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**BUSINESS PROCESS MANAGEMENT IN MICROENTERPRISES - A  
CASE STUDY OF THE FIN-PRO COMPANY**

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## AUTHORSHIP STATEMENT

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## INTRODUCTION

Business process management (hereinafter: BPM) is a management approach that focuses on end-to-end processes (Hammer, 2015, pp. 4-5) for improving organizational business operations (vom Brocke, Mathiassen, & Rosemann, 2014, p. 189). It is a way of managing business, based on the belief that a process-centered approach leads to substantial improvements in both performance and compliance of a system (vom Brocke & Rosemann, 2015, p. ix). In that capacity, it is perceived as an encapsulation of all the efforts organizations take to analyze and continually improve their fundamental activities (Zairi, 1997, p. 64) by applying methods, techniques and tools so as to innovate, design, enact and control business processes involving customers, organizations, applications, documents and other sources of information (van der Aalst, Weske, & ter Hofstede, 2003, p. 1). Due to its nature to be manifested not only as a factor of organizational continuous improvement (Wong, 2013, p. 719), but also as a factor of organizational innovation and transformation (vom Brocke, Mathiassen, et al., 2014, p. 189), it captivates the attention of many researchers and has been recognized as an important business topic.

Since its inception, BPM has mainly served large enterprises, and has been found to be connected with various financial and non-financial impacts on them (Hernaus, Bach, & Vukšić, 2012, p. 376; Kohlbacher & Reijers, 2013, p. 245; McCormack et al., 2009, p. 793; Stohr & zur Muehlen, 2008; Škrinjar, Bosilj-Vukšić, & Indihar Štemberger, 2008, p. 738; Wong, 2013, pp. 722-723). Only recently, a shift towards an exploration of the usefulness of BPM adoption and implementation in small and medium business (hereinafter: SME) has emerged as a focus of interest (Christofi, Nunes, Peng, & Lin, 2013, p. 304; Dallas & Wynn, 2014, p. 26; Kirchmer, 2011b, p. 147; Singer, 2015). It has been noted that the adoption and implementation of BPM initiatives in these enterprises have inhibitors in cost pressures, time pressures, human resource capacity, multiple roles of employees and their skill level (Dallas & Wynn, 2014, p. 26; Kirchmer, 2011b, p. 149). On the other hand, facilitating phenomena that support the process of BPM adoption and implementation such as fast decision making, integration of the activities and employee work ethic have also been detected in these enterprises (Dallas & Wynn, 2014, p. 26; Kirchmer, 2011b, p. 150).

Microenterprises are fairly small business operations (Munoz, 2010, p. 2). As such, they are a manifestation (subclass) of small and medium enterprises (hereinafter: SMEs). Since more than 90% of all enterprises in the European Union are considered SMEs (Kirchmer, 2011b, p. 147), we believe further research on how BPM adoption and implementation is conducted in these entities is needed. The context of microenterprises, in that regard, is even more so neglected. Research in this field is scarce almost to the point of non-existent. Therefore, conducting a case study in that context should provide useful information. This especially applies to the Slovenian economic environment. According to the Companies

Act of the Republic of Slovenia, a microenterprise is a company that meets two of the following criteria (Zakon o gospodarskih družbah [Companies Act] (Uradni list RS [Official Gazette of the RS], št. 65/2009 – UPB, 33/2011, 91/2011, 32/2012, 57/2012, 82/2013, 55/2015; Odl. US: U-I-268/06-35; Odl. US: U-I-311/11-16, hereinafter: ZGD-1)): (a) the average number of employees during the financial year does not exceed 10, (b) the net revenue from sales does not exceed 2,000,000 €, and (c) the value of assets does not exceed 2,000,000 €. Following this definition, 95% of all the enterprises in the Republic of Slovenia are microenterprises, and 22% of them have two to nine employees, generating 26% of the overall annual Slovenian gross domestic product (hereinafter: GDP) (Erpič, Mišič, Primožič, Sever, & Šivic, 2015, p. 8; Kuclar Stiković, 2015). Hence, the typical enterprise in the Republic of Slovenia is a microenterprise (Erpič et al., 2015), and, as such, it should be of great research interest, due to its role in the generation of the GDP (Kuclar Stiković, 2015).

For that purpose in our study, we propose the following research question:

**RQ1: (a) How are microenterprises deploying and using BPM concepts in their environment; (b) what is their motivation for BPM adoption and implementation; (c) what challenges they face when adopting and implementing BPM initiatives/projects; and (d) how can they overcome those challenges?**

Previously stated advantages and disadvantages, which SMEs have in comparison to large enterprise, we believe are even more present in the context of microenterprises. Because microenterprises cannot be expected to easily overcome resource (time, money, people) issues, we are convinced they should concentrate on the opportunities their organizational culture, as generator of their absorptive capacity (Manfreda, Kovačič, Indihar Štemberger, & Trkman, 2014, pp. 35-43) is offering them on the road of BPM adoption and implementation (utilizing culture to influence on the BPM inhibitors; and utilizing culture to foster through embracing the advantages they have). This essential importance of the organizational culture in the process of BPM adoption and implementation has already been emphasized (Hribar & Mendling, 2014, p. 1; Rosemann & vom Brocke, 2015, p. 110; Schmiedel, vom Brocke, & Recker, 2014, p. 44; Škerlavaj, Indihar Štemberger, Škrinjar, & Dimovski, 2007, p. 348; vom Brocke, Rosemann, Schmiedel, & Recker, 2015, p. 693), but in the context of microenterprise, we believe should be even more indicated. Therefore, evaluation of the organizational culture and its fit for BPM should be fruitful for BPM adoption and implementation in microenterprises. One possible way for conducting this evaluation is through the organizational culture assessment instrument (hereinafter: OCAI) concept (Cameron & Quinn, 2011, pp. 23-30) and another is through the BPM culture concept (Schmiedel et al., 2014, p. 49). The yield of this measurement should reflect itself

in detecting some opportunity points that microenterprises could utilize. Hence, we propose the second research question for our study:

**RQ2: How can microenterprises utilize their culture in the process of BPM adoption and implementation?**

One of the core enabling elements of successful BPM adoption and implementation is the customer orientation (Schmiedel et al., 2014, p. 44). Due to the smaller customers' database, microenterprises being really close and intimate with their customers are, in our opinion, in a unique position to achieve strong score across this dimension of successful BPM adoption and implementation. Thus, we propose the third research question for our study:

**RQ3: How can microenterprises utilize their proximity to their customers for achieving better customer orientation?**

Following the postulation of these research questions, the main purpose of the thesis is to research BPM adoption and implementation from the point of owners, managers and employees in the context of microenterprises.

The objectives of the thesis are:

- conducting literature review on BPM adoption and implementation in SMEs, and if possible in microenterprises;
- listing inhibitors and facilitators of BPM in SMEs, and if possible in microenterprises;
- proposing possible ways of utilizing the organizational culture in SMEs, and especially in microenterprises, to overcome identified inhibitors and to support the potential facilitators of BPM adoption and implementation; and
- performing a practical study to apply found and proposed theoretical assumptions.

In conducting our study, we relied on deductive, inductive and abductive reasoning. For the first part of our study we performed literature review of the BPM adoption and implementation, with emphasis on the context of SMEs.

For the practical study we used the field study approach with active participant observation. Our subject of study was Fin-Pro, a microenterprise in Slovenia. Following BPM lifecycle, we concentrated on business processes' identification, discovery, analysis, design, implementation and monitoring, and controlling (Dumas, La Rosa, Mendling, & Reijers, 2013, p. 21). While performing these BPM activities, for the purposes of this study, we used interviews, surveys, document analysis, action learning and active participant observations from ex-ante and ex-post point of time. Our approach to BPM was

holistic (vom Brocke, Schmiedel, et al., 2014, p. 533) with consideration to the importance of the organizational culture in the process of BPM adoption and implementation. We produced a list of proposals for BPM initiatives/projects, and the subject of our practical study Fin-Pro selected some of them for implementation. Longitudinal study of effects for some of the chosen BPM initiatives/projects was conducted in the cases where it was deemed possible.

In continuation of this study, at first, we concentrate on the theoretical fundamentals of the BPM adoption and implementation, and then we discuss the specificity of the microenterprises. After presenting the theoretical concepts and assumptions, we continue with reporting the results from the conducted case study in the company Fin-Pro.

## **1 BPM AND MICROENTERPRISES**

### **1.1 What is BPM?**

BPM is a comprehensive system for managing and transforming organizational operations, by focusing on end-to-end processes (Hammer, 2015, pp. 4-5) in order to achieve organizational business operations improvement (vom Brocke, Mathiassen, et al., 2014, p. 189). It is based on the observation that each product that a company provides to the market is the outcome of a number of activities performed, and business processes are the key instrument for organizing these activities and improving the understanding of their interrelationships (Weske, 2012, p. 4).

As a management discipline, BPM provides governance for a process-oriented organization with the goal of agility and operational performance and requires “process thinking” (Kirchmer, 2011a, p. 153). BPM sets out to increase the effectiveness and efficiency of an organization; it is a significant contributor to the overall organizational performance and competitiveness and it has become an increasingly important enabling factor of organizational innovation and transformation (vom Brocke, Mathiassen, et al., 2014, p. 189). In that capacity, BPM is often perceived as an encapsulation of all the efforts organizations take to analyze and continually improve their fundamental activities (Trkman, 2010, p. 125; Zairi, 1997, p. 64) by applying methods, techniques and tools in order to innovate, design, enact and control business processes involving customers, organizations, applications, documents and other sources of information (van der Aalst et al., 2003, p. 1).

As a way of managing business, BPM is based on the belief that a process-centered approach leads to substantial improvements in both performance and compliance of a system (Rosemann & vom Brocke, 2010, p. ix). By combining knowledge from information technology and management sciences, and by applying it to the operational

processes, BPM is aiming for significant increase in productivity and saving costs (van der Aalst, 2013, p. 1).

By unifying different functions of an organization into a cross-functional processes, BPM promises delivering quality products and services in less time and with greater efficiency (Blokdijk, 2008, p. 19). Due to its nature to be manifested not only as a factor of organizational continuous improvement (Wong, 2013, p. 719), but also as a factor of organizational innovation and transformation (vom Brocke, Mathiassen, et al., 2014, p. 189), it captivates the attention of many researchers and has been recognized as an important business topic. In the following subsection we present a brief history of the BPM discipline.

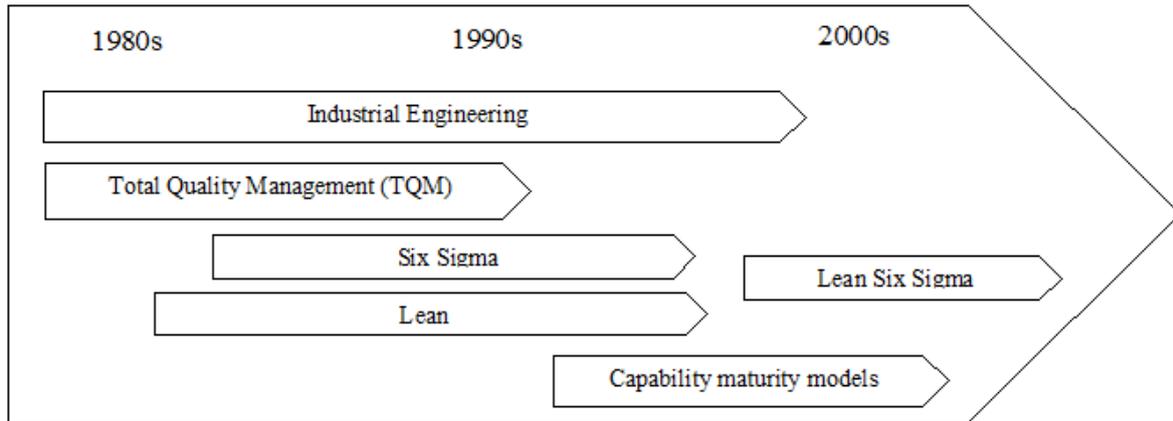
## 1.2 A short history of BPM

Although it is difficult to precisely locate the origins of BPM, going back in time one shall inevitably come across the names of: (a) Henry Fayol (1841-1925), who recommended labor division; (b) Adam Smith (1723-1790), who demonstrated its advantages; (c) Frederick Taylor (1856-1915), who pursued industrial efficiency by relying on scientific methods for elimination of all false, slow and useless movements; and (d) Henry Ford (1863-1947), who introduced the moving production line (Harmon, 2015, pp. 38-40; Jeston & Nelis, 2008, pp. 418-419; Lusk, Paley, & Spanyol, 2005, pp. 2-3; Mendling, 2008, pp. 2-4; van der Aalst, 2013, p. 4; von Rosing, von Scheel, & Scheer, 2014, pp. 2-8).

Labor subdivision, viewed as a tool for productivity increase, requires a mechanism of coordination between the individual tasks (Mendling, 2008, p. 2). BPM is certainly concerned with this and with further optimization through process improvements (Jeston & Nelis, 2008, p. 9; Mendling, 2008, p. 2), in order for organizations to find the most efficient way of performing their work (Hammer, 2015, pp. 5-6; Harmon, 2015, p. 67; Mendling, 2008, p. 2).

These improvements, following the paradigm of Taylors' scientific management, are based on scientific methods that were further on enriched by adding various statistical process controls for measuring and limiting process variation, as proposed by Walter A. Shewart (1801-1967), William E. Deming (1900-1993), Joseph M. Juran (1904-2008) and others (Hammer, 2015, p. 6; Harmon, 2015, pp. 40-42; Jeston & Nelis, 2008, p. xiii). Not stopping there, these scholars favored and encouraged continuous rather than episodic improvement, and proposed empowerment of workers to achieve improvements in organizational processes (Jeston & Nelis, 2008, p. xiii). These thoughts form the core of **the quality control BPM tradition** (Figure 1), concerned with the organizational training efforts undertaken to make every employee responsible for process quality (Hammer, 2015, p. 6; Harmon, 2015, pp. 40-42).

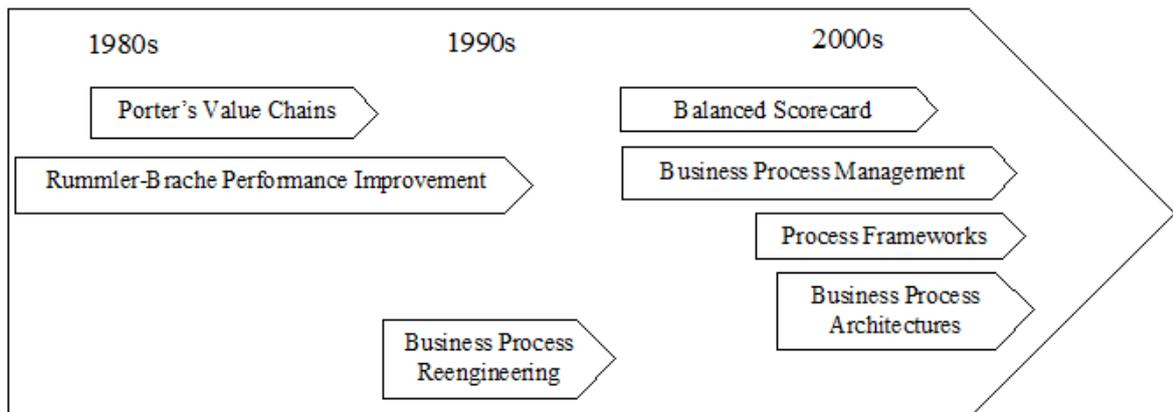
Figure 1. Quality Control BPM Tradition



Source: P. Harmon, *The Scope and Evolution of Business Process Management, Handbook on Business Process Management 1: Introduction, Methods & Information Systems*, 2015, p. 42.

Other scholars, as Geary Rummler (1937-2008), Michael Porter (b. 1947), Robert S. Kaplan (b. 1940), and David P. Norton (b. 1941) have focused on the overall organizational performance and wrote about the necessity of alignment (match) between the organizational strategy and the capabilities of all the invested inputs for its realization (Harmon, 2015, pp. 44-48). In that regard, employees' management was found to be of great importance in accomplishing organizational goals (Harmon, 2015, pp. 44-48). Emphasis was also put on the organizational innovation capabilities, having potential to lead to radical changes and give the organizations competitive advantage (Harmon, 2015, pp. 44-48). The contribution of these scholars to BPM is now recognized under the name of **management BPM tradition** (Figure 2).

