved in these issues, number of published scientific papers with the topics related to entrepreneurship, number of scientific papers with this problem presented, and so on. In many countries, especially in Europe, entrepreneurship provides solutions for many economic problems, and improves national economies.

Entrepreneurship can be, and often is motivated by the situation observed on some specific market, but this relation can be observed in the opposite direction, and then we can say that entrepreneurship in some way creates a market or its activities. This paper will present the relationship between entrepreneurship and the business environment, regarding the changes that occur in the environment as a result of the existence or non-existence of entrepreneurial consciousness and activities. In developed countries, entrepreneurship is usually on an extremely high level, and therefore allows the economies of these countries to develop much faster than it is the case in developing countries. This, however, does not mean that encouraging entrepreneurship is an easy task, but the fact is that it is necessary to work on it, because that opens up new possibilities, provides space for innovation, and, in the end increases degree of competition, leading to the various qualitative and quantitative benefits for many participants on the relevant market.

2. OVERVIEW OF ENTREPRENEURSHIP THROUGH STRUCTURAL ANALYSIS

Terms "*entrepreneur*" and "*entrepreneurship*" in different societies have different interpretations. Thus, in the United States entrepreneur is a person who runs his *own*, *new* and *small business* (Drucker, 2007). However, this should be considered with caution, since it is assumed that not every new business is an entrepreneurial venture. In Germany these terms are associated with the concepts of power and property, so entrepreneur (*Unternehmer*) is considered to be the one who owns, but at the same time runs his business. In each case, regardless of whether it is a new business, or an own business, or a combination of both of these conditions, the importance of innovation is usually emphasized (Drucker, 1984).

Although there are different points of view, generally, none of them denies the claim that entrepreneurship is based on economic and social foundations of the community in which it occurs and persists. Also, entrepreneurship is almost always associated with a risk, especially when it is related to some kind of innovation. Indeed, the practice shows that many entrepreneurial ventures have ended infamously, and it is believed that the main causes for this outcome are actually the entrepreneurs themselves, that is those of them who start such businesses, but are unaware of what is engaging, so they are not prepared for

challenges that are in front of them. This especially applies to the activities that are closely related to high technology, for example. Consequently, we might say that entrepreneurship involves a combination of creativity, planning, and risk-taking (Kuratko, 2013).

The market position of the company depends on a number of factors. Also, the market itself is created and developed in accordance with the appearance and operations of new subjects. This means that there is a strong causal relationship among all these elements. That way enterprises affect the business environment in which they survive and develop.

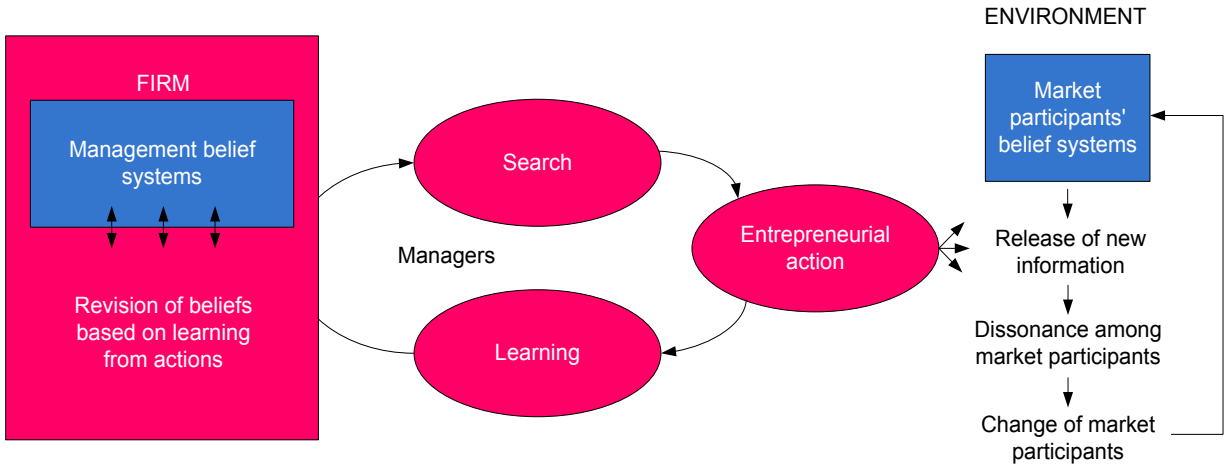

Figure 1: Entrepreneurial perspective on the firm-environment relationship (Smith & Cao, 2007)

Many studies have been conducted in order to analyze the complexity of these relationships. It is clear that in the first step environment imposes certain restrictions, but also provides certain opportunities for the individual enterprise. An important role is often played by the strategy that the company uses. Strategy can be seen as an integrative result of all the other aspects of the organization, so it needs to include internal aspects of the structure, procedures, people, culture, as well as all environmental processes (Jaško et al., 2013a).

Michael Porter notes that not all industries offer equal opportunities for the sustainable profitability, and not all organizations use equally the opportunities offered by the industries (Porter, 2008). He believes that enterprises through a selection of strategy clearly affect the improvement or worsening of their positions in the industry.

As a basis for the analysis of the environment, Porter suggests a structural analysis, which emphasizes five basic factors that describe the attractiveness of an industry:

1. Threat of New Entrants
2. Rivalry Among Existing Competitors
3. Bargaining Power of Buyers
4. Bargaining Power of Suppliers
5. Threat of Substitute Products or Services

The threat of new entrants in an industry is one of the key indicators of competitiveness. From the standpoint of individual enterprises, higher barriers for entry reduce the threat of new competition and ensure the position of existing companies. This means that the threat of new entrants depend on barriers to entry and the reactions of existing companies who expect this new company (Jaško et al., 2013b).

Rivalry among existing competitors involves various forms of price competition, the struggle for better promotion, bigger and better after-sales service, and includes a number of competitors that determine the degree of concentration, degree of product differentiation and barriers to entry.

Bargaining power of buyers means that the stronger buyer is in a better position to influence the reduction of prices, higher quality of products and services, and thus contribute to the achievement of profitability of the industry. Buyers are stronger and their impact on producers is higher in case where they are concentrated, when they have large individual purchases, when they possess a lot of information about products or services, when there are substitutes for the main product and when products or services are not differentiated.

