Evolving Paradigms in Business Process Management: A Decade of Transformation in Serbia, 2012-2022

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Abstract: This paper examines the transformative shifts in Business Process Management (BPM) practices in Serbia over a decade, from 2012 to 2022. Research was conducted through surveys carried out in 2012 and 2022, and utilizing a comparative analysis, this study documents a significant evolution towards higher levels of BPM maturity. Initially characterized by sporadic and isolated projects, Serbian companies have increasingly embraced comprehensive, organization-wide BPM initiatives. The findings highlight a pronounced shift towards efficiency and cost-effectiveness, underpinning broader business transformation efforts. This study also reveals an enhanced recognition and adaptation to emerging challenges that differ notably from those encountered a decade ago. The findings offer valuable insights into the dynamic nature of BPM in Serbia, providing a foundation for understanding its current challenges and anticipating future developments in the field. The limitation of this study lies in the changes that occurred over 10 years, including economic changes, technological advancements, and the impact of COVID-19, which could have influenced the research results. This paper not only maps out a decade of BPM evolution in Serbia but also highlights the need for ongoing research into the influences shaping business processes in the region.

Keywords: Business process management, process maturity, success

Paper type: Research paper

1. Introduction

Organizations constantly face a competitive environment, compelling them to reassess their business models and core processes. It is clear that all organizations consist of business processes, even if they have not embraced a process-oriented perspective. Consequently, businesses worldwide are focusing more on process management and process automation to enhance organizational efficiency and effectiveness. This shift has led to business process management being increasingly recognized as a critical factor for business success.

Business process management (BPM) is recognized as central to creating sustainable competitive advantage, with empirical research indicating a positive correlation between BPM and business success (McCormack et al., 2009, Trkman, 2010, Škrinjar & Trkman, 2013).

In the late 1980s and early 1990s, many countries of the former Eastern Bloc began transitioning from centrally planned economies to market-driven systems, a long-term process that defines them as transition economies (Roztocki and Weistroffer 2008, 2015). The new market conditions in transition economies have led enterprises to adopt management concepts, such as BPM, that have been proven effective in developed countries (Gabryelczyk, et al, 2016). There are few papers related to BPM practice in transitional countries (Gabryelczyk, et al, 2016, Stojanovic et al., 2017). In 2012, Stojanović et al. (2012) did pioneering research aimed at evaluating the state of BPM in the industry of Serbia, then a transitional country. Back then, BPM was a fairly new concept in Serbia, with limited awareness among companies. On average, process maturity was low, but the interest in BPM transformation was nevertheless there. Ten years later, we opted for similar research to try and see if and how BPM landscape has evolved over a decade. As longitudinal BPM studies are rare in general (Maris, Ongena, & Ravesteijn, 2023), and especially in developing economies, it was interesting to investigate BPM evolution in Serbia, still a transitional country. The paper presents the results of the empirical research on the transformative shifts in Business Process Management (BPM) practices in Serbia over a decade.

This paper seeks to explore the development of BPM practices in Serbian companies. The structure of the paper is as follows: Section 2 provides the theoretical foundation for the study; Section 3 outlines the research methodology; Section 4 reports the findings; and Section 5 offers a discussion and concludes the paper.

2. Theoretical background

Today, business processes are the cornerstone around which organizations structure their operations, measure performance, and build their competitiveness. BPM refers to activities performed by organizations to design, implement, operate, manage, and improve their business processes by using a combination of methods, techniques, and tools (Bekele & Zhu,2011). It is a comprehensive management strategy that enhances business effectiveness and efficiency while emphasizing innovation, adaptability, and technological integration. BPM is a common and established management concept that helps to increase organization effectiveness, efficiency, and flexibility and frequently is a starting point and foundation for implementing many following improvement projects. There are many definitions of BPM, and one of the important elements is how companies in transition economies understand BPM (Stojanovic et al., 2017).