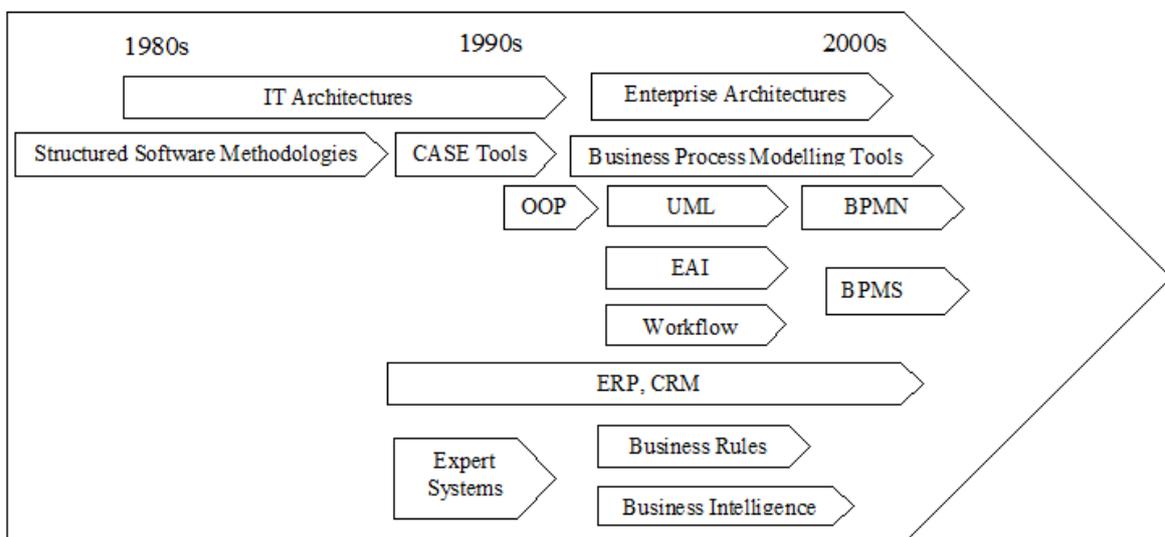
Figure 2. Management BPM Tradition



Source: P. Harmon, *The Scope and Evolution of Business Process Management, Handbook on Business Process Management 1: Introduction, Methods & Information Systems*, 2015, p. 48.

After World War II computers and information systems started to heavily influence the organizational work (the design of workflows) and new manners of doing businesses emerged (Harmon, 2015, pp. 49-50; Mendling, 2008, pp. 3-4; van der Aalst, 2013, p. 4). The widespread presence of information technology (hereinafter: IT)-reliant systems (Alter, 2013, p. 73) made organizations aware of the potentials of the automation as a source of cost reduction and quality improvement (Harmon, 2015, pp. 49-50; Mendling, 2008, pp. 3-4). Consequently, a new **IT BPM tradition** (Figure 3), which identified IT as a driver, or major force behind business changes that should be embraced was born (Harmon, 2015, pp. 49-50; Mendling, 2008, pp. 3-4; Smith & Fingar, 2003; van der Aalst, 2013, p. 4).

Figure 3. IT BPM Tradition



Source: P. Harmon, *The Scope and Evolution of Business Process Management, Handbook on Business Process Management 1: Introduction, Methods & Information Systems*, 2015, p. 50.

To summarize, Table 1 presents the evolution of BPM and its major trends throughout history.

### 1.3 BPM and Microenterprises

There is a plethora of definitions on what constitutes a **business process**, which more or less converge to its description as **an ordered sequence of activities, whose beginning and end, inputs and outputs are defined well, initiated with the aim to achieve a specific result that is of some value to the customer, and embedded in an organizational structure, often crossing several business functions** (Alter, 2013, p. 75; Becker & Kahn, 2003, p. 4; Davenport, 1993, p. 5; Hammer & Champy, 1993, p. 35;

Johansson, 1993, p. 16; Mendling, 2008, p. 4; Smith & Fingar, 2003; von Rosing et al., 2014, pp. 130-131)

Table 1. BPM Evolution

Phase	Time	Focus	Business	Technology	Tools/Enablers
<b>Industrial age</b>	1950-1960s	* Specialization of labor * Task productivity * Cost reduction	* Functional hierarchies * Command & control * Assembly line	* Mechanization * Standardization * Recordkeeping	* Scientific management * PDCA improvement cycle * Financial modeling
<b>Information age</b>					
<b>Process improvement</b>	1970s-1980s	* Quality management * Continuous flow * Task efficiency	* Multi-Industry enterprises * Line of business organization * Mergers & acquisitions	* Computerized automation * Management information systems * MRP	* TQM * Statistical process control * Process improvement methods
<b>Process reengineering</b>	1990s	* Specialization of labor * Task productivity * Cost reduction	* Functional hierarchies * Command & control * Assembly line	* Mechanization * Standardization * Recordkeeping	* Scientific management * PDCA improvement cycle * Financial modeling
<b>Business process management</b>	2000+	* Quality management * Continuous flow * Task efficiency	* Multi-Industry enterprises * Line of business organization * Mergers & acquisitions	* Computerized automation * Management information systems * MRP	* TQM * Statistical process control * Process improvement methods

Source: S. Lusk, S. Paley, & A. Spanyi, *The evolution of business process management as a professional discipline*, 2005, pp. 1-2.

From the above definition, the universal nature of processes happening in every organization (small, medium and large) is easily recognizable. This inevitably leads to the need for business process management in every organization (small, medium and large). However, having in mind the bureaucratic dimension of BPM in large organizations, where one can find implementation of concepts such as BPM office, or similarly BPM units, structurally embedded in the organizations, in order to ensure organizations achieve maximum benefits from the resources invested in BPM initiatives (Hernaus, Bosilj-Vukšić, & Indihar Štemberger, 2016, p. 173), it is reasonable to suspect a different BPM approach in small organizations will be needed (vom Brocke, Schmiedel, et al., 2014, p. 534). Due to the lack of resources in small organizations, it is inconceivable to find them establishing this kind of structural BPM support. But this does not mean they cannot benefit from BPM

(Kirchmer, 2011b, p. 155; La Rosa, 2016, p. 91), it merely shows the face validity of the argument small organizations need a different approach to BPM. Acknowledging this, in continuation we present all the specificities of smaller organizations, starting from the definition of the concept of microenterprise.

### **1.3.1 Microenterprise: definition and description**

Microenterprises are fairly small business operations (Munoz, 2010, p. 2). As such, they are a manifestation (subclass) of SMEs. The European Commission recommendation 2003/361 gives the following definitions (European Union Commission, 2003):

“

- The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.
- Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.
- Within the SME category, a microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

“

Following this recommendation, the category of micro and SMEs represents the overwhelming majority (99%) of all the businesses in the European Union (hereinafter: EU), accounting for about 67% of the total employment and 57% of the value added in the non-financial business economy ("Business economy - size class analysis," 2016). Microenterprises alone have the second highest share of the total employment (29%), and the added value (21%) among the four enterprise size classes (micro, small, medium and large) in the non-financial business economy ("Business economy - size class analysis," 2016).

In the Organisation for Economic Co-operation and Development (hereinafter: OECD) countries, between 70% and 95% of all the enterprises are microenterprises (OECD, 2015, p. 24). These entities have the highest proportion in the service sector, accounting on average for 42% and 32% of the total employment in construction and services and 14% in manufacturing; and contributing around 10% to 25% to the value added in most of the economies (OECD, 2015, p. 34). These statistics clearly demonstrate the overall importance of microenterprises in total economy.

In the context of Slovenian economy, where the typical enterprise is a microenterprise, contributing around 26% to Slovenian GDP, and a share of 34% in the total employment,

the importance of microenterprises is even more so present (Erpič et al., 2015, pp. 9-10; Kuclar Stiković, 2015; OECD, 2015, p. 29).

But why do we have to treat smaller enterprises separately from larger ones?

### **1.3.2 Smaller vs. larger enterprises**

Due to differences in various (Ghobadian & Gallear, 1997, pp. 126-129; Rohde, 2004, pp. 430-431; Welsh & White, 1981, pp. 5-6; Werber & Žnidaršič, 2010, p. 482):

- organizational dimensions,
- management styles,
- business practices, and
- information systems

smaller enterprises are inherently different compared to the larger ones.

Strictly economically speaking, there is ample evidence suggesting that larger enterprises have higher productivity levels than smaller enterprises (OECD, 2015, p. 40). Also, there are some strong indications for a positive association between organizational size and technical efficiency (Badunenko, 2010, p. 414; Lun & Quaddus, 2011, p. 7229; Schiersch, 2013, p. 340; Werber & Žnidaršič, 2010, p. 482; C. Yang & Chen, 2009, p. 375).

As for the people/employees dimension of the enterprises, larger enterprises draw individuals interested and focused on acquiring specialist knowledge and obtaining environmental legitimacy of that knowledge by working for them (Josefy, Kuban, Ireland, & Hitt, 2015, p. 772). Larger enterprises also offer more space for promotion, and the wages of their employees are on average higher (Wallace & Kay, 2009, p. 474; J. Yang, 2016, p. 4).

On the other hand, people who are more inclined towards appropriating general knowledge are probably more drawn towards smaller organizations. This has to do with the high degree of employees' freedom and lack of rigid formalization and standardization of the work in the smaller enterprises (Josefy et al., 2015, p. 772; Wallace & Kay, 2009, p. 475). Namely, generalist workers are able to function in various conditional settings and are able to utilize various resources for successful adaptation to the environmental dictations. In order to be able to do this, generalist workers must have high degree of freedom for quick reactions to the changes and also must be equipped with the knowledge to think outside of the box. This thinking outside of the box is certainly related to the capacity for creative thinking and innovative orientation. In that sense, innovation for smaller enterprises is not so much a choice, as it is more a precondition to be able to adapt quickly to the changing

environment (Raymond, Bergeron, Croteau, & St-Pierre, 2015, p. 87). Larger enterprises, on the other side of the spectrum, due to their stable environmental conditions are less prone to exhibiting creative thinking, due to their reliance on well-established bureaucratic principles of work, where the emphasis is on the standardization and formalization (Josefy et al., 2015, pp. 746-747). Thus, larger enterprises are probably better in sharing explicit knowledge and small organizations are probably better in sharing tacit knowledge, with the former making use of the strong standardization and formalization and the latter making use of the high degree of developed loose and informal intra-organizational relationships.

There are also differences in the management (planning, organizing, leading, coordinating and controlling) in larger and smaller enterprises. Larger enterprises tend to have more levels of management, further on resulting in managerial distance from the business operation and managerial lack of visibility (with reference towards the people working in the organizations) (Ghobadian & Gallear, 1997, pp. 126-129). This lack of visibility certainly negatively affects the ability of the managerial staff to quickly mobilize the employees and unite them around a common defined vision, mission and objectives. Thus, larger enterprises are destined to spend much more effort and time for coordination. As opposed to this, smaller enterprises typically have less managerial levels (in most cases only one) and this manager is present, visible and involved in the daily execution of the business operations (Ghobadian & Gallear, 1997, pp. 126-129). Therefore, smaller enterprises are more agile, more flexible and need less effort for coordination of all the necessary activities to successfully adapt to the ever-changing conditions of the environment (Braojos-Gomez, Benitez-Amado, & Javier Llorens-Montes, 2015, p. 446; Daniel & Grimshaw, 2002, p. 135; Janczewska, 2014, p. 95; Werber & Žnidaršič, 2010, pp. 482-483).

This difference in the size of the managerial levels in small and large organizations affects correspondingly the decision-making. Larger enterprises, having many departments are more inclined towards decentralization of the decision-making, resulting in longer decision-making chains and consequently their slower enactment, which in turn is further related to their slower responsiveness to the changes in the organizational environments (Ghobadian & Gallear, 1997, pp. 126-129). Smaller enterprises, on the other hand, with only one managerial level, are able to make speed rapid decisions and therefore quickly adapt to the environmental changes (Ghobadian & Gallear, 1997, pp. 126-129; Kirchmer, 2011b, p. 150). However, this ability of smaller enterprises for rapid decision-making is not necessarily a good thing. Namely, managers in smaller enterprises often rely on their gut feeling, thus the quality of the decision is based on the quality of the gut feeling of the manager. Contrary to this, larger enterprises develop hierarchies and each hierarchy in its decision-making activities relies more on standard and formal methods, which could be seen as an enabler of more quality decisions (Ghobadian & Gallear, 1997, pp. 126-129).

All this converges in confirmation of the opinion that there is no unique way of managing business processes, and serves as a corroboration of the importance of the principle of context awareness during the BPM adoption and implementation (vom Brocke, Schmiedel, et al., 2014; vom Brocke, Zelt, & Schmiedel, 2016, p. 486).

Prior studies make recommendations for adoption of simple, less formal and less rigor BPM concepts, with emphasis on effective and efficient BPM initiatives/projects implementation in smaller enterprises which will lead to immediate visibility of the BPM benefits (Dallas & Wynn, 2014, p. 43; Kirchmer, 2011b; Reijers, van Wijk, Mutschler, & Leurs, 2010, pp. 57-58). This thinking respects the specific nature of smaller enterprises, where there is often lack of financial, human, technical and material resources (Dallas & Wynn, 2014, p. 26; Kirchmer, 2011b, pp. 149-150; Mendes & Lourenço, 2014, p. 690). Although these recommendations shall certainly alleviate the process of BPM adoption and implementation in smaller enterprises, we shouldn't neglect the importance of the continuity dimension stipulating that BPM should be a permanent practice that facilitates continuous gains in efficiency and effectiveness through pursuing process mindset based on developing organizational culture supportive of BPM (vom Brocke, Schmiedel, et al., 2014, p. 535).

There is some evidence suggesting that smaller enterprises, due to their lack of skills and expertise in BPM, are more inclined to enlist help from an external specialist in BPM adoption and implementation (Kirchmer, 2011b, p. 156). That is especially true in the scenario where smaller enterprises are externally pushed to implement BPM initiatives/projects to achieve alignment with environmental regulations or to satisfy important customers or vendors. Outsourcing, at first glance, in those situations looks like the best choice. However, should the enterprise strive for full BPM benefits realization, then it is inevitable to start to think about ways of developing its own BPM capabilities (Rosemann & vom Brocke, 2015, p. 106; vom Brocke, Schmiedel, et al., 2014). In the case of smaller enterprises, all this translates into a more extensive use of their limited resources. In the end, this resource stress should reflect itself in the vital BPM capabilities that ensure real understanding of BPM in the whole enterprise.

Acknowledging these findings, in the following subsections we provide a list of inhibitors of BPM adoption and implementation in microenterprises.

### **1.3.3 Inhibitors of BPM adoption and implementation in microenterprises**

Business and management studies, as well as information studies, have already identified many factors negatively affecting the BPM adoption and implementation in SMEs. Since

microenterprises are a subset of these enterprises, we believe these factors have detrimental effect on the process of BPM adoption and implementation in microenterprises as well.

Originating in the organizational, decisional, psycho-sociological, informational, and technological specificity of SMEs (Raymond, Bergeron, & Rivard, 1998, p. 76), these inhibitors put the BPM adopting and implementing organizations under pressure. That is the main reason why one should pay attention to them.

Building on previous research (Fu, Chang, & Wu, 2001; Hale & Cragg, 1996; Raymond et al., 1998; Riley & Brown, 2001), Chong (2007, p. 46) identifies the following list of factors inhibiting BPM implementation in SMEs:

- the absence of a cross-functional mindset amongst senior executives,
- lack of support from senior executives,
- lack of clarity on a strategic level,
- lack of IT expertise,
- lack of skill diversity,
- poor knowledge of process-oriented approaches,
- lack of methodological rigor in execution,
- lack of well-defined responsibility and accountability, and
- lack of suitable IT infrastructure.

In his study (Australian wine-industry was under scrutiny) a rather changed list of BPM inhibiting factors had emerged:

- lack of financial resources,
- lack of time,
- lack of support from senior executives,
- lack of IT expertise, and
- poor knowledge of process-oriented approaches.

The absence of the factors **Absence of a cross-functional mindset amongst senior executives** and **Lack of clarity on a strategic level** has been explained by the author to be connected with the relatively smaller size of the enterprises taking part in his research and their concern with short-term survival and not so much long-term strategy (Chong, 2007, p. 53). This, we believe, certainly holds ground in the context of microenterprises.

Following this study, Imanipour, Talebi, and Rezazadeh (2012, pp. 11-13) propose a refined and much more granular list of obstacles for BPM adoption and implementation in

SMEs, organized by their relation to organizational, technological, environmental and individual aspects of the organizations.

Kirchmer (2011b, p. 149), on the other hand, suggests a more condensed list of challenges of BPM adoption and implementation in SMEs:

“

- cost pressure,
- time pressure,
- human resource capacity,
- multiple roles of employees, and
- skill level

“

So what is common for all these BPM inhibitors?

It is clear that, in order to adopt and implement a BPM initiative/project, enterprises need resources. Resource utilization inevitably leads to creating additional cost for them. SMEs and especially microenterprises work under tremendous cost pressure in their environment. They simply cannot allow themselves to embark on a journey of long and expensive BPM adoption and implementation. This fact is inherently connected with their difficulties finding adequate financing. Namely, most often owners are the ones that take on the role of main contributor to the financing in smaller enterprises (Kirchmer, 2011b, p. 149). Therefore, BPM adoption and implementation in this case is heavily influenced by the risk averse of their owners, their understanding of the BPM practice and their beliefs in substantial benefits from BPM initiative/project adoption and implementation (Levy, Powell, & Yetton, 2002, p. 344).

Human resource capacity has also an enormous impact on the decision about BPM adoption and implementation in smaller enterprises. Microenterprises do not have an abundance of resources to utilize them during BPM adoption and implementation. Their limited resource capacity dictates a careful approach taking care not to endanger the daily execution of their business processes (Kirchmer, 2011b, p. 150). Their workers are often BPM skill deprived, and that is a consideration every microenterprise should think about before BPM adoption and implementation. We should also not forget the question of the IT infrastructure state in microenterprises, which often lack the skills and knowledge necessary for taking care of a BPM infrastructure (Chong, 2007, p. 49; Kirchmer, 2011b, p. 150).