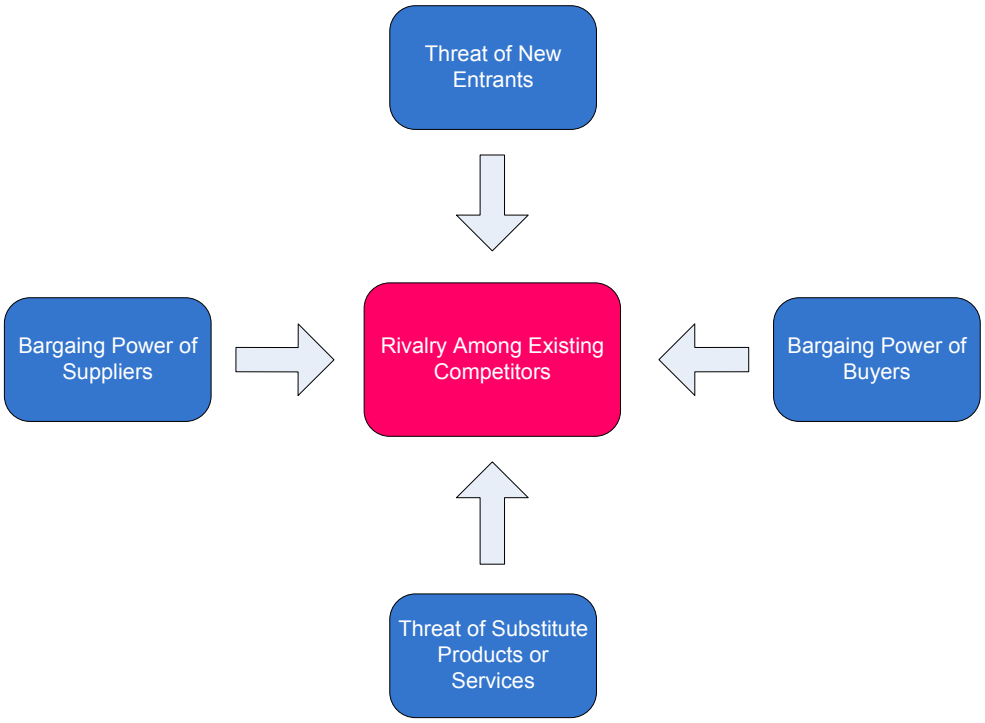

Figure 2: The five competitive forces that shape strategy (Porter, 2008)

Suppliers may also affect business results through the influence on the price, terms of sale, the quality and availability of the required raw materials. They are stronger and their bargaining power is greater in cases where there are no substitutes for the necessary inputs, when these inputs are important for the production of a specific product, when there are only a few suppliers of necessary inputs, when there are more buyers of its product, etc. Otherwise, the supplier is in a position to protect his only customer through reasonable prices and good quality.

The existence of substitute product significantly affects the demand for a particular product. Its sale is restricted in case where consumers can buy a similar product, the product of the same quality, or the product that has the same utility value. Danger of substitutes is higher when there is no exclusive consumer loyalty to the original product. An enterprise can minimize the risk of substitutes through good-differentiation of its products or if it achieves significant cost advantages over competitors (which will make the price of its products more attractive to the customer).

If Porter's considerations are observed through the prism of entrepreneurship, then we can come to conclusions that clearly show the importance of entrepreneurship in creating the image of the business environment. In fact, each of these factors significantly defines the entrepreneurial potential in a particular area or in a particular industry, but also depends on the existing entrepreneurial structure. Let us consider the example of manufacturers of certain components or semi-finished products. They are stronger if there are only few of them, so they have excellent position that allows them to dictate the terms of dealing with other business entities. On the other hand, manufacturers in the next phase of process want to acquire these necessary resources at better conditions. Accordingly, they are willing to somehow motivate entrepreneurs to start up businesses of common interest, in order to provide what they need at a lower price than the one that is already offered. The similar story is with the products substitutes. Often, it is practically impossible to obtain a specific product (component, semi-finished product) or the product is simply not acceptable from the point of the spending power of the local population. In this situation entrepreneurial spirit comes to the fore, and this is the chance for these producers that make a product that has similar characteristics and meet same needs, but is more accessible than "the original one".

However, the lack of entrepreneurial initiatives can scare potential foreign investors. Generally speaking, in developing countries production is significantly cheaper than in developed countries, and therefore the world's major companies often try to relocate at least part of their production in order to reduce their own costs. That way, through contracts with local companies, they switch production on potentially more profitable base. This trend is especially prevalent since the beginning of twenty-first century, in various industries. Besides the benefits for these companies, a chance is seen by the local governments, but also by the manufacturers or suppliers of parts and components that should be incorporated in the final products.

Global companies are counting on these local entrepreneurs, because they hope to get what they need at a lower price than it would have been if production is located somewhere else. Of course, the proper quality must be achieved, because these companies cannot afford to make final products of poor quality due to the lower cost, since it would affect their credibility, and that is the last thing they want to happen.

3. MODERN APPROACHES TO THE RELATIONS BETWEEN BUSINESS ENVIRONMENT AND ORGANIZATIONS

The importance of entrepreneurship in the contemporary business environment can be seen in different ways. One of the important concepts that follows the creation and development of new business is the *Population ecology theory*. This concept was created some forty years ago. Hannan and Freeman noted that during the observation of mutual influence and interaction with the environment it is much easier to group and classify organizations in certain categories (Grundstén, 2004). Those organizations are observed as organisms in the process of natural selection, and therefore special attention should be paid to the birth of the organizations, their growth and development, and death. Authors believe that the behaviour and results depend on several factors associated with a particular organization, and these factors are (Hannan & Freeman, 1993):

- niche width,
- inertia and change,
- density dependence,
- age dependence,
- resource partitioning.