Considering the influence BPM implementation might have on gaining competitive advantage, BPM stands out as a viable solution for improving company performance in transition economies (Stojanovic et al., 2017). Gabryelczyk, et al, 2016 published research on BPM in transition economies with highly limited geographical scope, covering only nine transition economies, with just one paper focusing on Bosnia and Herzegovina outside the European Union, indicating that research on BPM in non-EU transition economies is virtually non-existent. In their article, the highest amount of research has been conducted on an organizational level, and only one study has been done on the country level. Clearly, a valuable research opportunity lies in expanding the investigation to include both double transition economies and those that are not part of the European Union. Thus, to be successful, organizations have to adapt their behavior to the specific circumstances in transition economies (Gabryelczyk & Roztocki, 2018).

As corporate managers strive to enhance BPM performance to boost effectiveness and efficiency, they often struggle to identify focal points for improvement, creating a rising demand for answers

(Janssen & Ravesteyn, 2015). Consequently, every organization can implement a process approach to evaluate its level of process orientation in relation to business performance. Realising the benefits of BPM, there is a need for organizations to determine the current and future stage of their BPM development with the use of a Business Process Management Maturity Model (Dharmawan et al., 2019). Recently, process maturity has emerged as a central topic in business process management literature, presented as a key pathway to business improvement and success (Kahrović & Djordjevic, 2019). As BPM becomes increasingly important and widely adopted, it is crucial to identify the stages of BPM development within organizations, leading to the suggestion of implementing the Business Process Maturity Model to assess their 'BPM maturity' and evaluate the extent to which the associated benefits are being realized or can be further enhanced. This level of process orientation is typically illustrated through a process maturity model (Škrinjar, Bosilj-Vukšić & Indihar-Štemberger, 2008).

They act as reference models for the stages organizations progress through as they transition from low to high maturity in their process approach. These business process maturity models are founded on concepts developed by researchers over the last thirty years, suggesting that a process follows a lifecycle that is evaluated by how well the processes are explicitly defined, managed, measured, and controlled (Škrinjar, Bosilj-Vukšić & Indihar-Štemberger, 2008).

Most maturity models are based on the Capability Maturity Model developed by the Software Engineering Institute at Carnegie Mellon University. Initially designed to evaluate the maturity of software development processes, this model distinguishes between immature and mature software organizations (Kahrović & Djordjevic, 2019). The success of CMMI inspired the development of several maturity models in other domains, including BPM (Tarhan, Turetken & Reijers, 2016).

For this research, the CMMI model was used for the evaluation of process maturity. A graphic display of the CMMI model is given in Figure 1.



Figure 1: CMMI process maturity model (Paulk et. al, 1993)

Inconsistent terminology, combined with the absence of empirical measurement tools, has led to a lack of standardized constructs and variables within the BPM domain. To address this issue, the researchers are using a previously developed BPM maturity model as a common platform to study the progression of BPM in various organizations (deBruin, 2007). This paper is thus driven by our overarching goal to explore the evolution of BPM in organizations in Serbia as a small transition economy.

3. Research methodology

To analyze potential differences between 2012 and 2022 year in companies in Serbia a survey instrument was developed. Questions about drivers and challenges, process initiatives, and process maturity were adapted from a BP Trends survey (Wolf & Harmon, 2012). Questions related to process improvement practices were sourced from a Process Excellence Network survey (Process Excellence Network, 2012). Additionally, the authors included questions regarding the respondents' industry and company ownership. A similar instrument was used in 2012 and 2022 with some additional questions. The questionnaire included questions divided into three groups: (i) general questions about the company, respondents and understanding BPM, (ii) questions about process maturity and (iii) questions referring to BPI practice.

The Serbian population consisted of companies that had implemented ISO standards to ensure that respondents possessed at least some experience with BPM. The questionnaire was distributed by e-mail. The population in 2012 were 300 companies and we received 41 valid responses, so the response rate was 13.66 per cent. In 2022, the population consisted of 500 companies, and we received 61 valid responses, and the response rate was 12,2 per cent. The questionnaire was distributed through LinkedIn. The surveys were anonymous, and participation was entirely voluntary.

After participants completed the questionnaires, the results were analyzed with SPSS, and graphical materials were created using Microsoft Excel.

4. Results

Figure 1. shows the percentage of respondents' business functions in 2012, and 2022. Almost half of the respondents were business function/department managers in 2012 and 2022, but in 2022 third of the respondents were process specialists or analysts, while in 2012 none of the respondents were process specialists or analysts.