Having in mind these costs and human resource limitations, microenterprises are also under huge time pressure to adopt and implement some BPM implementation. Their financial constraints impede them from hiring new employees or dedicating them to new

BPM initiative projects for a long time (Kirchmer, 2011b, p. 150). This means there is only a small time-window of opportunities for BPM initiative/project implementation.

However, once again originating in the organizational, decisional, psycho-sociological, informational, and technological specificity of SMEs (Raymond et al., 1998, p. 76), microenterprises also exhibit innate features that truly facilitate the BPM adoption and implementation.

#### **1.3.4 Facilitators of BPM adoption and implementation in microenterprises**

SMEs and even more so microenterprises have a simple, flexible, integrated, informal, flat organizational structure (Ghobadian & Gallear, 1997, pp. 126-129; Gray, Densten, & Sarros, 2003, p. 4; McAdam, 2000, pp. 37-38; Mendes & Lourenço, 2014, p. 710; Raymond et al., 1998, p. 83; Taylor & Taylor, 2014, pp. 848-850). There are fewer management levels, fewer departmental interfaces, higher owner visibility, and less bureaucracy (Ghobadian & Gallear, 1997, pp. 126-129; Gray et al., 2003; Mendes & Lourenço, 2014, p. 695; Taylor & Taylor, 2014, pp. 848-850). SMEs and especially microenterprises are more adaptive organizations and are more likely to present willingness and empowerment to implement BPM initiatives/projects (Mendes & Lourenço, 2014, p. 694).

Their proximity to market and customers, ability for rapid and quick decisive decision making and decision implementation, as well as their higher inclination towards open culture and innovativeness could possibly influence the outcome of the process of BPM adoption and implementation (Daniel & Grimshaw, 2002, p. 135; McAdam, 2000, p. 42; McAdam, Reid, & Gibson, 2004, p. 158). Having a small population of customers, microenterprises are really intimate to their customers, meaning they are more prone to successful BPM adoption and implementation, at least in the segment of customer orientation (Daniel & Grimshaw, 2002, p. 142; McAdam, 2000, p. 36; McAdam et al., 2004, p. 42).

Another strength for the SMEs and especially microenterprises could be their employees. Often, their employees exhibit a proactive and result-oriented work attitude (Kirchmer, 2011b, p. 151). Their familiarity with challenging situations equips them with enough experience and knowledge to act quickly and effectively even in uncertain and dynamic environments. This enormous human capacity, with strong work ethic, could likewise be positively utilized in the process of BPM adoption and implementation in microenterprises (Kirchmer, 2011b, p. 151).

Smaller enterprises have fewer employees in their organizational chart. This human capital scarcity in smaller enterprises could be interpreted both, as their weakness as well as their

strength. Positive interpretation follows the logic that there are less interaction possibilities in smaller enterprises (Caplow, 1957, p. 486), where employees know each-other pretty well and have established, in some point of the time, some kind of interaction. In larger enterprises that is not the case. In their context there is only an illusion of familiarity between employees (Caplow, 1957, p. 490). This sense of familiarity, exemplified in smaller enterprises, makes them less predisposed to communication problems. In larger ones, despite having excellent communication technologies at disposal, the social distance between all management layers has a detrimental effect on the quality of the communication (Caplow, 1957, p. 489). Similarly, having bigger human capital, larger enterprises require proportionally more self-maintenance, more coordination, and more control, which inevitably leads to more administration and more overhead components (Caplow, 1957, p. 502).

On the other side of the spectrum, negative interpretation of human capital scarcity follows the logic that smaller enterprises' stability is more influenced by each individual employee. Departure of an individual employee in a smaller organization is more likely to produce a negative effect on the enterprise as a whole. To somehow mitigate the risks related to this dependence on their employees, we believe that microenterprises should be concerned with showing strong scoring in the knowledge sharing domain of the BPM adoption and implementation.

### **1.3.5 Knowledge sharing and BPM**

The enactment of the business processes is inherently connected to the skills and knowledge of the process participants (Ariyachandra & Frolick, 2008, p. 116). Training of the employees, so they can obtain sufficient skills and knowledge is an obligatory requirement for subsequent employees' empowerment, which has been identified as an antecedent of the successful BPM adoption and implementation (Trkman, 2010, p. 126). Thus, knowledge creation, distribution and use are, in our opinion, indispensable parts of every BPM adoption and implementation, and as such warrant attention.

Due to the nature of their work, SMEs (and for that matter microenterprises, as being part of them, as well) have been found more susceptible to the establishment of organizational learning orientation (Taylor & Taylor, 2014, p. 857) with greater potential for effective flow of improvement ideas (Mendes & Lourenço, 2014, p. 710).

Serenko, Hardie, and Bontis (2007, pp. 617-618), in the arena of larger vs. smaller enterprises, speak about the issue of knowledge self-efficacy and knowledge connective efficacy, both being negatively related to the organizational size. The former refers to the employees' self-perceived value of sharing knowledge with colleagues, and the latter refers to the employees' expectations offered knowledge to find its way to the intended recipients

(who will further on utilize it). Serenko et al. (2007, pp. 617-618) offer six explanations for this negative relation:

- The larger the size of the enterprise, the more strongly one may believe that another colleague could potentially come up with a better idea or a more relevant one, which in turn discourages knowledge sharing.
- The larger the size of the enterprise, the fewer opportunities employees have to express their opinion.
- The larger the size of the enterprise, the less probability the offered idea will be heard and acted upon (if it is accepted, than there is less probability for feedback, and feedback is an important supportive factor of knowledge-sharing, and the lack of it may produce discouragement).
- Larger enterprises are less cohesive. Thus, in larger enterprises, an individual may feel it is less likely to reach an agreement concerning her suggestions.
- There is a positive relationship between enterprise size and the degree of a person's de-individualization. This means that the larger the enterprise, the less self-conscious are its employees, with less concentration on their tacit knowledge.
- Information pollution becomes a major issue in larger enterprises. People have at disposal large amounts of information, they cannot process, so they start to ignore some portions of it.

Having in mind these factors, Serenko et al. (2007, p. 618) conclude that as enterprise increases in size, employees may believe their suggestions will not reach those who may need them, and consequently develop a lower degree of knowledge connective efficacy that further on detrimentally effects knowledge sharing behavior. Thus, in relation to the knowledge sharing dimension of the BPM adoption and implementation, microenterprises are better positioned to foster effective knowledge sharing.

This can also be confirmed with the evidence for the emerging of transactive memory system in small groups, and microenterprises are such.

### **1.3.6 Transactive memory**

Business processes capture the way organizations perform work activities. To support the daily execution of these processes, throughout their entire life-cycle, enterprises acquire knowledge, which they store in their shared organizational memory. This memory consists of various data, information and knowledge needed for smooth operation of the existing business processes (Nevo & Wand, 2005, p. 549).

One of the main challenges of every enterprise is the maintenance of their large organizational memories. Even the smallest enterprises (i.e. microenterprises) must find a

way to cope with ever-increasing enlargement of their organizational memories. The enlargement of the organizational memory means enterprises have to find a way to share it better amongst their employees. The ease of access to this memory is certainly a great factor in optimal resource utilization for optimal business process performance.

Business processes, in that sense, could be seen as a flow of information through various constituents of the organizational structure. For sure, there are many ways in which these constituents store the acquired knowledge. Some make extensive use of the possibilities their information system offers them, some are more inclined towards writing their acquired knowledge in writing journals, and yet some are even inclined to rely on their cognitive capabilities and do not store that knowledge neither in electronic nor in journal-written form (Nevo & Wand, 2005, p. 550). Hence, in parallel with the large organizational memory, employees build another, separated individual knowledge memory they access during the performance of their daily work activities, related to the daily operation of the organizational businesses (Nevo & Wand, 2005, p. 550).

The theory on transactive memory tries to explain how these individual memory systems are combined within the organizational boundaries, meaning the “transactive memory is memory that is influenced by knowledge about the memory system of another person” (Lewis, 2003, p. 588). Or in other words, the transactive memory deals with the knowledge each employee has about “who knows what”. The name of this memory is derived upon the realization that employees have direct access only to their individual memory and they must transact (communicate) to get the knowledge stored in other individual memory (Nevo & Wand, 2005, p. 551). Since the natural habitat for developing transactive memory systems occurs in small groups, we believe a microenterprise planning on implementing BPM initiatives should make use of it.

In the literature there is an opinion that transactive memory systems are most effective when processes are comprised of (Lewis & Herndon, 2011):

- activities requiring multi-disciplinary knowledge,
- activities requiring highly specialized knowledge,
- activities requiring credible and accurate information,
- activities where it is possible to know the expertise of the colleagues,
- activities requiring a full knowledge utilization for their accomplishment, and
- activities where coordination between all the individuals is of utmost importance.

We are of the opinion these days’ business processes fall under this category and thus, we believe microenterprises should make use of their transactive memory systems during the BPM adoption and implementation.

## 1.4 BPM Lifecycle

As we already mentioned in the Introduction, BPM is concerned with managing business processes. This managing includes many various activities that can roughly be classified in the following groups (Dumas et al., 2013, p. 21):

- Process Identification,
- Process Discovery,
- Process Analysis,
- Process Redesign,
- Process Implementation, and
- Process Monitoring and Controlling.

We can perceive these groups of activities as being circularly connected (Figure 4). The logic of this circular connection describes the transition of a BPM project/initiative through seven phases.

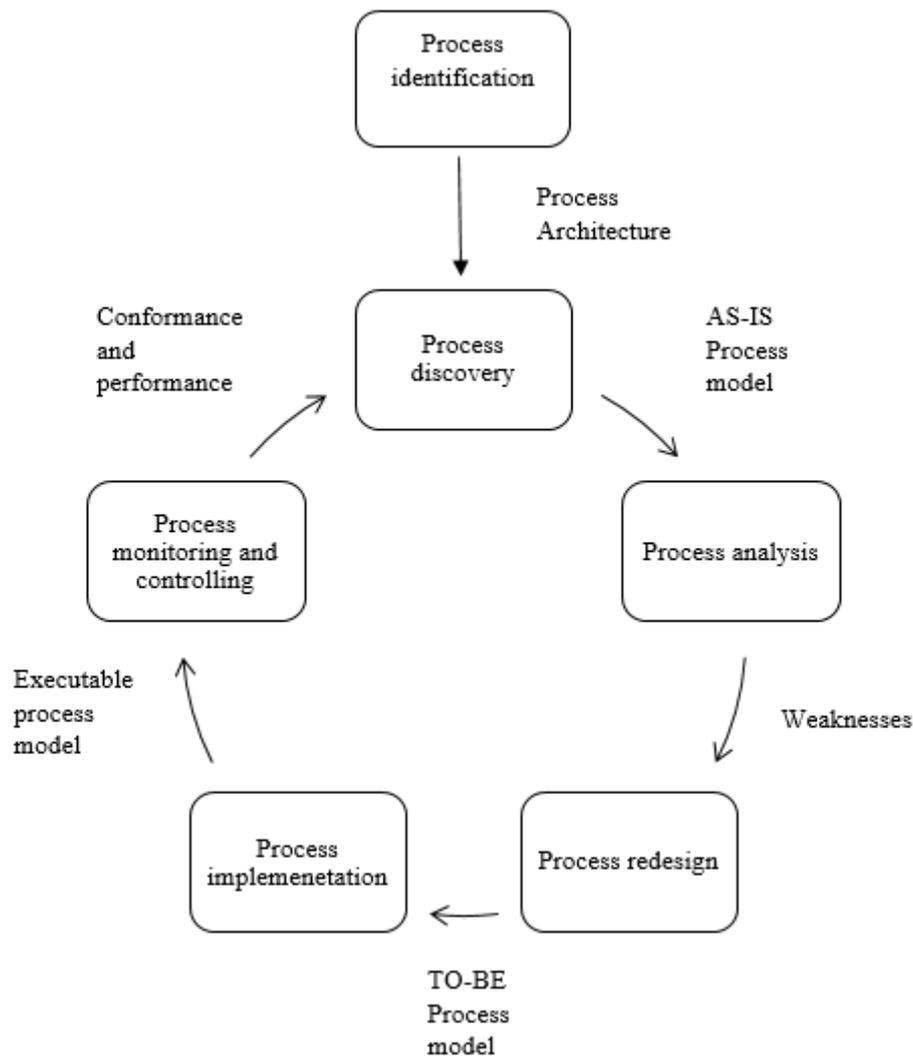
The first phase of **Process Identification** concentrates upon the propping up of the organization for BPM undertakes. This translates to establishing understanding of the way the organization performs work through identifying the processes most relevant for the organizational performance, establishing their boundaries, finding their relationships to each other, and indicating a comprehension of their strategic importance to the organizational value creation (Malinova, Hribar, & Mendling, 2014, p. 3).

The second phase of **Process Discovery** includes documenting the actual current state of the processes under loop (Dumas et al., 2013, p. 22). This documenting results in the so-called AS-IS process models. The AS-IS process models punctually capture the way the organization performs its work, and as such, they must be a product of some organizational-wide agreement about their accuracy.

The third phase of **Process Analysis** means engaging in (Dumas et al., 2013, p. 22; Malinova et al., 2014, p. 3):

- detection of process fallacies or process issues in the AS-IS processes,
- recognition of the noticed issues (evaluation of their impact on the organizational performance and their categorization with respect to the estimated effort for their resolve), and
- identification of the noticed issues by finding what exactly they are, why they are present, and what is their cause.

Figure 4. BPM Lifecycle



Source: M. Dumas, M. La Rosa, J. Mendling, & H. A. Reijers, *Fundamentals of business process management*, 2013, p. 21.

The fourth phase of **Process Redesign** encapsulates all the activities in the organization that are connected with the detection of the appropriate places for the direction of the improvement actions. Typically, a list of improvements is produced based on the detected, recognized and identified weaknesses in the **Process Discovery** phase. The improvements are prioritized according to the expected impact of their implementation on the organizational performance. Selected improvements are then embedded in a TO-BE process models (Dumas et al., 2013, p. 22).

The fifth phase of **Process Implementation** includes the putting to work of the previously generated TO-BE process models. This action triggers two kinds of changes (Dumas et al., 2013, p. 22; Malinova et al., 2014, p. 3):

- organizational changes (changing the work activities of the organization members by eliminating unnecessary ones or designing and assigning new ones), and
- process changes (development and deployment of IT-reliant work system, where the activities worth automating are automated).

The sixth phase of **Process Monitoring and Controlling** can be described as measuring the outputs of the redesigned processes against the expected organizational performance objectives. This measurement extends to detecting errors, deviations, bottlenecks, and designing and applying corrective steps (Dumas et al., 2013, p. 22; Malinova et al., 2014, p. 3).

Due to the dynamic nature of the inner as well as the outer organizational environment, an adjustment of the organizational goals could be produced, resulting in a new repetition of the whole BPM Lifecycle (Malinova et al., 2014, p. 3); thus, the circular connection of the BPM activities needed in the process of managing processes.

In order to be truly effective and impactful, each execution of the phases of the BPM Lifecycle, should follow some principles.

## 1.5 BPM Principles

Vom Brocke, Schmiedel, et al. (2014, p. 533) proposed ten propositions for successful deployment and use of BPM in organizations:

- context awareness,
- continuity,
- enablement,
- holism,
- institutionalization,
- involvement,
- joint understanding,
- purpose,
- simplicity, and
- technology appropriation.

The authors composed this list of principles in hope of demonstrating what is needed for effective and efficient application of BPM in the organizations. The principles, according to them, are complementary related to each other and describe guidelines that should lead to creating some value from initiating BPM projects.

The first principle of **context awareness** makes use of the contingency theories and serves as a warning of the one-size-fits all approach of BPM adoption and implementation in the organizations. Contingency theory as a form of an organizational theory at its heart has the conviction there is no “one best way” of managing and structuring organizations. The best organization, according to it, is contingent (dependent) upon various internal and external situational variables, so the best way to organize depends on the nature of the environment to which the organization must relate (vom Brocke et al., 2016).

BPM researches embraced the ideas of contingency theory and emphasized the certitude of a failure leading from the preference of a one-size-fits-all BPM approach (vom Brocke, Schmiedel, et al., 2014, p. 534). They also made the compelling argument we shouldn't neglect the importance of the organization size, processes specificities, resource availability, strategy's scope or organizational goals as contextual factors in BPM adoption and implementation.

The second principle of **continuity** simply emphasizes the necessity of embracing permanent process thinking or process philosophy in managing businesses and points to the false state of sufficiency after completion of individual BPM initiative/project as the centroid of the erroneous fixation on quick win that could lead to future stagnation (Jaklič, Trkman, Groznik, & Indihar Štemberger, 2006, p. 205; vom Brocke, Schmiedel, et al., 2014).