Although this concept initially was not focused on entrepreneurial ventures, it is spotted its great applicability in this context over time. Accordingly, Aldrich believes that the theory of entrepreneurial behaviour should (Grundstén, 2004):

1. pay more attention to the capacities provided by the environment;
2. notice the importance of other organizations that are part of the environment that affects the new company;
3. consider interdependence of organizations;
4. take into account the sequence of events associated with organizational foundings;
5. pay special attention to the unique strategies used by companies that are specialized in different industries or populations in the early years of life;
6. work together in teams to build longitudinal community-based samples of organizational populations; and
7. develop comprehensive studies of entrepreneurial behaviour over time.

In the context of taking entrepreneurial action, the emphasis will be placed on the market niche that organizations occupy. Organizations are actually founded due to entrepreneurial initiatives, appearance or creation of new consumer needs, changes in market conditions, government regulations, but there is a great variation in their population. If the niche is relatively new, a number of organizations will collapse in the selection process, because they are not compatible with the environment. Those that survive will make a relatively stable population, with very similar characteristics. Once stabilized, this population will have a relatively stable structure due to internal and external constraints (Jaško et al., 2013a).

According to this theory, the organizations arise ("are born") and disappear ("die") depending on the density of the population in a particular niche. If the niche has a small number of organizations, it gives a strong impulse for entrepreneurial activity and the establishment of new organizations, and reduces the likelihood that the organization will go bankrupt. On the other hand, if the niche has too many organizations, high rivalry will increase the probability of organization bankruptcy, and reduce the attractiveness of the branches for the establishment of new organizations. Dynamics of organizational populations within a niche occurs in the manner that was presented on the previous picture.

The practical application of the population ecology theory is reflected in the observation of organizations considering them as specialists or generalists. Organizations generalists focus on a broad niche - they offer a wide range of products and services and meet the needs of many different groups in the market. Specialists focus on a smaller number of products and services, and meet needs of a small number of groups or even just a group of clients (who still numerically may include a large number of members). Depending on the ambition and the capacity of the entrepreneur, his new ventures will be directed precisely to one of these two categories.

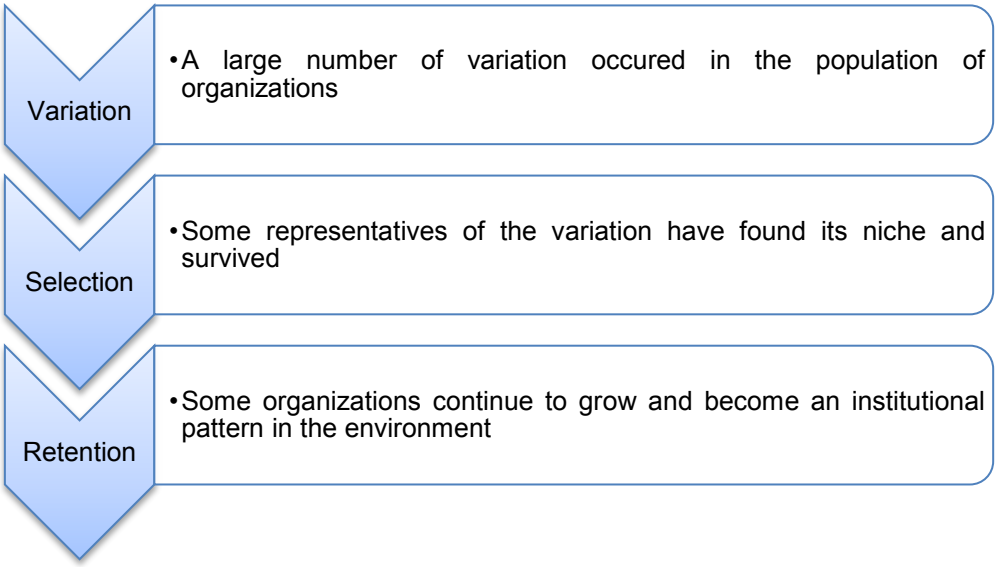

Figure 3: Dynamics of organizational forms in population ecology (Jaško et al., 2013a)

Certainly, one cannot say that one type is better or worse than the other - it depends on a number of factors, but it is possible to make some conclusions that are based on practice and logical judgment. Thus, specialists are generally more capable in business in the narrow area in which their operations coincide with companies generalists because they react faster, they are more flexible and better adapted to the specific conditions of these market segments. However, they are still more sensitive on changes in business environment because they do not have the sufficient size and business insurance in case that the environment negatively affects them. If specialists have problems in their performing, there is no some other activity that can compensate their efforts. On the other hand, generalists have a wider area in which they operate, which makes them some way protected from changes in the environment, and that reduces the risk of their existence. Demand in some areas may decline, but it is unlikely that the combined problems arise in all businesses, because these segments are substantially different. Specialists do not have that kind of security. In accordance with that, generalists can perform partitioning of resources. They can strategically allocate resources from one segment to another, and therefore provide more stable capital flows and cash flows compared to generalists.

If we look at the width of these niches, we can conclude that the broad niches are more appropriate for generalists, while narrow niches are more suited to companies specialists, because they better achieve their advantages in such environments respectively. Changes in niches also affect the chosen strategy of organizations. If the environment is stable, specialists have the advantage. However, if there is a change in the environment, the nature of that change should be considered. Rapid changes favour organizations generalists, since they have enough resources to survive and adapt to the new environment. On the other hand, changes which do not come up with major quakes favour specialists because they are generally faster and they better adapt to new conditions. Since these changes do not carry too much of quakes, they do not need any significant resources in order to survive.

Thus, the theory of population ecology is one new way to explain the organizational dynamics. Many phenomena, such as creation and deterioration of small organizations, structural similarity of organizations in similar environments, dynamics of disappearance and changes in organizations are explained by this approach. However, the disadvantage of this theory is that it looks at the environment as the only significant impact on the organization, ignoring the internal factors, and sees the choice of strategy with the positioning in organizational niches as the only factor of success, but that does not have fully justification in the environment. Therefore, it is advisable to take into account other relevant factors, or combine the theory with additional approaches.