The third principle of **enablement** refers to the importance of the continual development and/or enhancement of the organizational BPM capabilities (those being either individual or wide-organizational) (vom Brocke, Schmiedel, et al., 2014, p. 535). Investing in BPM capabilities should be seen as an investment in skills and competencies that are in the end casually connected to the outcome of the initiated BPM projects (Ohtonen, 2015, p. 19). Since most often the outcome of BPM initiative/project is dependent on the people, processes and the technology the BPM adopting and implementing organization has at its disposal, investment in BPM capabilities could also be interpreted as an investment in enhancements of these organizational assets.

The fourth principle of **holism** brings forward the insurmountable importance of the abandonment of sub-optimal improvement efforts. Essentially, this principle calls for attention to the scenarios where focusing on narrow fallacies could in the end lead to wide-organizational detrimental effects (vom Brocke, Schmiedel, et al., 2014, pp. 535-536).

The fifth principle of **institutionalization** concentrates upon the need of introducing formal roles and responsibilities within the BPM adopting and implementing organization for ensuring organization-wide acceptance of the new recommended way of performing

work in line with the aims of the undertaken BPM initiative/project (vom Brocke, Schmiedel, et al., 2014, p. 536).

The sixth principle of **involvement** is built upon the principle of institutionalization and is based on the stakeholder theory of managing businesses. **Involvement** emphasizes the necessity of active participation of every stakeholder in the adoption and implementation of every BPM initiative/project (vom Brocke, Schmiedel, et al., 2014, pp. 536-537).

The seventh principle of **joint understanding** highlights the enormous share of the adoption of common process understandability in the effective BPM adoption and implementation (vom Brocke, Schmiedel, et al., 2014, p. 537). In that sense, this principle suggests becoming fully aware of the strength of the achieved common agreement on the way organization performs work. This understanding determines the success of the mobilization/motivation phase (of the organizational resources) while undertaking BPM initiative/project.

The eighth principle of **purpose** reminds us of the significance of always having in mind the objectives of the initiated BPM project. Very simple, but powerful conclusion of this principle is to never expect success, where there is a mismatch between organizational strategy and the goals of the initiated BPM initiative/project (Ariyachandra & Frolick, 2008, p. 117; Hernaus et al., 2016, p. 175; Tallon, 2007, p. 227; vom Brocke, Schmiedel, et al., 2014).

The ninth principle of **simplicity** points to the harming consequences of reaching desired goals through initiating resource stressful BPM projects, i.e. being effective at the expense of being not efficient. Exhausting resource stretching, following this principle could lead to sub-optimal improvements. In situations like that, the complexity and resource stress take toll on the whole wide acceptance of the process philosophy in managing businesses.

The tenth principle of **technology appropriation** gives prominence to the well-established positive influence of technology appropriation in either the reengineering or continuous improvements of the organizational process.

Summing-up, based on theory and practice, the application of the aforementioned guidelines should reduce the uncertainty, inherently related to the initiation of BPM projects (vom Brocke, Schmiedel, et al., 2014, p. 530).

## **1.6 BPM initiatives/projects**

BPM initiatives/projects are those initiatives/projects striving for (Miers, 2006, p. 1):

- enhancements of organizational performance (through costs reduction attainments or increase in productivity levels), and/or
- enhancements of organizational agility

through either process reengineering or process persistent improvements (van Wijk, 2009, p. iii; vom Brocke, Schmiedel, et al., 2014).

There are several BPM project characteristics (Reijers et al., 2010, pp. 51-52; van Wijk, 2009, pp. 11-12):

- initiation triggers,
- objectives (desired outcomes),
- focus area, and
- type of BPM applied.

Initiation triggers are the embodiments of the reasons why the BPM initiatives/projects are being put in motion. These reasons can be externally (most often they have some conformance nature) or internally situated. Irrespective of the origins of these reasons, researchers found it was best if they were put in the perspective of the wide organizational strategy. This means, BPM projects' success is dependent on the alignment between the organizational strategy and the objectives of the BPM initiatives/projects (Hernaus et al., 2016; Segatto, de Pádua, & Martinelli, 2013; Tallon, 2007; Trkman, 2010; von Rosing et al., 2014).

The objectives of the BPM initiative/projects describe the intended and pursued outcomes of the BPM initiatives/projects and later serve as a baseline in the performance measure of the success of the BPM initiatives/projects. The nature of the objectives could be technical, business or most often business-technical (Reijers et al., 2010, p. 52; van Wijk, 2009, pp. 21-22).

The focus area of the BPM initiative/project reveals exactly where, in the business process architecture, effort should be directed to reach the objectives of the BPM initiative/project. Thus, the focus could be on (Dumas et al., 2013, p. 35; Reijers et al., 2010, p. 52; van Wijk, 2009, p. 23; von Rosing et al., 2014, p. 162):

- value creating process (core processes), or
- supporting process (of the core processes), or
- managerial process (concerned with planning, organizing, coordinating and controlling the core and supporting processes).

The type of BPM points to the phases of the BPM Lifecycle (Figure 4) and describes what the circumstances of the BPM initiative/project with regard to the BPM Lifecycle are. Thus, the type of BPM could be: identification, discovery, analysis, redesign, implementation or monitoring and controlling.

BPM initiative is a project whose aim is somehow aligned with achieving improvements in the performance of individual processes happening in the organizational settings, group of processes or all the organizational processes. Being that the case, it is clear the output of every BPM initiative/project is based on some process modifications (adjustments) or process redesign (Dumas et al., 2013, pp. 253-254; vom Brocke, Schmiedel, et al., 2014).

Since BPM is predominantly seen as a mixture of science and art (Dumas et al., 2013, p. 185), where BPM practitioners choose to use one or more of the many BPM guidelines, concepts, methods, tools and technologies, understandably people look upon this freedom as on a creative problem, which cannot be methodologically controlled and/or governed. However, we already have some proposed approaches as to how to control/govern the creative part of the BPM practical adoption and implementation, by applying best practices (created building on the experience of organizations with similar creative problems). One such methodology is the Heuristic Process Redesign (Dumas et al., 2013, p. 262).

## **1.7 BPM heuristics**

Heuristic Process Redesign is a methodology for incremental process improvements (Dumas et al., 2013, p. 261). For the purpose of our study, we decided to use this methodology, because of its demonstrated usefulness in the case of improvements within the context of existing business processes (Mansar & Reijers, 2007, p. 193). But what is this methodology about?

Mansar and Reijers (2007, p. 196) proposed a framework, for the situation where organizations undertake BPM initiatives/projects. Their framework comprises of six elements (Mansar & Reijers, 2007, pp. 196-197):

- the customer of the business process (customer can be internal, i.e. situated in the organization or external);
- the products and services, i.e. the output of the business processes;
- the business processes with regard to:
  - operation view (describing how the process is designed, with emphasis on the activities forming the process and their characteristics such as nature, size, degree of adaptability to performers' wishes, degree of automation, degree of dependence on coordination, ...); and

- behavior view (describing the situation that leads to triggering business process instances, and how these activities are scheduled);
- the participants in business processes seen through the lens of the:
  - organizational structure (describing the elements of the structure such as: roles, users, groups, divisions, ...); and the
  - population of the organization (describing the people used as a resource in the execution of the business processes within the organization, and their relationships);
- the information (either used by other resources in the business processes or created during the execution of the business processes);
- the technology used to support the execution of the business processes; and
- the external environment (customers are excluded).

Classified within this framework, the authors then presented a list of **best practices** that organizations could use during their BPM initiative/project adoption and implementation (Dumas et al., 2013, pp. 263-272; Mansar & Reijers, 2007, pp. 198-199):

- If the aim of the BPM initiative/project is an improvement in the communication and the interaction with the organizational external customers, one can opt for: **control relocation, contact reduction, and integration.**
- If the aim of the BPM initiative/project is an improvement in the workflow, one can choose: **case types, activity elimination, case-based work, triage, and activity composition.**
- If the aim of the BPM initiative/project is an improvement in the logic of the business process, one can make use of: **resequencing, parallelism, knock-out, and exception.**
- If the aim of the BPM initiative/project is an improvement in the resource allocation, one can select one or more of these heuristics: **case assignment, flexible assignment, centralization, split responsibilities, customer teams, numerical involvement, and case manager.**
- If the aim of the BPM initiative/project is an improvement in the resources per se, one can opt for: **extra resources, specialist-generalist, and empower.**
- If the aim of the BPM initiative/project is an improvement in the information flow, one can think about: **control addition, and buffering.**
- If the aim of the BPM initiative/project is an improvement based on technology utilization, one can put in motion: **activity automation, integral technology.**
- If the aim of the BPM initiative/project is an improvement using some form of collaboration with external parties, one can opt for: **trusted part, outsourcing, and interfacing.**

Whatever the nature of the aims of the BPM initiatives/project, their success has been found to be contingent on six elements, the so-called core BPM elements (Rosemann & vom Brocke, 2015, pp. 110-111):

- strategic alignment,
- governance,
- methods,
- information technology,
- people, and
- culture.

## 1.8 BPM core elements

The importance of the **strategic alignment** has already been emphasized throughout this study. Therefore, further on, we shall concentrate on the other BPM core elements.

The **BPM Governance** establishes mechanisms in the organization adopting and implementing BPM for clear delineation of (Rosemann & vom Brocke, 2015, p. 111):

- the decision-making roles, meaning comprehensible distribution of the power behind how the decision about BPM adoption and implementation is made (“who can make which decision” about the resource utilization for the BPM initiative/project);
- the process participants roles, with the associated responsibilities going with those process participants roles (von Rosing et al., 2014, p. 255):
  - process owner,
  - process analyst,
  - process engineer, and
  - process architect, etc.;
- the BPM performance metrics, collected for proper execution of the Monitoring and Controlling phase of the BPM Lifecycle.

The **BPM Methods** are defined as the set of all the tools and techniques applied during the execution of all BPM Lifecycle phases.

The **Information technology** element describes all the IT artifacts (“bundles of material and cultural properties packaged in some socially recognizable form such as hardware and/or software” (Orlikowski & Lacono, 2001, p. 121)) utilized in the execution of the different phases of the BPM Lifecycle.

The **People** element incorporates the importance of the social perspective of every BPM initiative/project. People with their skills, expertise, and BPM knowledge, during the BPM

initiative/project implementation collaborate and communicate to each other, educate themselves and contribute to the creation of the common shared organizational BPM knowledge (Rosemann & vom Brocke, 2015, pp. 117-118). One interesting concept of these collaborating and communicating efforts of people within the BPM adoption and implementation is the surface of transactive memory, which we already mentioned before in the subsection **Knowledge sharing and BPM**.

The last core element of BPM is the **Organizational culture**. Because often, this element in BPM adoption and implementation has been underestimated (Bandara, Alibabaei, & Aghdasi, 2009; Hribar & Mendling, 2014, p. 3), leading to BPM initiative/project failure, in continuance we shall elaborate more extensively on the importance of the **Organizational culture**.

Upon these six core elements of BPM, and the capabilities related to them, hinge the success of BPM initiatives/projects. A useful approach for measurement of that success is proposed in the form of different maturity models.

## 1.9 BPM maturity models

Maturity models typically “represent theories about how an organization’s capabilities evolve in a stage-by-stage manner along an anticipated, desired, or logical path” (Röglinger, Pöppelbuß, & Becker, 2012, p. 330). They are recognized as “important improvement tools for organizations” (van Looy, de Backer, Poels, & Snoeck, 2013, p. 466) outlining “the stages of maturation paths and describing the characteristics of every stage and the logical relationship between the stages” (Röglinger et al., 2012, p. 330). Offered as conceptual models that consist of a sequence of discrete maturity levels for a class of processes in one or more business domains, they represent an “anticipated, desired, or typical evolutionary path for organizational processes” (Tarhan, Turetken, & Reijers, 2016, p. 122).

Each maturity level covers a number of concrete capability areas (or areas of related capabilities), in which a business process can perform at a particular capability level (Škrinjar et al., 2008, p. 740). Van Looy, de Backer, and Poels (2014, p. 194) identified 6 main capability areas of BPM maturity models:

- modeling (comprises methods and IT for the design and analysis of business processes);
- deployment (comprises methods and IT for the implementation and enactment of business processes, as well as their measurement and control during the enactment of the processes);

- optimization (comprises methods and IT for the evaluation and improvement of the business processes after the enactment. Improvements vary from incremental (e.g. total quality management) to radical (e.g. reengineering);
- management (comprises the daily management of the business processes, including the required roles and responsibilities with corresponding skills and training. It also involves linking process goals to the organizational strategy and the relationships with customers, suppliers and other stakeholders);
- (process-oriented) culture (comprises values that favor business processes and their translation in attitudes and behaviors. This capability area requires appraisals and rewards that consider process results and top management commitment); and
- structure (comprises a shift in the organization chart to visualize horizontal business processes and specific governance bodies to coordinate the management of all the business processes within an organization).

Maturity models evaluate individually these capability areas, producing capability levels, which are further on associated with a particular maturity level (van Looy et al., 2013, p. 472). There is a plethora of maturity models these days. In this work we opted to use the **BPO maturity model** (hereinafter: BPO-MM) (McCormack & Johnson, 2001; McCormack et al., 2009). This decision was made because:

- BPO-MM is one of the most studied and referred to maturity model in the academic literature (Tarhan et al., 2016, pp. 127-128);
- it has studies reporting both on its application and validation, claiming the connection of its usage to increased business performance (Röglinger et al., 2012, p. 33);
- BPO-MM has both descriptive purposes (it can be applied for as-is assessments), as well as prescriptive (it indicates how to identify desirable future maturity levels and it provides guidance on how to implement appropriate improvement measures) (Röglinger et al., 2012, p. 336); and
- it produces quantitative data (can be easily statistically analyzed and compared, independently of the assessors' interpretations), and takes into account all the business processes in the involved organizations (Buh, Kovačič, & Indihar Štemberger, 2015, p. 251; Hribar & Mendling, 2014, p. 4).

BPO-MM is based on the construct of business process orientation that describes a four-stage lane for systematically advancing business processes along the maturity continuum (Ad Hoc, Defined, Linked, and Integrated level), where each individual stage builds on the work of the previous stages to apply improvement strategies that are appropriate for the current maturity level (Škrinjar et al., 2008, p. 740). The following definitions are provided for the stages that an organization goes through, when becoming business process oriented (McCormack et al., 2009, p. 794; Škrinjar et al., 2008, p. 740):

“

- **Ad Hoc:** The processes are unstructured and ill-defined. Process measures are not in place and the jobs and organizational structures are based upon traditional functions, not horizontal processes.
- **Defined:** The basic processes are defined and documented and are available in flow diagrams. Changes to these processes must now undergo a formal procedure. Jobs and organizational structures include a process aspect, and yet remain basically functional. Representatives from functional areas (sales, manufacturing, etc.) have regular meetings to coordinate with each other, but only as representatives of their traditional functions.
- **Linked:** The breakthrough level. Managers employ process management with strategic intent and results. Broad process jobs and structures are put in place outside the traditional functions.
- **Integrated:** Company, its vendors and suppliers, take cooperation to the process level. Organizational structures and jobs are based on processes, and traditional functions begin to be equal or sometimes subordinate to the process ones. Process measures and management systems are deeply imbedded in the organization.

“

BP0-MM has 3 basic components of maturity and 2 supporting. The basic components are (McCormack et al., 2009, p. 795) :

“

- **Process view**  
Documentation of process steps, activities and tasks, comes in both visual and written formats that allow people in different job functions and companies to communicate using the same vocabulary. This component includes broad understanding of the processes across the organization, not just documentation.
- **Process jobs**  
These jobs include horizontal rather than vertical responsibility. People participate and take ownership of the entire process. Titles such as “Supply chain team member,” “Order fulfillment process owner,” and “Global supply chain manager” are examples.
- **Process measurement and management systems**  
This component includes process measurement systems, rewards for process improvement, outcome measurements, customer-driven and team-driven measures, and rewards.

“

The supporting components provide the structure and culture that enable the basic components to operate, interactively (McCormack et al., 2009, p. 796). These components are (McCormack et al., 2009, p. 796):

“

- **Process structure.** This is the framework that defines the process management team and breaks down the old functional “compartments,” such as sales and manufacturing, which inhibit enterprise-wide or horizontal thinking. Without it, people with “process

owner” titles cannot do their jobs. These structures include horizontal teams, partnerships, and shared ownership.

- **Customer-focused process values, and beliefs.** These are the values and beliefs that energize an organization. For instance, they might include trust in the customer’s sales forecasts and belief that fellow team members are completely committed to continuous process improvement.

“

In addition to the BPO maturity model, for the purposes of this study we also choose to use the **Process Performance Index** (hereinafter: PPI), proposed by Rummler-Brache group (Rummler & Brache, 2004). On the basis of 10 key success factors, this model, at its core has the calculation of the PPI. PPI is often seen as an overall measure of the process management environment in organizations and suggests how well an organization is managing its key business processes (Hribar & Mendling, 2014, p. 4). We decided to use this model because similarly to BPO-MM, PPI has been already extensively used, is well documented and many times validated for evaluating the overall state of the organizational business processes, especially in the phase of as-is analysis (Buh et al., 2015, p. 251; Hribar & Mendling, 2014, p. 4).