Another concept that discusses this issue is the *Resource dependence theory*. According to this theory, as the name might suggest, organizations depend on the availability of certain resources, and as such, in many situations they need to interact with other market participants in order to provide them. In this way, they become dependent on the environment (Grundstén, 2004). The authors of this theory, Pfeffer and Salancik believe that it is necessary to focus on the interaction of the basic six dimensions, which are (Pfeffer & Salancik, 2003):

1. Concentration - the degree of dispersion of power and authority in the environment;

2. Munificence - the availability of critical resources;
3. Interconnectedness - the number and types of relations between the participating organizations;
4. Conflict - disagreement regarding the objectives:
5. Interdependence - the degree to which one organization influences the other;
6. Environmental uncertainty - the impossibility to predict future accurately.

These elements interact in a specific manner, which is presented by the next scheme:

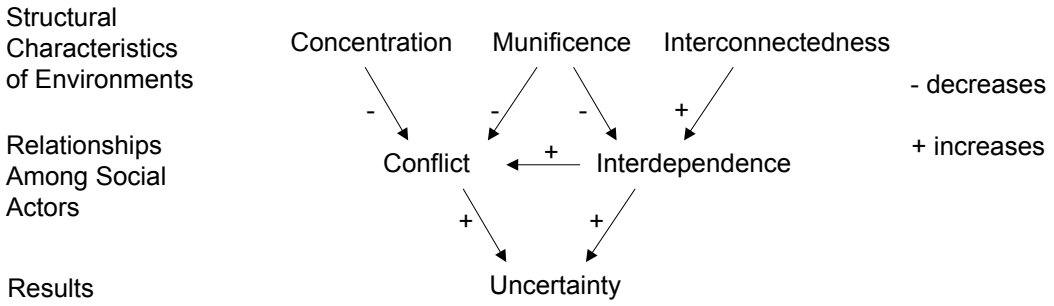

Figure 4: Relationships among dimensions of organizational environments (Grundstén, 2004)

Similar to the population ecology theory, it is possible to make conclusions concerning the relationship between environment and entrepreneurship. It is clear that the availability of resources has large positive impact on the establishment of new businesses, but it is not the only factor that should be taken into consideration. Since these relationships are extremely complex, it is necessary to observe all these elements in interaction in order to gain an objective picture of the potentials for taking entrepreneurial activities. These two theories still differ to some extent, mainly due to the fact that the population ecology theory holds that organizations are reactive and passive, and believes that they will survive if the environment allows them to, while according to the resource dependence theory, organizations are active, able to fight for their position every time the environment changes. These differences are presented in the following table:

Table 1: Two frameworks for entrepreneurial environments (Grundstén, 2004)

Population ecology theory	Resource dependence theory
Acts of the entrepreneur are predominantly deterministic.	Acts of the entrepreneur are primarily volitional.
The entrepreneur's choice are predicated and molded by the industry.	The entrepreneur makes strategic choices to secure the best transactions with the environment.
The environment is a set of influences which selectively permit some ventures to survive.	The environment is a pool of resources which the entrepreneur selects and acquires to establish his venture.
The entrepreneur is an exponent of environment and an instrument of economic development.	The entrepreneur masters fate and makes strategic choices to minimize threats and exploit opportunities.

Regardless the fact that these approaches observe organizations and entrepreneurs from different aspects, there is no doubt that both concepts have their foundation in practice, and that, as such, they have great significance. All authors who have considered this issue agree that there is a mutual causal relationship between organizations and environment, but that in each case the relation is specific and based on a number of factors. Therefore conclusions regarding this relationship can only generalize and represent a broader view of the problem that is a cornerstone, but cannot be precise guidance for behaviour in specific situations.

4. CONCLUSION

Although entrepreneurship is one of the bases of economic development and has undeniable role and importance throughout history, academic researches concerning this issue appeared in the last couple of decades. These researches warn that entrepreneurship is not something that can be planned to the end, and that the success of these efforts depends on many factors, both internal and external. The impacts of these factors manifest different on different markets, so many ventures failed although they had strong financial or technological support. The reason for failure often lies in the fact that these jobs are taken in inadequate business environment. Considerations of relevant authors who have studied this issue have confirmed that there are some environmental factors that simply encourage entrepreneurial activity. However, they believe that it is not possible to find a pattern of behaviour that will guarantee success. Many of them actually observe entrepreneurship as an art, due to the lack of such a pattern that would surely lead to success or avoid failure, at least.

Considering the specificity of entrepreneurial ventures and their dependence on the specific conditions and situations, each one of them should be considered separately in one particular context. Although the environment provides the potentials for success, it also imposes restrictions, so all these factors should be carefully considered and their interaction should be examined, in order to gain previously set goals. In accordance with that, special attention should be paid to the relationships with other participants, especially if they are big or strong, because they affect, directly or indirectly, the results of all these ventures.

The organization will focus on specific market segments and try to make success. In doing so, due to the dynamism and instability of the environment, it should be remembered that once established mode of behaviour is something that might be changed, since the organization must continuously follow possible changes in the environment. In accordance with that, given the fact that in most cases these changes come as a result of actions of other participants or the occurrence of certain objective circumstances, it is necessary to adapt them in order to make further development possible. That way, by changing themselves, organizations are also changing their business environment, in continuously repeated iterations. Some of them will be in a position to influence these changes more than others, and that will bring them a competitive advantage.

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PROTECTION OF PERSONAL DATA AND THE PRACTICES OF THE IT COMPANIES IN SERBIA

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Abstract: *The protection of personal data is an integral part of the basic human right of privacy. All data operators, including companies, need to comply with the principles of protection of personal data, in a line with positive legislation. This paper focuses on the importance of abiding by the rules on protection of personal data in the companies' operation in Serbia, especially in the business sector based on information technologies (hereinafter: IT). In addition to this, a presentation of the study on compliance of IT companies in Serbia with the regulations in the field personal data protection is given. The paper also points to the techniques through which the companies can synchronise their operation policies with the appropriate legislation.*

Key words*: Personal data, privacy, IT sector, e-commerce, internet, operators, legal framework*

1. INTRODUCTION

Personal data have become the new currency which is already used on the global market along with other goods. As shocking as this may be, the data shows that the value of personal data in 2011 was circa 315 billion Euros, with a potential growth to 1 trillion Euros until 2020 (Financial Times, 2013). Companies, among which most belong to the IT sector, because of the nature of their businesses often come in contact with personal data that they gather, process, exchange and intersect. This advantage of the IT companies entails a huge responsibility in regard to protection of personal data. Bearing in mind that protection of personal data is an aspect of the right of privacy, and an integral part of human rights in general, it is of vital importance to explore and determine which companies provide the necessary level of protection of personal data.

The first part of the paper is consisted of a review of the national and international legislation that deals with protection of personal data. In the second part, the focus is on the companies' obligations regarding the protection of human rights. In the third part there is a representation of the results of the research of the protection of personal data in 30 companies in Serbia. Finally, in the last part recommendations are given, so that companies can improve their operation in the field.

2. LEGAL FRAMEWORK FOR PROTECTION OF PERSONAL DATA IN THE NATIONAL AND INTERNATIONAL LEGISLATION

The Constitution of the Republic of Serbia ("Official Gazette of the Republic of Serbia" no. 98/2006, article 42, paragraph 2) states that the protection of personal data is regulated exclusively by a law. In this sense, a Law on personal data protection which comprehensively regulates the matter was adopted. However, as the technological development rapidly surpasses and easily bypasses the established regulations, there is already a necessity for amending the existing law in a way that it would prevent the possible violations of the right on protection of personal data.

The existing framework regulates the requirements for gathering and processing personal data, and obliges the companies which legally defined as data operators, that before processing any personal data they obtain consent from the person whose data is being processed, to inform them about the processing of the data and future changes. Basically, data operators are obliged to enable their customers to exercise their rights, to access, to a copy, to correct, modify, update or delete data (Law on personal data protection (hereinafter:LPDP), "Official Gazette of the Republic of Serbia", no. 97/2008, 104/2009 - other law, 68/2012 -,

article 3). Data operators are also obliged to report any collection of personal data to the Central register's database within the jurisdiction of the Commissioner for Data Protection (in further text: Commissioner) (LPDP, article 52)

The international legislation in this field has integrated the right of protection of personal data into the core of the basic human rights, as a segment of the right of privacy. The UN has adopted a resolution which deals with privacy and binds the member states to protect the privacy of their citizens against mass surveillance and data gathering (GAUN, 2013). In addition to this, Serbia also signed and ratified the Convention number 108 of the Council of Europe which defines the protection of people in regard to the automated personal data processing, and the additional Protocol of the Convention number 108 related to the monitoring institutions and cross border data flow. The Directive of the European Parliament and the Council of the EU 95/46/EC from 24.10.1995, deals with the protection of the citizens from the processing of personal data and freedom of movement of such data and obliges the member states to protect the basic human rights and freedoms of their citizens, emphasising their right of privacy in regard to the processing of personal data.

3. PROTECTION OF PERSONAL DATA FROM THE PERSPECTIVE OF THE BUSINESS SECTOR

The problem of personal data is multi - layered one because it's been noticed that individuals do not have a mechanism to protect their data from the continuous requests from the state organs to the companies that possess most of their users' data. To make thing worse, individuals cannot expect protection from the state organs because of the improper handling of their data by the companies. The reason for this being the lack of capacity and resources of the countries which are mandatory for effective control over the operation of the companies in this field. Additionally, the fact that the companies mostly operate in several different legal systems brings to collisions between the laws of several different instances.

Being aware of the reality, and with the aim to protect their own reputation and assure uninterrupted operation, companies have begun to adopt internal procedures for data protection, in the form of technical standards ISO 27001 and other that regulate some of the issues regarding retained and processed data (International Standardisation Organisation, 2005) as well as employing officials who would have only one specialisation i.e. providing higher level of personal data protection.

An example of good practise for establishing a "pact" between the consumers and the companies with the civil society organisations as mediators is the project titled Global Network Initiative (GNI, http://globalnetworkinitiative.org/). GNI seeks to implement a legal framework based on the internationally accepted standards that would ensure responsible operation within the IT sector, enable inclusion in the process of making self-regulatory rules and mutual exchange of ideas and experiences. This organisation has adopted the Principles for freedom of expression and privacy (GNI, 2008), Guidelines for implementation of the Principles (GNI, 2008). The members of this association in order to protect the data of their clients are taking active part in public debates on the reforms of the systems for surveillance that the states have.

4. METHODOLOGY OF RESEARCH ON THE LEVEL OF PERSONAL DATA PROTECTION BY IT BUSINESS SECTOR IN SERBIA

The first step of defining the research methodology of the IT business sector in Serbia compliance with the data protection legal framework was consisted of the process of selecting and determining a research target group with regard to the relevance in the field of data protection. In that sense, 30 IT companies were divided into three groups - cellular and landline operators, Internet providers and e-commerce companies, with 10 representatives from each group. After that, the predefined number of companies was selected. Each of them, because of the nature of their business, is in position to collect much personal data from their customers. Furthermore, in each group 5 of the companies were selected on the basis of market share significance, while other 5 were selected randomly.

In the next step, criteria that empowered the determination of the level of data protection were formed. Further explanation of the criteria will be given in the next chapter. The web pages of the selected companies were analysed with the goal to obtain relevant documents that contain answers for fulfilment of the mentioned criteria. In order to confirm the found answers, after the analyses of the obtained documents, questionnaires for the companies were prepared and distributed to all of the 30 companies with a request to provide the missing answers or verify the answers that were defined in the documents on their web sites. Qualitative legal analyses and intersection of the findings followed as well as a draft of the recommendations that could enable companies to improve their operation in regard to data protection.

It is important to notice, that this research did not deal with the question if the companies are operating in compliance with the developed criteria in practice, yet the research results are only based on the analysis of the available documents on the companies' web sites and based on the verification answers that were provided by the companies as well as on the insight to the online Central data file register that kept by the Commissioner. It should be noted that out of 30 companies only 3 replied to the questionnaires they were sent, therefore the results of the preliminary research are verified in accordance with their answers. The findings from the other companies are relying solely on the analyses of the companies' documents available online, precisely Terms of services, Privacy policies and Contracts that are companies closing with their clients.