Rummler-Brache group methodology on evaluating business process maturity includes 3 stages of maturation level (Rummler & Brache, 2004, pp. 7-8):

“

- **Process management initiation**

This is the initial stage of overall process management. It is characterized by organizations that are neophytes to process management and have a desire to learn more about managing their businesses via their processes. Fortunately, there is usually a strong desire to learn more about process management. Organizations in this stage often can achieve significant benefits by beginning to focus on their business processes in a deliberate and disciplined manner. PPI Indexes ranging from 10 to 25 points fall into this category.

- **Process management evolution**

In this second stage of process management, organizations are “process-aware” and often have instituted formal process improvement programs. In some cases, their process management is maturing through the use of process and performance metrics. Process owners are usually identified and internal improvement teams become dedicated resources. However, companies in this stage have not yet reached their full process management potential and are typically “leaving significant process money on the table.” PPI Indexes of 26 to 40 points comprise this category.

- **Process management mastery**

Business process management is a way of life for organizations in this final stage of process maturity. Process owners are rewarded on the performance of their assigned processes. Performance metrics are prolific throughout the organization and are

focused on all three levels of performance: organization, process and individual performer. Every employee in the organization understands business processes and how they are the vehicle for delivering value (goods and services) to their customers. In short, process management is fully integrated into the organization's planning and overall performance evaluation. PPI Indexes of 41 to 50 points are included in this category.

“

Previous study claims that the organizational process maturity scores on both models are contingent on their organizational culture (Hribar & Mendling, 2014, p. 1). As a consequence of this, organizational culture should always be taken in perspective while adopting and implementing BPM.

### **1.10 BPM and organizational culture**

Organizational culture refers to all the values, assumptions, symbols, beliefs and practices individual members of the organization appropriate as their own and associate with expected/desired organizational behavior (Wiewiora, Trigunarsyah, Murphy, & Coffey, 2013, p. 1164). It is the glue that keeps the organization together, defining the organization as a distinct member of its environment and encapsulating all its deepest unconscious intangible parts (Cameron & Quinn, 2011, p. 18; Schein, 2010, p. 14).

Organizational culture emerges as phenomenon that answers the need for integration, community and oneness of every individual organizational member by firstly accumulating different (Schein, 2010, pp. 12-13):

- behavioral regularities,
- beliefs,
- norms,
- values,
- principles of reasoning,
- rules,
- skills,
- habits,
- shared meanings,
- integrating symbols, or
- rituals, and

secondly, by distillation of the aforementioned artifacts and their condensing in empirically identified successful artifacts that are appropriated by the existent individual organizational members, and further on transferred to every new organizational member through the process of socialization (Schein, 2010, p. 18).

Organizational culture has already been identified as a strong contingent factor of successful BPM adoption and implementation (Rosemann & vom Brocke, 2015; vom Brocke et al., 2016, pp. 489-490). In order to study this contingency, many researches adopted the Competitive values framework of Cameron and Quinn (2011, pp. 33-35) that distinguishes two dimensions of organizational culture making difference between organizations insisting on:

- flexibility, discretion and dynamism vs. stability, order and control; and
- internal orientation, integration and unity vs. external orientation, differentiation and rivalry.

Based on these two dimensions, the authors proposed the following organizational classification according to their organizational culture (Figure 5):

- hierarchy,
- market,
- clan, and
- adhocracy.

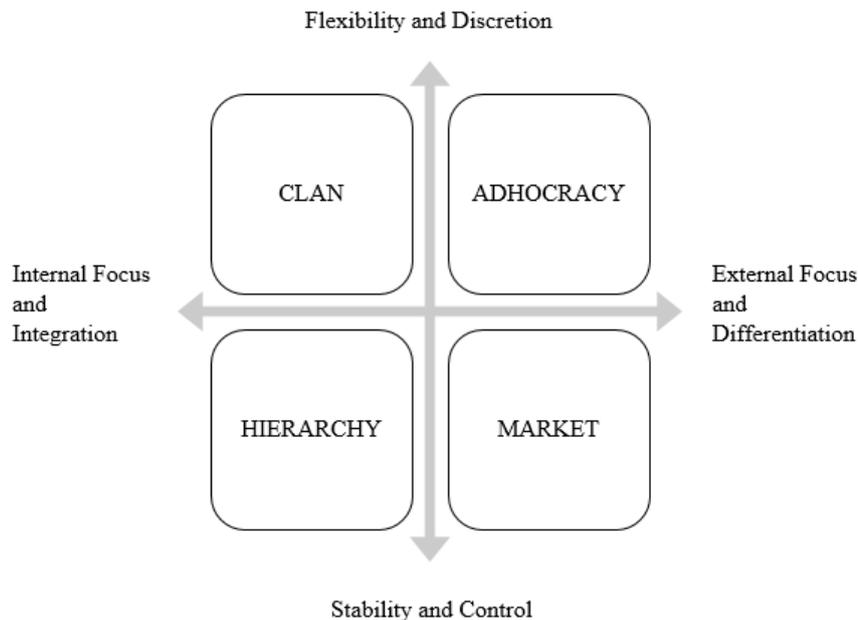
Organizations exhibiting hierarchy culture on long-term demonstrate concerns about organizational stability, predictability and efficiency. Thus, the emphasis in these organizations is on introducing rigid formal work processes with clear formalized structures ensuring efficient and reliable productivity levels.

Organizations with dominant market culture are externally oriented, relying on market mechanisms and mostly inclined towards achieving favorable competitive position (based on pursuing result-based philosophy of excellence in productivity and profit aspects of the organizational performance).

Clan organizations are family-like organizations, where there is a strong leadership commitment to the well-being of every individual member of the organization. In turn, as a balance to this strong leadership commitment, individual members exhibit strong loyalty feelings. The main characteristics of this culture are the impulses towards enhancement of teamwork, employees' empowerment and consensual decision-making.

Adhocracy organizations are the most flexible and adaptable organizations, where risk taking, creativity and innovation are most cherished employees' traits. With strong inclination towards experimentation, these organizations bet on creating new products, services and knowledge as means for reaching rapid-growth.

Figure 5. Competitive Values Framework And Culture Classification



Source: K. S. Cameron, & R. E. Quinn, *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*, 2011, p. 35.

In their work, Cameron and Quinn (2011, p. 35) emphasize the mixture of all aforementioned types of culture within a single organization. This classification, according to them is based on the dominant presence of one of the four culture types and to measure this dominance they proposed the OCAI instrument. According to this classification, researchers found several insights on the influence of the organizational culture on factors important for successful BPM adoption and implementation.

Hribar and Mendling (2014, p. 11) for instance, found the clan organizations to be more successful in BPM adoption and implementation and the hierarchy organizations to be less successful. These results correspond to the found correlation between the process quality and the existence of flexible, and flat organizational structures; and the positive relationship between process quality and employees' decision-making involvement (Grau & Moormann, 2014, p. 8).

Researchers also found evidence that clan organizations were better positioned to achieve effective knowledge sharing in comparison to market organizations, where embraced competitiveness and rivalry negatively affects the process of effective knowledge sharing (Wiewiora et al., 2013, p. 1170). However, in both cases of clan and market cultures, a positive relationship has been found between the organizational culture type and the employees' computer self-efficacy (belief in the ability to perform activities well, using the available technology, and reach desirable outcomes) (Shao, Wang, & Feng, 2015, p. 602).

With regard to the sustainability of the lean processes (and BPM certainly aspires to achieve sustainable lean processes ), Pakdil and Leonard (2015, p. 729), without producing empirical evidence, made the following propositions:

- hierarchy culture is the most positively related culture type to the standardization and predictable productivity outputs as a manifestations of an effective lean process, as opposed to the other three culture types;
- market culture is the most positively related culture type to the efficiency, productivity and continuous quality improvements as a manifestations of an effective lean processes, as opposed to the other three culture types;
- clan culture is the most positively related culture type to the employee involvement and teamwork as a manifestations of an effective lean processes, as opposed to the other three culture types; and
- adhocracy culture is the most positively related culture type to the creativity, problem-solving effectiveness and decentralization as a manifestations of an effective lean process, as opposed to the other three culture types.

But what are the cultural artifacts most important for successful BPM adoption and implementation?

### **1.10.1 BPM Culture**

A world-wide Delphi study (Schmiedel et al., 2014, p. 43) identified 4 enabling factors that positively influence the output of every BPM initiatives (CERT):

“

- Customer orientation (C)
  - The proactive and responsive attitude toward the needs of process output recipients.
- Excellence (E)
  - The orientation toward continuous improvement and innovation to achieve superior process performance.
- Responsibility (R)
  - The commitment to process objectives and the accountability for process decisions.
- Teamwork (T)
  - The positive attitude towards cross-functional collaboration.

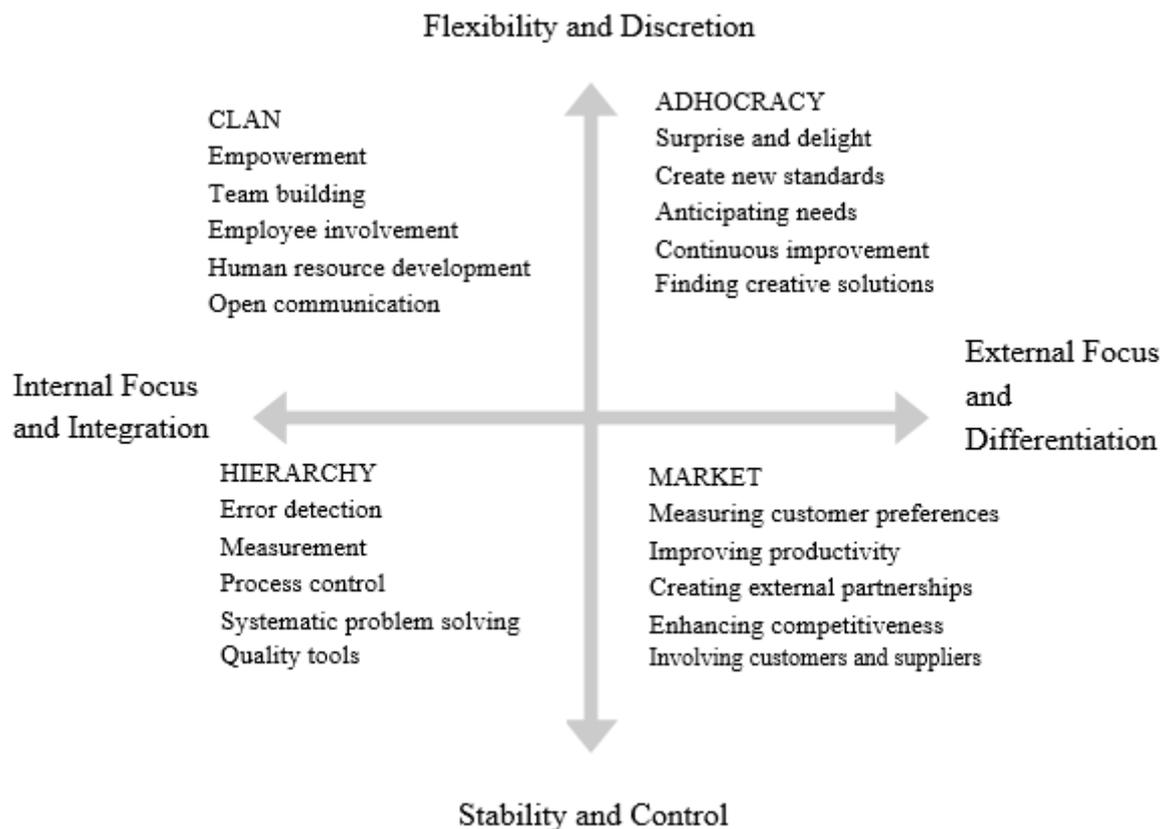
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All these cultural values are seen as positively related to the successful BPM adoption and implementation in organizations. But how are these values corresponding to the Competitive values framework of Cameron and Quinn (2011)?

### 1.10.2 BPM Culture, Competitive values framework TQM

Cameron and Quinn (2011, p. 50) identified the most appropriate quality strategies (Figure 6) according to their Competitive values framework in pursuing total quality management (hereinafter: TQM), which, as we have already mentioned, is an ingredient of BPM (see **A short history of BPM**).

Figure 6. Organizational Culutre and TQM



Source: K. S. Cameron, & R. E. Quinn, *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*, 2011, p. 50.

Comparing these quality strategies to the CERT core values of BPM culture (culture supportive of BPM adoption and implementation), it can be seen that all four organizational types exhibit some positive relationship to the CERT values, but somehow Clan, Adhocracy, and Market culture are found to be most suitable for introducing and deployment of different BPM concepts, and Hierarchy culture as least suitable (Gimenez-Espin, Jiménez-Jiménez, & Martínez-Costa, 2013, pp. 684-688; Hribar & Mendling, 2014, pp. 10-11). Table 2 presents this relationship between individual cultural types and CERT supportive values of BPM adoption and implementation.

Table 2. CERT and Organizational Culutre

		Hierarchy	Market	Clan	Adhocracy
<b>Process customer orientation</b>	internal	?	X	✓	X
	external	X	✓	X	✓
<b>Excellence</b>	continuous improvement	X	✓	✓	✓
	innovation	X	?	✓	✓
<b>Responsibility</b>	accountability to process objectives	✓	✓	?	?
	commitment to process objectives	✓	✓	?	?
<b>Teamwork (cross-departmental)</b>	supportive formal structure	?	?	✓	?
	supportive informal structure	?	?	✓	✓

Legend:

? relationship not identified

✓ positive relationship identified

X negative relationship identified

Adapted from: J.A. Gimenez-Espin, D. Jiménez-Jiménez, & M. Martínez-Costa, *Organizational culture for total quality management*, 2013 pp. 678-692.

## 2 CASE STUDY

### 2.1 Case selection

Fin-Pro was chosen as a subject of the case study, because this microenterprise showed interest in introducing and deploying various BPM concepts. The microenterprise likewise indicated preparedness to disclose all the relevant information, and all of its employees were eager to start the BPM adoption and implementation. Support from the owner was guaranteed. She also stated to be open for suggestions about process improvements and willing to share confidential enterprise materials, and project documentations.

## **2.2 Data collection**

An active participant observation (Johnson, Avenarius, & Weatherford, 2006) was chosen as best approach for conducting the case study because the access to relevant information was contingent on assuming an active role (Fin-Pro relied on our opinion on the formulation of the cases for the BPM initiatives/projects, due to their lack of specialized knowledge in the BPM adoption and implementation domain). For the purposes of this study, both qualitative and quantitative data were collected. For the qualitative part of the primary sources of information an in-depth interviews, projects documentation, process models, and process documentation, was used. For the quantitative part several questionnaires were used:

- Appendix A: BPO Maturity model (McCormack and Johnson, 2001) questionnaire.
- Appendix B: Process Performance Index (Rummler-Brache, 2004) PPI questionnaire.
- Appendix C: Organizational culture assessment instrument OCAI (Cameron and Quinn, 2006) questionnaire.
- Appendix D: BPM culture (Schmiedel, vom Brocke, and Recker, 2014) instrument.
- Appendix E: Adapted SERVPERF (Kettinger and Lee, 1997) questionnaire.

Since Fin-Pro had already had process models and an extensive process documentation, first a scan of the process situation in the microenterprise was performed (BPO-MM and PPI). Then, an interview with the owner was conducted with the purpose of identification of their motivation for BPM adoption and implementation, and detection of the challenges they anticipated on that road. The interview was followed by distribution of the BPO-MM, PPI, OCAI, and BPM culture questionnaires. Based on the literature review and the scores on these questionnaires, a list of BPM initiatives/projects was introduced to the Fin-Pro. This list served as a basis for discussion and evaluation of the anticipated/expected efforts and BPM benefits (PICK chart). Further on, the implementation of the BPM initiatives/projects was closely followed (notes were produced).

## **2.3 Enterprise description**

Fin-Pro is an IT company, registered in Ljubljana, Slovenia. It develops software solutions for medical laboratories and employs 9 people. Thus, it is an IT microenterprise. Their main product is L@B-IS. L@B-IS is a laboratory information system that supports all of the aspects of work in medical laboratories (from buying materials to laboratory work and management of data regarding patient specimen identification, tests requested, results reported, quality control testing, and other aspects of sample analysis). Their vision is to remain one of the leading companies in Slovenia in the field of automation of medical laboratories. In the environment, in which they operate, they want to increase their

competitiveness and business performance, thereby achieving the goal to become modern, economically strong, recognizable and respected enterprise.