The aim of this research, which is first of this kind in Serbia, was to indicate the activities of the in the IT sector in Serbia and provide recommendations that could improve this field of work. On the other hand, the data protection security level remained out of scope of the research, since the focus was on the analyses of the available legal documents which are enabling users to get to know the level of protection of their personal data.

5. EXPLANATION OF THE DEFINED CRITERIA - INDICATORS OF THE BUSINESS COMPLIANCE WITH THE DATA PROTECTION LEGAL FRAMEWORK

As already mentioned, the research methodology included the development of criteria i.e. indicators of the level of protection of personal data, after the legal analysis of the legal framework on data protection and based on the later. In that context, the criteria was modeled by a similar research that was conducted by the organization Electronic Frontier Foundation (EFF, https://www.eff.org/), were created. The criteria are based on whether each and every of the companies:

1. Requests a court order to access the personal data - state bodies can gain access to the personal data only on the grounds of a court order which is afterwards submitted to the companies that are obliged to act upon it. (Law on criminal procedure ("Official Gazette RS", 45/2013) - art.167. Law on Military security agency and Military intelligence agency ("Official Gazette RS", no. 17/2013)- art. 13a, Law on security-information agency ("Official Gazette RS", 111/2009), art. 13 and 14, Law on electronic communications ("Official Gazette RS", no. 60/2013 – Constitutional Court Decision), art. 126)

2. Informs the user about the request for access to personal data - the mentioned laws do not strictly bind companies to inform their user, but at the same time it is not forbidden. Therefore, companies that are protecting the privacy of their clients and their reputation should inform them about the request for access to personal data, if it is not in accordance with a court order (i.e. if the court order contains gag order).

3. Delivers the personal data when ceding the company's claim - companies are allowed to cede their claims together with the necessary personal data of their clients to third parties in accordance with the article 436 of the Law on contracts and torts ("Official Gazette of Serbia and Montenegro" no. 1/2003 – Constitutional Charter). This means that a third party that is not included in the contract can gain access to the personal data. According to the law, the client's consent for ceding the claim is not required, but must be notified.

4. Notifies the clients about data processing - pursuant to the article 15, par. 1, line 1-8 of LPDP, companies are bound to publish a Notification letter about the processing of personal data. This Notification letter must contain the following: primary information about the company, purpose of data processing (e.g. register of users, number of post-paid users), the manner in which data will be used (e.g. to inform users about new services), the identity or categories of persons who will use the data (e.g. only employees in the sector of date security) then the voluntary nature of data provision and processing and legal grounds (e.g. only on the basis of voluntary given consent) including the data subject's rights: to access, to a copy, to correct, modify, update or delete data, as well as to a stay and suspension of processing. Also, companies should notify the client about other circumstances the withholding of which from a data subject or a third party would be contrary to conscientious treatment.

5. Notifies the user of any modifications of Notification of data processing - if in any moment the company decides to modify the Notification of data processing, the company is bound to provide the user with a notification of such a modification. It is not in accordance with the Law on data protection to request from the users to inform themselves on these modifications by visiting the official website of the company (LPDP, art.15, par.6)

6. Publishes the internal acts on Privacy policy and data protection - this criteria reflects on the practice of drafting and publishing internal acts on Privacy policy and data protection that define in a comprehensive way the following issues: types of data that the company collects and for what purpose, notification of data processing and modifications of Privacy policy, means of data protection, information on ceding of claims and personal data, including the implemented procedure in regard to the request of state bodies for the access to personal data etc. This is not defined by Law, but presents good practice that should be accepted.

7. Keeps a database in the Central register in jurisdiction of the Commissioner - when collecting and processing personal data, companies are obliged to register their data sets in the Central registry according to article 52 of LPDP.

5.1. Defining the target research group - operators, internet providers (ISP), e-commerce companies

An operator is a legal entity that conducts or is authorized to conduct activities of electronic communications (Law on electronic communications, article 4, par.2). The research embraced the 5 largest and most well-known operators (Telekom Srbija, Telenor, VIP Mobile, Orion Telekom i SBB) as well as 5 companies selected randomly (Ikom, Radijus Vektor, Kopernikus, Targo Telekom i Katel Network).

Internet service providers are defined as entities that offer access to the Internet with no regard to whether it is ADSL, Dial-up, cable, etc. The selection of Internet providers was conducted based on their media and public presence (Beotelnet, Veratnet, EUnet, Beonet, Pošta net), while other 5 were selected randomly (SRBnet, Teledot, Netpro, Bluenet, Tippnet).

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The Law on electronic commerce ("Official Gazette of the Republic of Serbia", no. 95/2013) defines that commerce of goods and services online is a form of remote commerce in sense of the law that regulates commerce (article 4, par.2). According to the data of the company "Limundo" around 900 000 people shopped online in 2013. In this research, the 10 e - commerce companies were divided in two groups: the first group is comprised of companies that mediate in the trade (Limundo, Kupujem prodajem, Kupi me, Popusti), in the second group are the companies that participate actively in the e-commerce i.e. online shops (Hoću to, Planeta shop, Tehnomanija, Tako lako, Knjižara Vulkan, Non stop shop).

6. PROTECTION OF PERSONAL DATA IN IT BUSINESS SECTOR IN SERBIA RESEARCH RESULTS

It is noteworthy that 9 out of 30 companies did not pass any of the criteria: Ikom, Radijus Vektor, Kopernikus, Katel Network (operators); SRB Net, Teledot, Beotelnet, Bluenet, Netpro (ISP).

Regarding the first criteria, i.e. requesting a court order to access users' data, 10 companies in total allow access to their users' data only with a valid court order, i.e. 4 out of 10 operators (Telekom Serbia, Telenor, Orion Telekom, Targo Telekom), as well as 6 out of 10 e-commerce companies (Limundo, Kupujem Prodajem, Kupi Me, Popusti, Hoću To, Knjižara Vulkan). Not a single of the Internet providers that were part of this research requests a court order for accessing data.

In regards to the second criteria, informing users about the court order, bearing in mind that giving this information is not a legal obligation, none of the operators inform their users, neither do 9 ISP's, or e-commerce companies. Only Verat Net (Internet provider) and Limundo (e-commerce) contact their users when there is a court order for accessing their data.

The analysis of the practice of companies in which they cede their claim (that is user's debt) to third parties, the results show that 4 operators (Telenor, VIP Mobile, Orion Telekom, Targo Telekom) deal with this problematic, and this information are provided as part of the Terms of Service, which are an integral part of the user contract. None of the e-commerce companies deal with ceding, which is probably because 5 out of 10 e-commerce companies in this research, merely meditate in the sales, which implies that buyers, don't have any direct debt towards them. Three ISP's explicitly stated that they do not act in such a manner, precisely, they don't cede their claims to third parties (Tipp Net, Verat Net, EU Net).

The Notifications of data processing that were analysed as part of the fourth criterion are publicly available on the websites of 4 operators (Telenor, VIP Mobile, Orion Telekom, Targo Telekom) and only 2 ISP's (Pošta Net and Verat Net), even though that is required by law. All of the 10 e-commerce companies have publicly available Notifications on their web pages.

The Notification for data processing, which is also required by LPDP, is only actively practised by 3 operators, but their Terms of Services, which include the Notification of data processing, provide that the users shall be notified by the "authorised dealer and the official website". Only two ISP's (Pošta Net and Verat Net) act in accordance with the law, except for Pošta Net, which acts like the operators do, while only Verat Net regulates this matter in their Privacy Policy, but they also publish the changes on their website. Article 15 of the LPDP explicitly states that companies must personally notify their users about data

processing, as well as about the modifications of the Notification. Only 3 e-commerce companies act in such a way (Limundo, Planeta shop and Tehnomanija), while Nonstop Shop, Popusti and Kupi Me notify their users about the changes through their official websites.

Table 1: Protection of personal data in IT business sector in Serbia research results

Operators	Telekom Srbija	Telenor	VIP Mobile	Orion Telekom	SBB	Ikom	Radijus Vektor	Kopernikus	Targo Telekom	Katel Network
Request court order for the access to personal data	Yes	Yes		Yes					Yes	
Inform users about requests for access	No	No								
Cede claims to third parties	No	Yes	Yes	Yes					Yes	
Notify users of data processing	No	Yes	Yes	Yes					Yes	
Inform users of the modifications of the Notification of data processing	No	Yes	Yes	Yes						
Have internal privacy policies	No	Yes		No					Yes	
Registered database in the Central Registry	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No
ISP	Pošta Net	BeoNet	TippNet	SRBNet	Teledot	VeratNet	BeotelNet	BlueNet	EUnet	Netpro
Request court order for access to personal data										
Inform users about requests for access						Yes				
Cede claims to third parties			No			No			No	
Notify users of data processing	Yes					Yes				
Inform users of the modifications of the Notification of data processing	Yes	Yes				Yes				
Have internal privacy policies	Yes	Yes				Yes				
Registered database in the Central Registry	No	No	No	No	No	No	No	No	Yes	No
E-Commerce	Limundo	Kupujem prodajem	Kupime	Popusti	Non stop shop	Tako lako	Hoću to	Planeta shop	Tehnomanija	Knjižara Vulkan
Request court order for access to personal data	Yes	Yes	Yes	Yes			Yes			Yes
Inform users about requests for access	Yes									
Cede claims to third parties										
Notify users of data processing	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Inform users of the modifications to the Notification of data processing	Yes		Yes	Yes	Yes			Yes	Yes	
Have Internal privacy policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Have a registered database in the Central Registry	Yes	No	Yes	No	No	No	No	No	No	No

When it comes to adopting and publishing internal Privacy policy acts that would comprehensively regulate the companies operations in the field of users' privacy protection, only 2 operators (Telenor and Targo

Telekom) operate in accordance with this good practice, as well as 2 ISPs (Beonet and Verat Net). Unlike them, only Tehnomanija hasn't yet published such an act, while all the other e-commerce companies have it (Limundo, Kupujem prodajem, Kupi me, Popusti, Nonstop shop, Tako lako, Hoću to, Planeta shop i Knjižara Vulkan).

With respect to the practice of registering the database in the Central Register of the Commissioner, which is defined in the seventh criterion, 6 operators have registered databases (Telekom Serbia, Telenor, VIP, Orion Telekom, SBB and Targo Telekom), and only one Internet provider (EU Net). At the same time, only 2 e-commerce companies have registered databases (Limundo and Kupi Me). In this way companies commit misdemeanour (Law on personal data protection, Article 57, Paragraph 1, Line 13) and can be fined.

7. CROSS EXAMINED RESULTS AND ANALYSIS

Based on the analysis of the published documents it can be concluded that none of the Internet providers request a court order for the access to personal data, nor do half of the operators. Furthermore, the provider EU Net clearly stated in its Terms of Services that: "...the Provider has a right to provide User's data and his misconduct to interested parties." (EUnet, 2011). Unlike operators and Internet providers, most e-commerce companies demand a court order for the access of personal data of users.

Telekom Serbia didn't have a publicly available answer to any of the developed criteria in our research. However, after we sent them questionnaire, the company replied that is has implemented the ISO 27001 standard and in that way has provided a high level of personal data protection security, adopting certain internal acts which regulate the procedures for data management. Notwithstanding this, after analysing these acts (General policy for data management security, IT security and protection for employees policy) an explicit Notification of data processing and its data modification was not found, but it's clearly stated that data is provided only with a court order. In any case, when adopting the ISO standard companies give a clear signal that personal data is, from a technical point of view, well protected.

As it has been previously stated, companies in most cases do not inform users on governmental requests to access data. However, Verat Net and Limundo do inform users about requests, with the exception that Verat Net doesn't have explicitly stated that it requests a court order to enable access to the state bodies to the personal data, which is surprising. Verat Net is the only Internet provider that has a positive answer on all other criteria and, as such, represents a good example which should be followed by other companies.