With the establishment of the quality management system ISO 9001: 2000 Fin-Pro have made their first important step in the journey of BPM adoption and implementation (processes were identified and process owners were appointed, see Figure 7). This standard is based on eight quality management principles (Hoyle, 2001, pp. 35-42):

“

- Principle 1 – Customer focus
  - Organizations depend on their customers and therefore should understand current and future customer needs, meet customer requirements and strive to exceed customer expectations.
- Principle 2 – Leadership
  - Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.
- Principle 3 – Involvement of people
  - People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.
- Principle 4 – Process approach
  - A desired result is achieved more efficiently when activities and related resources are managed as a process.
- Principle 5 – System approach to management
  - Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.
- Principle 6 – Continual improvement
  - Continual improvement of the organization's overall performance should be a permanent objective of the organization.
- Principle 7 – Factual approach to decision making
  - Effective decisions are based on the analysis of data and information.
- Principle 8 – Mutually beneficial supplier relationships
  - An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

“

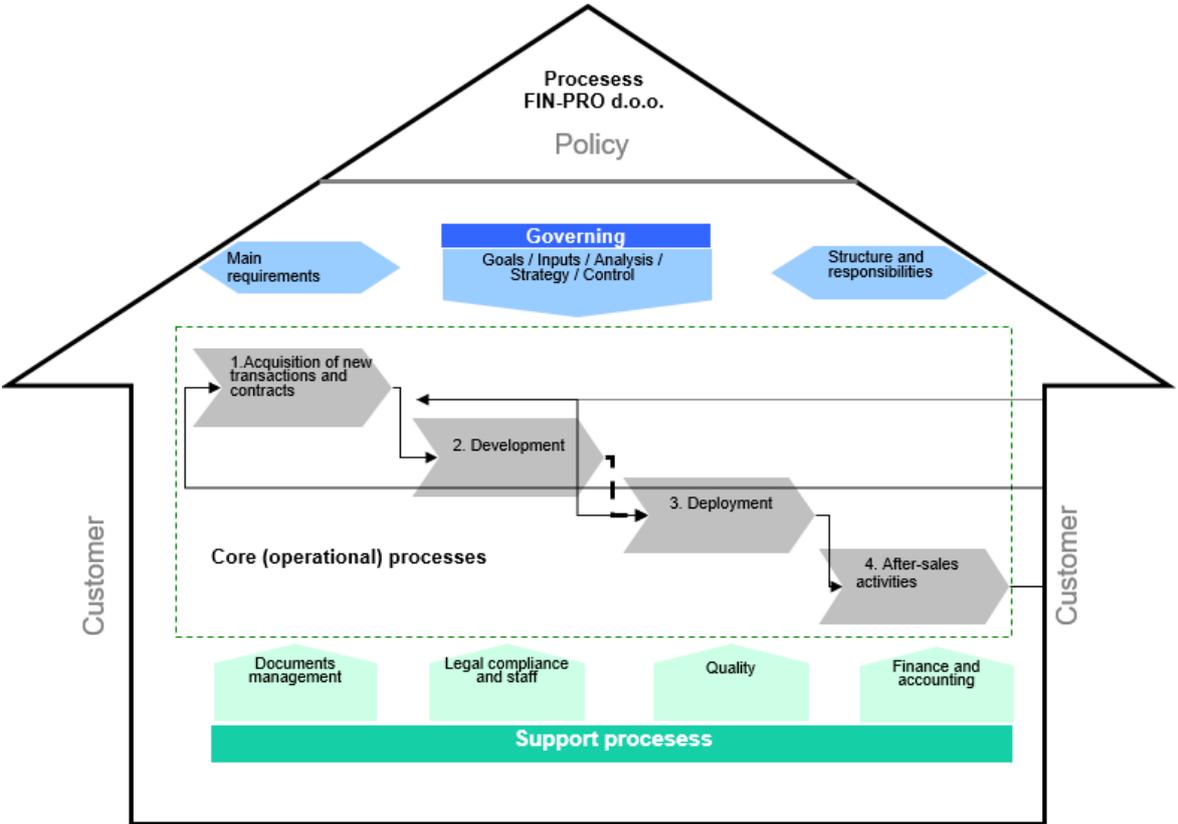
The overlapping aspects of the eight quality management principles with the four BPM initiatives/projects' enabling factors (CERT) are easily recognizable. Therefore, unsurprisingly, it is generally accepted that organizations that have adopted ISO 9000 are in a better position to adopt BPM. We say unsurprisingly, because ISO 9000, as stated by the Principle 4 and Principle 5, requires the process approach (main fundamental BPM

ingredient), and the BPM phase of Process Monitoring and controlling (Figure 4) requires an established quality management system.

After the adoption of ISO 9001 standard, Fin-Pro started to think about BPM adoption and implementation and further utilization of the possible synergistic effects of the combination of ISO 9001 and BPM. Acknowledging the danger of pursuing ISO 9001 style of static process documenting, and recognizing the great potentials of BPM (relying on metric history) for:

- performance improvements, and
- agility improvements

Figure 7. Fin-Pro Processes



Fin-Pro decided to embark on a journey of BPM adoption and implementation. For that purpose, a scan of the situation in Fin-Pro took place and a list with BPM initiatives was proposed to the owner of the organization. From that list, several projects were selected as appropriate for implementation, and in continuation of this work we present the results of this implementation integrally, from the moment of creation of the BPM initiative/project list, through the decision-making process on the initiatives/projects that are most

appropriate for implementation, to the results of the implemented BPM initiatives/projects and their effect on the business performance of Fin-Pro.

## 2.4 Scan of the process situation in Fin-Pro

The BPO-MM questionnaire was presented to all the employees of Fin-Pro. After gathering data, an average grade of 46 out of 60 points for the BPO maturity level of Fin-Pro has been produced. Following the classification (McCormack et al., 2009, p. 797) Fin-Pro maturity level was found to be **Linked**, meaning Fin-Pro employs process management with strategic intent and results, and broad process jobs and structures are put in place outside the traditional functions. Averaged grades for the individual components were found to be:

- process view: 3,1 (Linked),
- process jobs: 3,67 (Linked), and
- process measurement and management systems: 2,3 (Linked).

We decided to perform affirmative check of these results and came to the conclusion the found results are in line with the literature on BPO maturity model application, which stipulates **Linked** maturity level means processes are defined, documented and available and some rudimentary form of performance measurement, where at last process measures are defined and documented, exists (McCormack et al., 2009, p. 795).

The PPI questionnaire was presented to all the Fin-Pro employees and an average grade was then produced for each individual key success factor and for the overall PPI. The overall value of PPI was found to be 29,625 meaning, according to Rummler-Brache methodology, Fin-Pro is in the second maturity level of **Process management evolution**. That in turn suggests there is space for improvements because some process potential is not used. Analyzing the results of the PPI evaluation by dimensions, we found there is not enough consciousness in the organization about the importance of the adoption of process thinking philosophy. Eventually, this lack of awareness, we believe, lead Fin-Pro to the insufficient monitoring of the processes' health, due to the insufficient concentration on measuring process performance.

We proceed with the scanning of the situation in Fin-Pro by analyzing its culture through the concepts of Competitive Values Framework and BPM culture. The OCAI instrument indicated that the dominant present organization culture in Fin-Pro is **Clan** (Figure 8).

BPM culture instrument, on the other hand exposed the **Responsibility** dimension as relatively the most critical dimension (Figure 9). These results are aligned to the results of the BPO-MM and the PPI, where the scores on dimensions related to the accountability

and commitment to business objectives were found somewhat lower to other dimensions (in BPO-MM the dimension of **Process measurement and management systems**, and in PPI the **Process management** and **Process metrics dimensions**). We interpreted this to be related to the predominance of the **Clan** culture, leading to the establishment of modest and not so ambitious performance measurement practice in the organization.

Figure 8. Fin-Pro Organizational Culutre

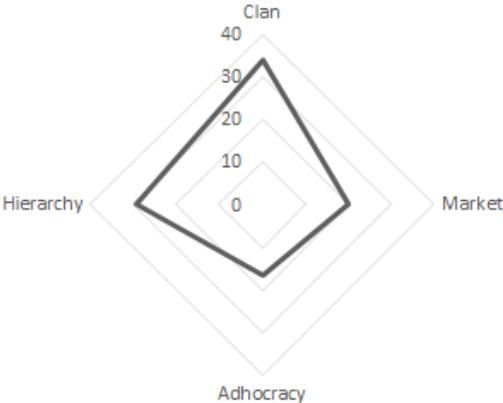


Figure 9. Fin-Pro CERT Scores



Based on the scanning of the situation in Fin-Pro, using the OCAI instrument, the BPM culture instrument, the BPO-MM and the PPI, and taking in respect the BPM Redesign heuristics, a list of BPM initiatives was produced for improvements in the process management of the organization.

## 2.5 Fin-Pro BPM initiatives/projects

The first proposed BPM initiative related to the BPM dimension of internal strength of the communications happening in the organization, and the establishment of clear delineation of who is doing what, what has been already done, how far something has come to final completion, what has been communicated with the customers, what has been communicated with the suppliers and what has been communicated between the organizational members. Surely the strength of this communications reflects itself in the quality of the organizational customer orientation (both internally and externally directed), which has been identified as one of the crucial elements of the BPM adoption and implementation. However, this internal strength of the communications also has some effects on the organizational information-processing capabilities and the degree of uncertainty. Increase in the organizational information-processing capabilities positively relates to the successful business operation, and decrease in the degree of the disorder (organizational entropy) positively relates to the establishment of better access of the employees to the management and each other. Further on, the quality of this access determines the quality of the teamwork, which was also identified as one of the core BPM supportive values, worth promoting in the organizations. For that reason a creation of one **centralized mail** for the execution of the **After-sales process** was proposed.

The second proposition for BPM initiative was also connected with the customer dimension of the execution of the **Acquisition of new transactions and contracts process** and **After-sales activities process**. Acquiring new transactions and contracts depends on negotiation between the organization and its new or existing customers. Negotiations happen in oral or written form, with customers expecting clear definition of the financial and time frame for the execution of the transaction. Fin-Pro embraces the service economy and completely engages in selling services, where they offer their customers the functions of their products and not the ownership of them. However, during the process discovery and analysis, a weakness has been detected in the **Acquisition of new transactions and contracts process** and **After-sales activities process**. Namely, Fin-Pro did not have a service catalogue database. Negotiations between Fin-Pro and the potential customers were mostly happening between the owner of the company and the potential customers. Because of this heavy owner involvement, the completion of the **Acquisition of new transactions and contracts process** instances was hampered, taking much time (due to other important owner obligations). **After-sales activities process** was also affected, since there were some cases where the classification of the transaction as payable or existing-contract extension was not so clear (due to the different reading of the existing contracts among the employees). This was happening even though Fin-Pro used standardized service level agreements with all of its customers. For that reason, introduction of **service catalogue** with clear definition of service price and classification of each service as payable or covered by the standardized service level agreements was seen as necessity for the

improvement of the **Acquisition of new transactions and contracts process** and the **After-sales activities process**. The former process, based on the introduction of this service catalogue, was proposed for redesign in the direction of employee empowerment in the negotiation of new transactions and contracts, and less owner involvement. The expected value of this proposition was a decrease of the process instances conclusion time frame.

The third proposed BPM initiative concentrated on the need for change in the employee-owner meetings. Fin-Pro already had regularly scheduled employee-owner meetings, but the agenda of these meetings was found to be ineffective, because each employee presented what they have individually accomplished in between meeting time-frame and then the owner had to make the connection between their individual accomplishments and the status of the opened processes instances (projects). Because each process had already had an appointed process owner, a proposition was made for utilization of these facts. Thus, **the agenda of the employee-owner meetings** was proposed to be changed in-line with the expectations of the activities of the process owners. Process owners, in that sense, were found most suitable for presenting the progress of process instances execution; simply because Fin-Pro is a microenterprise and typically process owners had a dual role as project owners.

Process performance depends on the performance of each process participant, and the performance of process participants depends on their skills and knowledge. For that reason, an employee training session was found to be a useful instrument for enhancements of: the employees' skills and knowledge directly, and the process performance indirectly (through process participant performance). The fourth BPM initiative, proposed for adoption and implementation in Fin-Pro, relied on these assertions. Although, as we already mentioned in this study, a transactive memory system in small groups develops in time and this transactive memory system has some positive influence on the quality of the teamwork, microenterprises shouldn't rely so much on specialists knowledge, due to various risks connected with this (when specialist leave the microenterprise then a unfulfilled knowledge gap emerges, which must be quickly repaired for sustaining acceptable organizational performance levels). Thus, a monthly training session, intended to enhance the collective memory and increase the knowledge level of each distributed link of the transactive memory system, was proposed. Because job satisfaction and playfulness are found to be positively related, this fact was respected in the formulation of this initiative. In order to increase the knowledge of the employees, without a decrease in their job satisfaction, an approach with an introduction of a monthly **quiz** was proposed. The rating of each employee in acquiring new skills and knowledge is to be computed. To alleviate the fear effect of poor employees' performance, and to enhance the motivation for acquiring new knowledge and obtaining new skills, an expanded, balanced solution was proposed, comprising of two things:

- each employee proposes one question in the composition of the quiz (thus none will score null), and
- the poorest performer is sanctioned by being obliged to pay for one round of drinks for every employee.

The outcomes of this quiz should serve as an indication of the effectiveness of the training sessions (intended to be useful for the owner in monitoring and controlling). The design of the quiz ensures acquiring relatively context important knowledge (because each employee, based on his/her work experience, proposes one question he/she finds relevant) and strengthening of the informal connections between the employees, important for the effective teamwork performance (the devised sanction for poorest performer ensures this).

Microenterprises operate, being resource poor (as we have already mentioned in this study), under tremendous resource stress and high resource utilization, which in turn could have adverse effect on the microenterprises process performance. In order to overcome this difficulty a fifth proposition for BPM initiative in Fin-Pro was made for the process of **After-sales activities**. This process involves regular customer contacts and the performance of this process depends on the availability of the process participants. Thus, the time for the completion of this process' instances is heavily influenced by the process participants' workloads. The BPM customer heuristics could be applied for the purpose of an increase of the availability of the organizational resources and the processes instances' completion time. The first step of the fifth BPM initiative/project proposal was the identification of the top ten issues customers have in using the products and services of Fin-Pro, and then creation of **video-films for customers self-assistance** in resolving these issues. The implementation of this BPM initiative/project should result in quality, time and cost improvements in the execution of the **After-sales activities process** in Fin-Pro because of the:

- reduction in the customer contacts (which can be time consuming, and seen as an entrance point of (misunderstanding) errors, resulting in the extension of the time dimension of the process' instance); and
- movement of the control towards the customer (which can reduce the probability of errors-products of communicational noise in the established communication channels between the employees of Fin-Pro and their customers, and therefore increase the level of customers satisfaction).

There has been wide agreement on the truthfulness of the Pareto principle that 80% percent of the revenue of the enterprises is generated on the transactions connected with 20% of their customers (Baker, 2014, pp. 156-157). In light of this finding, the sixth proposal for

BPM initiative/project in Fin-Pro was the identification of the top 12 customers and the evaluation of their satisfaction with the service quality Fin-Pro offers them. Because microenterprises have a small customer base, they are in a position to establish productive intimate customer relationships. But, however small the customer base, microenterprises should realize the importance of the top customers and should take measures to sustain or even enlarge the level of cooperation with these customers. One way of doing this is through the introduction of the concept of **customer process owners**, relating in some sense to the organizational heuristics of split responsibilities and case manager and in other ways to the concept of customer process owner (Trkman, Mertens, Viaene, & Gemmel, 2015, p. 257).

The seventh proposition for BPM initiative/project in Fin-Pro was concerned with the improvement of the **Development process** of the organization. This process includes the definition of customer requirements, solution design and development, integration and testing, and finally acceptance, installation and deployment of the developed solution. The analysis of this process detected, recognized and identified issues in the sub-process of integration and testing of the solution that had detrimental effects in the acceptance, installation and deployment of the sub-process further on. In order to resolve these issues, a proposition for **update in the products/services testing templates** has been chosen as a corner stone for the seventh BPM initiative/project. Improvements in the testing sub-process are expected to lead to improvements in the products/service quality which in turn should have impact on the quality in use (the degree to which users believe, used product/service, meets their needs to achieve their specific goals with effectiveness, efficiency, freedom from risk and satisfaction in the specific context of use (ISO, 2011)) of the developed software products/service.

The eighth proposition for BPM initiative/project in Fin-Pro concentrated on the need for improvement in the **After-sales process**. Namely, during the process discovery and analysis phases for this process, it had been found that some sub-processes and their activities could be eliminated or automated. These were the so-called control activities of monitoring the state of the Fin-Pro servers, deployed in the customer environment. Although there was some temptation for complete elimination of these activities, the risk connected with this elimination pushed us in forming this initiative, based on the heuristics of automation and control addition. Therefore, the corner stone of this BPM initiative/project was the development of technology for automating of all the manually performed activities in the monitoring of the state of the servers, deployed in the customer environment. By applying this solution, the risks of potential disastrous incidents, with long periods of time of customers' inaccessibility to the products and services of Fin-Pro should be minimized, at the expense of some additional costs.

The ninth proposal for BPM initiative/project, based on the scores on the BPO-MM and PPI, was related to identifying suitable performance measures in order to enhance the existing performance measurement system in Fin-Pro.

## **2.6 The PICK chart for the proposed BPM initiatives/projects**

After the formulation of the BPM initiatives/projects a PICK chart was produced (Figure 10). PICK charts are a useful tool for prioritization sequencing of many concurring BPM initiatives/projects. PICK chart is comprised of two dimensions:

- the payoff (benefit) dimension, where the level of expected benefits, gained as outcomes of the compared BPM initiative/projects is evaluated; and
- the difficulty of implementation dimension, where the level of expected effort investment and time and costs related to that effort investment for BPM initiative/project implementation is evaluated.