When it comes to the Notification on data processing, the content of this Notification is defined by law, and not complying with the law is financially punishable (LPDP, art. 57, par. 1, line 4). Regardless of this obligation, Internet providers do not consider that it is necessary to make this Notification available to users, so 8 providers do not have any Notification, and neither do 6 of the operators. However, the situation is different when it comes to e-commerce companies, which all but one sends the Notification whose content is fully in compliance with the aforementioned law.

A modification of the Notification of data processing is also regulated by LPDP, and it obliges companies that they inform the users about every modification personally. Out of all of the analyzed companies, only 3 (Limundo, Planeta shop and Tehnomanija) act in such a manner that they inform their users personally, while others do so through their website. Most users do not visit the official website of their operators and providers, so there is little chance that they will acquaint themselves with the modifications. Furthermore, most operators and Internet providers do not have a clear stipulation on the modifications of the Notification of data processing, but do so through the Terms of Services which include the Notification of data processing. As an example of good practice in this field we can name the company Limundo, which sends an e-mail of notification to all registered users with every modification of the Notification of data processing and publishes the new version on its webpage at least 8 days before it takes effect.

It is encouraging that almost all e-commerce companies that were a part of this research, have internal acts on privacy and personal data protection. This practice should be followed by operators and ISPs, which in most cases do not have any internal documents in regard to data collection and data processing. It is especially troubling that some of the more successful companies in this field, such as SBB and Ikom, do not have publicly available documents that regulate the matters of data collection and personal data protection of their users.

One of the interesting results of the research refers to the ceding of data to third parties in order to collect claims. Telenor, Orion Telekom, Targo Telekom and VIP Mobile envisage the possibility of ceding data to

third parties in order to collect claims. However, what concerns the most is the fact that terms that provide for such a possibility are not linked to relevant articles of the law, which oblige companies to notify users on every ceding, but that, solely by signing the contract, the users consent to the ceding of claims to third parties, and at the same time to the ceding of their personal data. Two companies do not envisage such a possibility, namely TippNet and EUnet.

This research has shown that e-commerce companies take the importance of personal data protection of users much more seriously and that 9 out of 10 issue a Notification of data processing and an published Internal privacy policy. Unfortunately, the situation is dramatically different when it comes to operators and Internet providers, who have only published Terms of Services on their websites, which in most cases does not include a Notification on data processing and a Procedure for acting in regard to requests for access to personal data. The aforementioned Terms of Service are mostly aimed at regulating the terms under which service is provided, as well as the users' obligations, and only touch upon data protection.

8. RECOMMENDATIONS FOR THE IMPROVEMENT OF THE PROTECTION OF PERSONAL DATA IN IT BUSINESS SECTOR IN SERBIA

Furthermore, on the basis of the research results, recommendations for the improvement of compliance of the companies from the IT sector with the data protection regulations will be presented. These recommendations are not directed only to the companies that were part of this research, but to the entire IT industry and those who are interested to conduct their business in this field.

First of all, companies should get acquainted with the legal framework of the Republic of Serbia, primarily the Law on personal data protection, but also the Law on electronic communications (article 126), the Law on criminal procedures (article 167), the Law on the security-information agency (article 13-14), as well as the Law on the military security agency and military intelligence agency (article 13a), that are all explicitly defining that in order to enforce any measures that tackle personal data, it is indispensable for the state bodies to obtain a court order. Therefore, only companies that are respecting these regulations and procedures can be seen as ones that plead for the privacy protection of their users, and consequently they can expect trust and loyalty of their users.

In case the court order does not contain a gag order, companies should inform user on that order. This practice was implemented only by Limundo (e-commerce company) and Verat net (Internet provider) since these companies already understand the advantage of the relationship of the mutual confidence can bring to the market.

Regarding the ceding of their claims, companies should inform their users in each case, while consent of the user is not mandatory in accordance with the article 436 of Law on contracts and torts. Based on the analysis of the available documents of the companies, this matter can be improved by sending notification to each user when his/her claim, together with their personal data, was ceded.

In order to have a legal basis to collect and process data, which is the precondition for conducting their primary activity of offering IT services, which cannot be imagined without proceeding of personal data, companies are bound to publish easily understandable and accessible Notifications of processing of the personal data, which was omitted by 17 companies included in the research. The fundament of data protection is the existence of consent for the processing and the Notification of processing of data that are both fully defined by the Law on personal data protection (article 19). Therefore, the essential recommendations for all companies is to publish online the Notification of the processing in compliance with the aforementioned Law, in shortest time possible, following the good practices of companies that were already mentioned.

Equally important is to personally inform each user on the modifications of the Notification of the processing that is also regulated by the LPDP. Only two out of 30 companies act in this manner, which clearly demonstrates ignorance of the companies. Moreover, this also indicates that our IT business sector has not yet acknowledged the advantages of relationship tailored to each user's needs. Also, it is important to build a two-way communication with the user and this presents a good possibility to do so.

Internal privacy policy documents that are publicly available present a good and easy way to inform users on companies conduct under all criteria that were developed for the purpose of this research. Largest segment of the companies that were included in the research (17) did not make this document publicly available, making it more complicated for the users to get acquainted with the data protection procedures while at the

same time often regulating these sensitive issues of data protection through unreadable and unclear Terms of service.

Bearing in mind that state bodies lack the internal capacity to fully control companies in this field, companies from the IT sector could adopt guidelines for conducting operations in this area through the process of collaboration and joint investments, following the global initiatives such as GNI, and in this manner ensure security in conducting business, and at the same time simplify the work of state bodies.

The fact that the users in Serbia will sooner or later realize that their personal data and privacy are important, as was the case in other countries, and that it is not all the same if one or the other operator provides them services and has direct control over their data. This also represents the possibility for smaller companies to prove that they care about privacy and that privacy of their users is an important market value and advantage in comparison to other “players”, as well as that they need to use these advantages.

The new EU Draft Regulation on data protection (European Union, 2013) provides higher penalties for misdemeanour- up to 2 percent of the annual global profit of the company. Since Serbia is a candidate for joining the EU, during the process of accession it will need to improve the standards on data protection to comply with this Regulation, which will also pertain to companies. What this means is that, companies, on their own or under the pressure of sanctions, will need to improve their business in this area, and in return will be able to expect more clients and higher profit.

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