These two dimensions enable further classification of the BPM initiatives/projects in four types:

- easy to do, with low payoff – Possible;
- easy to do, with high payoff – Implement;
- hard to do, with high payoff – Challenge; and
- hard to do, with low payoff – Kill.

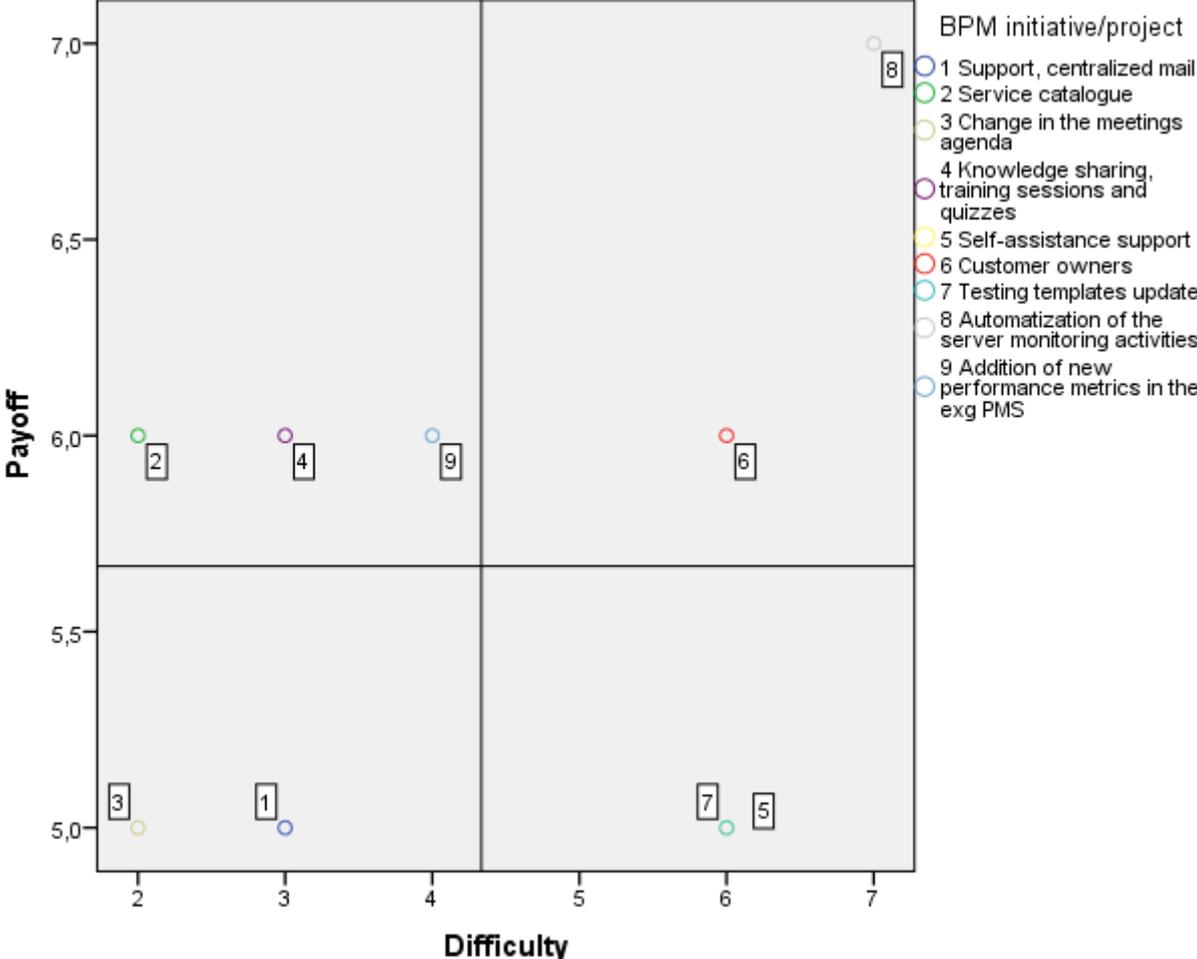
The evaluation of the PICK chart, in Fin-Pro was done consensually, building on the capabilities for inclusive and quick decision-making in microenterprises and clan cultures. The payoff and difficulty dimensions were evaluated on the numerical scale from one to seven, where one stood for the lowest expected payoff and the lowest expected effort input for BPM initiative/project implementation, and seven stood for the highest expected payoff and the highest expected effort input.

## **2.7 BPM initiative/project implementation**

The PICK classification of the proposed BPM initiatives/projects laid the ground for an interesting and productive discussion among all the employees and the owner of the organization. Unsurprisingly, the second BPM improvement initiative/project was quickly decided to be implemented. As for the other BPM initiatives/projects, after careful consideration, consensually it was decided for all the possible (the first, the second, the third, the fourth and the ninth) and one (the sixth) challenging BPM initiative/project to be

implemented. In continuity of the study, we present the status on the implementation continuum for the chosen BPM initiatives/projects, up to 1 August 2016.

Figure 10. Fin-Pro PICK Chart



2.7.1 Implementation of the first BPM initiative/project

Fin-Pro had their own mail server. Maintenance and administration efforts for having their own mail server were found to be unnecessary, knowing the relative inexpensive possibilities for outsourcing. Total cost of ownership analysis provided this insight, and the company has already established contact for implementation of outsourced solutions on this matter, expecting to be fully implemented by the end of 2016. Thus, the implementation of one centralized mail for the execution of the **After-sales activities process** was decided to be postponed and implemented as an ingredient in the implementation of the outsourced mail server.

### **2.7.2 Implementation of the second BPM initiative/project**

Fin-Pro had already implemented a knowledge database. It was decided as most appropriate to implement the service catalogue inside this knowledge database, accessible to every employee. First, a service inventory was created and then this inventory was incorporated in the knowledge database for easy access for every employee. Second, this service inventory was extended by classification of each service as payable or part of the standardized service level agreement. Thus, establishing clear distinction between what is covered by the standardized service level agreements and what is an instance of additional payable service sustenance for the customers, minimized the chances for the raise of misunderstandings (which was often case in the past). Third, service inventory was extended to include a price attribute for every payable service. Fourth, employees got greater empowerment in leading the negotiation with the customers (this being part of the **Acquisition of new transactions and contracts process**). This empowerment was bounded to presenting an offer to the customers. Should customers inquire about some discounts, the power decision was decided to stay within the owner of the company. The implementation of this BPM initiative/project lasted one work week (five employee/days). Six months after the implementation of this BPM initiative/project, a realized benefits analysis was performed founding improvements in the execution of the **Acquisition of new transactions and contracts process**. Namely, prior to this BPM initiative/project implementation, the owner of the company was solely responsible for leading all the negotiations between the company and the potential (new) customers. The average time between a customer's inquire and company offer was seven days. After the implementation of this BPM initiative/project, the average time was found to be two days. Thus, the performance improvement in this segment was found to be by factor 3.5, and therefore the implementation of this BPM initiative/project was found to be successful.

### **2.7.3 Implementation of the third BPM initiative/project**

The third BPM initiative/project was easy to implement. The decision for implementation was quickly made and propagated straightforward. For measuring the successfulness of this initiative/project an interview with the owner was found to be most appropriate. That was the case, because prior to the implementation of this BPM initiative/project, the owner was the one who had to connect all the employees stories in conclusion about the state of all the opened processes instances (projects), and after the implementation of this BPM initiative/project the process owners (who also had the dual role of project owners) took over this responsibility. The owner was satisfied with the effects of this change saying:

“

I found the change in the regularly scheduled meetings' agenda useful and liberating. Previously, I often had confusion as to what is going on in the company, as I had to make a sense of all the employees' reports on their individual progress performing their work

activities, and now I am getting a condensed projects' state report from the process/project owners which is easy to follow and understand. I found the new meetings' agenda to be great also for the fact of achieving more in less time with these new meetings' agenda.

“

For that reason, the output of this BPM initiative/project was also found to be successful, at least in the eyes of the owner. However, following the stakeholder theory, it was assessed to be necessary to also check the successfulness of this BPM initiative/project through the prism of process owners and other employees. A structured interview with all the employees was performed and the results were found to be in compliance with the owner assessment.

#### **2.7.4 Implementation of the fourth BPM initiative/project**

The fourth BPM initiative/project is currently in the state of execution. The first cycle of the training sessions was already scheduled, as well as the date for the first quiz. An assessment of the employees' self-efficacy, and the strength of the transactive memory system, has been also scheduled. Because, the state of the implementation of this BPM initiative/project is pending/in execution, we are not in a position to provide an evaluation of the outputs. However, our hypothesis is that there should be an increase in the self-efficacy and the strength of the transactive memory system after the complete implementation of this BPM initiative/project. Thus, it would be interesting to see if this is the case.

#### **2.7.5 Implementation of the sixth BPM initiative/project**

The sixth BPM initiative/project was completed in July 2016. Since there is always some latency in the arising of the benefits of the improvements' implementation, unfortunately we are not in a position to present a longitudinal effect study. Thus, in continuance we present the preparation for this longitudinal effect study.

First, a list of top 11 customer organizations (from 70 customer organizations) was produced, responsible for the generation of nearly 80% of the company's' revenue. Second, a service satisfaction survey to all the users of Fin-Pro products and services in those organizations was sent. The design of this service satisfaction survey was based on the **SERVPERF** instrument (Kettinger & Lee, 1997, p. 228).

The **SERVPERF** instrument we chose to use, is an adapted version of the **SERVQUAL** instrument (Parasuraman & Zeithaml, 1994, p. 207) for evaluation of the service quality in the context of information systems (hereinafter: IS) and IT use. IS/IT Service quality has four dimensions (Kettinger & Lee, 1997, p. 224):

- reliability (“The ability to perform a promised service dependably and accurately”);
- responsiveness (“The willingness to help customers and to provide prompt service”);
- assurance (“The knowledge and courtesy of employees and their ability to convey trust and confidence”); and
- empathy (“The caring attitude which provides individualized attention to customers”).

We chose to use this instrument, for its popularity, easiness of application, and recorded evidence of empirical validation through the years (Landrum, Prybutok, Zhang, & Peak, 2009, p. 20).

However, an adaption to this instrument was made, in line with the assumption of the importance of the knowledge of customers’ processes in achieving “customer centricity” (Trkman et al., 2015, p. 250). Thus, following the logic of the user acceptance of technology model (Venkatesh, Morris, Davis, & Davis, 2003) we included questions about the customers perception on the knowledge of Fin-Pro employees about their processes, measured through the lens of:

- how well Fin-Pro employees know their processes,
- how easy is to communicate their process needs to the Fin-Pro employees, and
- how useful they find communicating about process improvements with Fin-Pro employees.

Thus, we obtained a list of 16 questions, where the customers evaluated each question on seven-degree Likert scale from one – strongly agree to seven – strongly disagree (i.e. one stood for the highest grade and seven for the lowest grade).

The questionnaire was sent to all the customers of Fin-Pro by an email (70 customer organizations with overall 300 users of Fin-Pro products and services). Table 3 presents the participation rate.

After gathering the data we approached the phase of data preparation for statistical processing.

Table 3. Survey Participation Rate

<b>Number of users of Fin-Pro products and services</b>	<b>Number of participants in the survey</b>	<b>Participation rate (%)</b>
300	156	52

First, we had to take an appropriate action with respect to the missing values in our gathered data. For the purposes of this study we chose the option of changing missing

values with the series mean in order to uphold the sample means for the variables and achieve minimum impact of missing data on the found results. In our case, there were five single imputations. We had 16 variables and 156 respondents, meaning the load of the imputations was 0.2%. A sensitivity analysis was also performed to assess the impact on reasonable changes in the missing values replacement, which showed us the impact of the imputation is acceptably negligible.

Second, we computed the value of the first order SERVPERF variables (Reliability, Responsiveness, Assurance, Empathy), and the value of the second order SERVPERF variable, serving as an indicator of the customer satisfaction with the provided services. Both the first order SERVPERF variables and the second order SERVPERF variable were computed as a mean of the variables on which these new variables according to the instrument depend on. In this step, the value of the composited Process knowledge variable was also computed as a mean between the values of the added variables in the customer survey.

Third, we checked the truthfulness of the assumption of parametric tests, i.e. normality of data distribution. For all of the six variables, the Kolmogorov-Smirnov (K-S) test was found to be significant ( $p < 0.01$ ), therefore, in our further analysis, we relied on using non-parametric tests.

A dummy variable was added in our data set, indicating if the answer is coming from customer - member of the previously identified top 11 customers or not, and using this dummy variable a Mann-Whitney test was performed to find possible differences in perceptions in service quality dimensions between customers, being members of the top 11 group, and customers not being members of the top 11 group. The Mann-Whitney test indicated that:

- customers, not being members of the top 11 group, were more satisfied with the Reliability of the service, provided by Fin-Pro employees ( $Mdn=1.67$ ), than the customers, being members of the top 11 group ( $Mdn=2.00$ ),  $U=2234$ ,  $p=0.004$ ,  $r=0.23$ ;
- customers, not being members of the top 11 group, were more satisfied with the Assurance of the service, provided by Fin-Pro employees ( $Mdn=1.33$ ), than the customers, being members of the top 11 group ( $Mdn=1.67$ ),  $U=2328$ ,  $p=0.01$ ,  $r=0.21$ ; and
- customers, not being members of the top 11 group were more satisfied with the overall quality of the service (SERVPERF), provided by Fin-Pro employees ( $Mdn=1.56$ ), than the customers, being members of the top 11 group ( $Mdn=2.75$ ),  $U=2429$ ,  $p=0.031$ ,  $r=0.17$ .

Similarly, the Mann-Whitney test also indicated customers, not being members of the top 11 group, evaluated the Fin-Pro employees' knowledge about their processes more favorably ( $Mdn=1.67$ ), than the customers, being member of the top 11 group ( $Mdn=2.00$ ),  $U=2436,5$ ,  $p=0.03$ ,  $r=0.17$ .

Because of the previously mentioned Pareto principle that emphasize the importance of this top 11 customers for the revenue generation of Fin-Pro (rule 20/80), and the found correlation between the overall service quality and the process knowledge, the company decided to appoint customer process owners for the top 11 customers to tackle the gap in the service quality and customer process knowledge between these two groups (A Spearman's rank-order correlation was run to determine the relationship between 156 customers' SERVPERF and process knowledge scores. There was a strong, positive correlation between SERVPERF and process knowledge scores, which was statistically significant ( $r_s(156) = 0.685$ ,  $p < 0.01$ )). For that purpose, there was a meeting between all the employees, where they consensually decided what should be the role of the customer process owners and who will be appointed for that role. The discussion about the role of the customer process owner converged in these responsibilities:

- he/she is the single point of entrance for non-trivial customer demands (every demand not present in the standardized service level agreement);
- he/she is the one responsible for the coordination of all the activities, needed for the satisfaction of all the customers' needs related to their non-trivial demands;
- he/she ensures there is regular Fin-Pro – customer communication, gives updates to the customers about the work progress on their non-trivial demands, and is responsible for the timely and accurate resolution of the customer needs;
- he/she is the one who speaks on behalf of the customer inside Fin-Pro, i.e. he/she is the customer defender; and
- he/she has the authorization to mobilize every available resource for the timely and accurate completion of all the activities related to the non-trivial customer demands.

After the definition of the role of the customer process owner and the responsibilities related to it, Fin-Pro appointed customer process owners for each one of the previously identified top 11 customers. Next year (2017), in order to check if these measures have had a positive impact, Fin-Pro intends to repeat the evaluation of customer satisfaction, applying the same survey. Initial customers' interviews were already performed, and the results are encouraging, supporting the usefulness of the chosen approach for customer experience enhancements.

## 2.7.6 Implementation of the ninth BPM initiative/project

Fin-Pro already had an established balance scorecard performance measure system. For that reason, a suggestion for refinement of that system was made to the owner. The owner accepted this suggestion and appointed one person to be responsible for proper measurement of the identified (old and new) key performance metrics and regular periodical presentations of the results to the owner. Also, a repetitive BPO MM and PPI evaluation was scheduled for the end of this year, and it would be interesting to see how this change reflects in the evaluation of previously identified weak spots of the process measurement in the company.

## 3 ANALYSIS AND DISCUSSION

### 3.1 Research questions answers and implications

Table 4 presents our answers to the research questions, based on the literature review and the performed case study in Fin-Pro.

Following the literature review and the performed case study in Fin-Pro, microenterprises deploy and use BPM concepts, for the same reasons as large enterprises do: **organizational performance improvements**, and **better positioning** for future amortization of the effects of both the **anticipated and unexpected environmental changes** (RQ1b).

This somehow contradicts previous research, indicating smaller enterprises are not so much concentrated on long-term survival (Chong, 2007, p. 53). Naturally, the approach to the achievement of organizational performance improvements, and better agility in microenterprises is different, comparing to larger organizations. Nevertheless, the existence of omnipresent hyper-competitiveness in these days' economy dictates vigilance from all the enterprises. Hence, **all the enterprises are interested in applying process improvement concepts and hope for the best outcomes**. Microenterprises, in that regard, are no exception.

Due to various reasons, there are differences in BPM adoption and implementation in microenterprise and larger enterprises. **Time**, and **resource scarcity** in Fin-Pro were identified as main challenges of accepting an ambitious BPM improvements plan (RQ1c). That is why the proposed and agreed list of BPM initiatives/projects was carefully constructed, concentrating on **small, less formal and less rigid process changes**, with expected **visibility** of eventual **benefits** in a **short time period** (RQ1a). In that regard the found results closely follow the literature review with one noticeable exception. Namely, IT availability and IT expertise were previously identified as potential problematic features

of smaller enterprises. However, due to the pervasive IT presence in virtually every aspect of life, we tend to disagree with that assessment. The days when IT was a luxury are long over. There are probably two reasons as to why this happened. First, due to various ergonomic achievements, the IT solutions are these days ease to use, and second, they are widely affordable (existence of open-source IT solutions). This lead to high level of IT penetration in everyday life, and some researchers exclaimed IT does not matter anymore (Carr, 2003). To some extent, we agree with this postulation. Still, there are many enterprises employing elderly people who are showing some signs of discomfort of using IT. In the subject of the case study Fin-Pro, that was not the case, because Fin-Pro had young employees, feeling comfortable adopting IT in their daily activities. Although, Fin-Pro specializes in the economy segment of IT development and offering IT services to their customers, we believe the **IT dimension** of BPM adoption and implementation is really **not hindering issue anymore** in the process of BPM adoption and implementation in smaller enterprises altogether.

Table 4. Research Questions Answers

Research question	Answer
<b>RQ1a:</b> How are microenterprises deploying and using BPM concepts in their environment?	Microenterprises are more inclined towards small, less formal and less rigid process changes, with expected visibility of eventual benefits in short time period.
<b>RQ1b:</b> What is their motivation for BPM adoption and implementation?	Achieving organizational performance improvements, and better positioning for future amortization of the effects of both the anticipated and unexpected environmental changes.
<b>RQ1c:</b> What challenges do they face in adopting and implementing BPM initiatives/projects?	Time, and resource scarcity are the main challenges in BPM adoption and implementation in microenterprises. Due to the pervasive presence of IT in life generally, IT is no longer a hindering issue.
<b>RQ1d:</b> How can they overcome those challenges?	A shift towards more socially and less technology oriented aspects of BPM in microenterprises is needed. The key issue is the willingness and enthusiasm for process changes.
<b>RQ2:</b> How can microenterprises utilize their culture in the process of BPM adoption and implementation?	By making use of their knowledge oriented culture, and relying on the effectiveness of their transactive memory system.
<b>RQ3:</b> How can microenterprises utilize their proximity to their customers for achieving better customer orientation?	Since customer service quality correlates to customer process knowledge, microenterprises can achieve better customer orientation by introducing the concept of customer process owners.

In that regard, we believe a shift towards more socially and less technology oriented aspects of BPM is needed. For that matter, in Fin-Pro we found the **willingness** for change to be the main driver of successful BPM initiatives/projects adoption and implementation

(RQ1d). Microenterprises are, in our opinion well positioned to unlock BPM benefits, should they have the willingness to do that. Certainly, the owner, and his/her willingness are of utmost importance. Since owner has the ultimate decision-making power in microenterprises, his/her ability to sense the opportunities BPM offers is of tremendous value to the microenterprise as a whole.

Because microenterprises, due to their specificities, are less likely to evolve in hierarchies, we see their culture positively related to the BPM adoption and implementation. Literature review identified dominant Hierarchy culture as least BPM aligned culture type. Realizing the small probability of encountering a dominant presence of such culture in microenterprises, we believe microenterprises should use their culture in the BPM adoption and implementation as an enablement factor of BPM adoption and implementation success. Irrespectively of their dominant culture type, we believe microenterprises almost always exhibit **knowledge oriented culture** (RQ2). Fin-Pro, in that regard, showed great **enthusiasm** to hear proposals for process improvements, and learn how to enact changes promising improvements. We observed curiosity in both the owner and the employees. This is most probably related to the generic profile of the owner and the employees in microenterprises, which characterize them as independent loving, capable to work under tremendous work pressure, and capable of practical pro-active innovative thinking individuals (Kirchmer, 2011b, p. 150).

It was interesting to see, how employees in Fin-Pro relied on their transactive memory system in the execution of their business processes. We found their **transactive memory system** as an **effective tool for effective processes' instances executions and conclusion**. Fin-Pro employees used this transactive memory system in each one of their core business processes, enhancing their informal relationships and bolstering their team-work effectiveness. Since process execution is dependent on collaboration of employees, we believe this approach of process execution relying on the strengths of the transactive memory system, to be positively related to the processes performance of microenterprises (RQ2).

Customer orientation is one of the corner building blocks of culture supportive of BPM (Schmiedel et al., 2014, p. 45). Environmental business shifts dictating changes of the traditional enterprise approach towards this element of BPM are constantly happening. For instance, customers are these days much more empowered, and due to the possibilities of the social networking, one bad customer review could badly reflect on the performance of each enterprise. Thus, more customer-centric approach is needed (Trkman et al., 2015, p. 250) with consideration about customer experience and various customer sensitivities. Microenterprises are, in that regard, even more so exposed to risks. They typically have small customer databases and thus, are obliged to carefully approach each and individual customer separately. Pareto analysis in Fin-Pro discovered there are 20% of customer

organizations, contributing around 80% of the total revenue in Fin-Pro. Customer satisfaction questionnaire indicated there were statistically significant differences in perceptions of users of Fin-Pro products and services coming from those 20% of customer organizations and the rest. Trkman et al. (2015, p. 250) proposed a move towards customer process management. This approach requires tight integration of enterprises processes and customer processes. One way of resolving this conundrum is through the introduction of the concept of **customer process owners** (RQ3). Embracing this approach really makes sense only if customer process knowledge (or **knowledge for, about and from the customer**) is found to be related to customer orientation, externally and not internally approached. This means, self-evaluations of customer orientation are somehow, not counting on the customer opinions, handicapped in their essence. For that purpose an analysis was performed in Fin-Pro confirming our suspicions **customer service quality strongly correlates to customer process knowledge**. Thus, we believe microenterprises should start to think about ways of improving customer experience, not only relying on approaches beneficial for the microenterprises (e.g. automated service responses, deploying self-assistance IT solutions etc.), but also relying on approaches that require some effort from them and at the beginning burden them (customer process owner). In that regard, Fin-Pro decided to exactly define the meaning of the concept of customer process owner for them, and appointed employees for that role without dubiously defined responsibilities. Interviews with both customers and Fin-Pro employees had confirmed the appropriateness of this approach. However, it would be interesting to see if the interviews results correspond well to an increased level of service quality customer perceptions. Since the implementation of BPM initiatives/projects is still happening in Fin-Pro, we are not in a position to perform such a study.

### **3.2 Limitations and future research**

The context of microenterprises within the BPM field is understudied. While our work is one of the few studies delving in that context, we acknowledge the limitations of the found results. First, since this work is based on only one case study, caution is needed in the interpretation of the offered answers, and empirical generalization is impossible. Second, our subject of case study was a microenterprise that had already underwent the difficult path of ISO certification. The output of this ISO certification was a clear identification of the organizations' processes and the establishment of some rudimentary performance measures. Moreover, Fin-Pro had already appointed process owners with clear definition about their roles. Thus, great amount of work in the enterprises was already performed before the introduction and adoption and implementation of the BPM initiatives/projects. Obviously, these were the main reasons why the company had good, respectable scores on both the BPO maturity models levels score and PPI levels score. Most probably, this was also the main reason why we could quickly complete the process analysis phase of the BPM Lifecycle and move forward with the redesign, implementation and monitoring and

controlling. Such favorable conditions could not be reasonably expected when embarking on a journey of BPM adoption and implementation in other microenterprises.

Some of the answers to the research questions were already substantially supported by the evidence from our case study, and for some of them we found encouraging initial indications. However, we recognize the limitations of our study in generating generic truth and once again, as it had been done multiple times in our study, point to the consequences of the validity of the contingency theory emphasizing there is no one best BPM adoption and implementation. On the contrary, we see our study as a corroboration of the propositions for contextual BPM adoption and implementation, and in that sense, we believe each organization should firstly scan its process situation and its environment contingency factors before starting adopting and implementing some best practices available in packages off the shelf.

For future research, we believe, finding more rigor approach of adopting and implementing BPM concepts in microenterprises is needed. Regarding that, one can try to exactly define what constitutes small, less formal and less rigid process changes, delineating them from the large, formal and rigid process changes, not adequate for BPM adoption and implementation in microenterprises. Further work on the operationalization of the process knowledge concept, and the customer process owner concept is likewise acknowledged to be necessary. Longitudinal effect study on the positive influence of the introduction of customer process owners is desirable as well. Producing aggregated data from research in more countries, including more microenterprises working in different economy segments, is certainly required for future empirical generalizations.

## **CONCLUSION**

BPM is a management discipline embracing process mindset and elevating business process as focal point of interest in managing business operations. Business processes are happening in every enterprise. Hence, microenterprises could also benefit from BPM adoption and implementation. However, due to their specific characteristics, originating in their size (number of employees), many BPM concepts found appropriate for larger enterprises are not applicable in the context of microenterprises. For instance, the bureaucratic BPM overhead, related to BPM units and chief process officers are unlikely to be present in microenterprises. So, different approach, with sensitivity to microenterprises time and resource scarcity, is needed.

Nevertheless, BPM principles should not be forgotten, since ignoring them, leads to reaping the negative consequences resulting from that action. The motivation for BPM adoption and implementation in microenterprises is the same, as in the larger enterprises. All enterprises are interested in performance improvements and agility.

Microenterprises are better suited for small, less formal and less rigid process changes. Their main advantage in the BPM adoption and implementation is their open culture, oriented toward learning. They also exhibit signs of emerging transactive memory system, where their employees know exactly “who knows what”, and use this system as an enabler of the execution of their business processes. In that regard, by using the transactive memory system, collaboration and teamwork is further on boosted in microenterprises.

One of the important success factors of BPM adoption and implementation is the existence of culture supportive of BPM, the so-called BPM culture. Customer orientation is an ingredient of that culture, where microenterprises, due to the socially-networked environment, should be really careful. Introducing customer process owner, on this subject, could be a desirable action.

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## **APPENDIXES**



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## Appendix A: BPO Maturity model (McCormack and Johnson, 2001) questionnaire

Table A1. BPO Maturity Model Questionnaire

Indicate to what extent you agree / disagree with the following statements regarding process orientation in your organization.		1 = completely disagree 5 = completely agree X = cannot judge					
<b>Process view</b>	The average employee views the business as a series of linked processes.	1	2	3	4	5	X
	Process terms such as <i>input</i> , <i>output</i> , <i>process</i> , and <i>process owners</i> are used in conversation in the organization.	1	2	3	4	5	X
	Processes within the organization are defined and documented using inputs and outputs to and from our customers.	1	2	3	4	5	X
	The business processes are sufficiently defined so that most people in the organization know how they work.	1	2	3	4	5	X
<b>Process jobs</b>	Jobs are usually multidimensional and not just simple tasks.	1	2	3	4	5	X
	Employees have sufficient decision-making powers in the workplace	1	2	3	4	5	X
	People are constantly learning new things on the job.	1	2	3	4	5	X
	Process ownership is defined and established.	1	2	3	4	5	X
	Process owners have the power to make decisions about business processes	1	2	3	4	5	X
	Process owners are responsible for the efficiency and effectiveness of the business processes	1	2	3	4	5	X
<b>Process Management and Measurement Systems</b>	Process performance is measured in the organization.	1	2	3	4	5	X
	Process measurements are defined.	1	2	3	4	5	X
	Resources are allocated based on process.	1	2	3	4	5	X
	Specific process performance goals are in place.	1	2	3	4	5	X
	Process outcomes are measured.	1	2	3	4	5	X

Source: K. McCormack, & W. Johnson, *Business Process Orientation: Gaining the E-Business Competitive Advantage*, 2001, pp. 159-185.

## Appendix B: Process Performance Index (Rummler-Brache, 2004) PPI questionnaire

Table B1. Process Performance Index Questionnaire

Indicate to what extent you agree / disagree with the following statements.	1 = completely disagree				
	5 = completely agree				
Business processes are directly linked to the organization's strategy and critical success factors.	1	2	3	4	5
Enterprise business processes are defined before launching improvement initiatives (e.g., Six Sigma).	1	2	3	4	5
Key players understand the role of process management in improving performance.	1	2	3	4	5
Improvement efforts are prioritized according to process "health" and linkage to current issues.	1	2	3	4	5
Process management teams use a standard approach to navigate process analysis and design.	1	2	3	4	5
Process performance is measured at the individual, process, and enterprise levels.	1	2	3	4	5
Process analysis and design efforts focus on delivering value to the customer.	1	2	3	4	5
Process owners monitor process metrics and continuous improvement efforts on a regular basis.	1	2	3	4	5
Process is the "master" and the information systems are the "servants".	1	2	3	4	5
People and cultural issues are effectively addressed when process changes are introduced.	1	2	3	4	5

Source: G. Rummler, & A. Brache, *Business Process Management in US Firms Today*, 2004, p. 2.

**Appendix C: Organizational culture assessment instrument OCAI (Cameron and Quinn, 2006) questionnaire**

Table C1. OCAI Questionnaire

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Instructions for completing the Organizational Culture Assessment Instrument (OCAI).

The purpose of the OCAI is to assess six key dimensions of organizational culture. In completing the instrument, you will be providing a picture of how your organization operates and the values that characterize it. No right or wrong answers exist for these questions, just as there is no right or wrong culture. Every organization will most likely produce a different set of responses. Therefore, be as accurate as you can in responding to the questions so that your resulting cultural diagnosis will be as precise as possible.

The OCAI consists of six questions. Each question has four alternatives. Divide 100 points among these four alternatives depending on the extent to which each alternative is similar to your own organization. Give a higher number of points to the alternative that is most similar to your organization. For example, in question one, if you think alternative A is very similar to your organization, alternative B and C are somewhat similar, and alternative D is hardly similar at all, you might give 55 points to A, 20 points to B and C, and five points to D. Just be sure your total equals 100 points for each question.

<b>1. Dominant Characteristics</b>		
A	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
B	The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.	
C	The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	
D	The organization is a very controlled and structured place. Formal procedures generally govern what people do.	
<b>2. Organizational Leadership</b>		
A	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	
B	The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.	

(table continues)

Table C1. OCAI Questionnaire (continued)

C	The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	
D	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	
<b>3. Management of Employees</b>		
A	The management style in the organization is characterized by teamwork, consensus, and participation.	
B	The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.	
C	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	
D	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	
<b>4. Organization Glue</b>		
A	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	
B	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	
C	The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	
D	The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	
<b>5. Strategic Emphases</b>		
A	The organization emphasizes human development. High trust, openness, and participation persist.	

(table continues)

Table C1. OCAI Questionnaire (continued)

B	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
C	The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	
D	The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	
<b>6. Criteria of Success</b>		
A	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	
B	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
C	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
D	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.	

Source: K. S. Cameron, & R. E. Quinn, *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*, 2011, pp. 26-28.

## **Appendix D: BPM culture (Schmiedel, vom Brocke, and Recker, 2014) instrument**

For the purposes of this study the **Culture Assessment Tool** was used, available on:

[http://www.bpm-culture.org/wordpress/?page\\_id=37](http://www.bpm-culture.org/wordpress/?page_id=37)

## Appendix E: Adapted SERVPERF (Kettinger and Lee, 1997) questionnaire

Table E1. Adapted SERVPERF Questionnaire

Indicate to what extent you agree / disagree with the following statements.	1 = entirely agree 7 = entirely disagree						
<b>Reliability</b>							
When Fin-Pro support promise to do something by a certain time, they do so	1	2	3	4	5	6	7
Fin-Pro support perform the service right the first time	1	2	3	4	5	6	7
Fin-Pro support provide their services at the time they promise to do so	1	2	3	4	5	6	7
<b>Responsiveness</b>							
Fin-Pro support give us prompt service	1	2	3	4	5	6	7
Fin-Pro support are always willing to help us	1	2	3	4	5	6	7
<b>Assurance</b>							
Fin-Pro support are never too busy to respond to our requests	1	2	3	4	5	6	7
The behavior Fin-Pro support instill confidence in us	1	2	3	4	5	6	7
Fin-Pro support are consistently courteous with us	1	2	3	4	5	6	7
Fin-Pro support have the knowledge to answer our questions	1	2	3	4	5	6	7
<b>Empathy</b>							
Fin-Pro support give users individual attention	1	2	3	4	5	6	7
Fin-Pro support have employees who give us personal attention	1	2	3	4	5	6	7
Fin-Pro support have our best interests at heart	1	2	3	4	5	6	7
Fin-Pro support understand our specific needs	1	2	3	4	5	6	7
<b>Process knowledge</b>							
Fin-Pro support have knowledge about the processes that are performed in our laboratory	1	2	3	4	5	6	7
It is easy to communicate about matters related to the execution of our processes with Fin-Pro support	1	2	3	4	5	6	7
It seems to me useful / helpful to consult with Fin-Pro support on improvements to our processes	1	2	3	4	5	6	7

Adapted from: W.J. Kettinger, & C. C. Lee, *Pragmatic Perspectives on the Measurement of Information Systems Service Quality*, 1997, p. 228.