Figure 1. Respondents' business function [%]

Figure 2. shows companies size in 2012 and 2022, and approximately 60% of the respondents were from large companies in both years.



Figure 2. Company size [%]

Companies' orientation in both years is presented in Figure 3. In 2012 almost half of the companies were service-oriented, while in 2022 there are almost equal number of manufacturing and service-oriented companies.





Figure 4. shows companies ownership in 2012 and 2022, and in 2012, 56% of the companies were with domestic ownership, while in 2022, 49% of the companies were with foreign ownership.



Figure 4. Company ownership [%]

Respondents were asked to evaluate the current situation of business process improvement in their companies in both years and answers are presented in Figure 5. None of the respondents didn't answers that the Program had been interrupted in both years. In 2012, 41% of the respondents said that BPI programs are part of their everyday business, and 32% that Effort and results are at their peak, while in 2022, 69% of the respondents said that BPI programs are part of their everyday business. It is surprising that 8% of the respondents in 2022 said they have No interest in implementing BPI.





In this paper, process maturity is assessed according to the CMMI model. Respondents evaluate process maturity in their companies and results are given in Figure 6. In 2012, 34% of the companies were at level 2, 27% at level 3, and 12% at level 5, while in 2022, 28% of the companies were at level 2 and level 3, while 23% of the companies were on level 5. Also in 2012, 27% of the companies were at the first level, and in 2022, 18% of the companies were at the first level.



Figure 6. Process maturity [%]

Participants were requested to mark the main driver they encountered during the spreading BPM initiatives (Figure 7) and multiple answers were allowed.



Figure 7. Drivers for process change [%]

In 2012, a third of the respondents marked that their drivers were the Need for improving existing/creating new products/services to remain competitive and the Need for improving customer satisfaction to remain competitive, while none of the respondents marked Adaptation to new regulations, Certification, Business transformation, Improvement of coordination and control of business operations, Need for improving productivity/efficiency and Need for cost savings - reducing expenses/defects. In 2022, 19% of the respondents marked Need for cost savings - reducing expenses/defects, 15% Improvement of coordination and control of business operations, and 12% Need for improving customer satisfaction to remain competitive, while there are new drivers like Adaptation to new regulations, Certification, Business transformation, Business transformation, Increase in the market share and revenue.

Respondents we asked do they have a formal group or BPM centre of excellence, and if they have been in which part of the business system is it located in their company.



Figure 8. BPM formal group [%]

In 2012 and 2022 most of the respondent said the formal BPM group is within Executive management or Quality, while in 2022 Production and operations and Development and strategy are mentioned as part of the business system in which are located BPM groups.

It was interesting to analyse which initiatives regarding business processes companies have undertaken so far and what they plan to implement, and the results are given in Table 1.

Business process initiatives	Undertaken so far		Plan to	
	2012	2022	2012	2022
Business process architecture development	41	49	0	23
Business process measurement system development	59	62	12	26
Modeling/documenting processes	58	75	20	18
Business Process management	56	72	27	25
Process managers training for process analysis/redesign (non Six sigma)	27	25	51	39
Core processes redesign/reengineering	17	25	51	39
Redesign of processes with reference models (SCOR, ITIL)	0	8	0	18
Lean improvement projects	12	43	27	20
Six Sigma improvement projects	5	26	0	21
Lean Six sigma improvement projects	4	28	0	23

Business process initiatives	Undertaken so far [%]		Plan to undertake [%]	
	2012	2022	2012	2022
Continuous process improvement projects/KAIZEN	20	38	0	18
Process automation projects/ERP	34	52	20	21
Process excellence concepts (Baldrige, EFQM, APQC)	0	16	0	15
Coordination of business process change on the company level	56	41	0	25
Business process outsourcing	0	44	5	15

Above of 50% of the companies in 2012 worked on Business process measurement system development, Modeling/documenting processes, Business Process Management and Coordination of business process change on the company level, and in 2022 similar results with a higher percentage above 60%. In 2022 above 50% of the companies also worked on Process automation projects/ERP. When it comes to the initiatives that companies plan to work on, the results indicate that in 2012 half of the companies planned to work on Process managers training and Core processes redesign/reengineering, and in 2022 focus is the same, but unlike in 2012, companies plan to focus more on Business process measurement system development, Business Process Management, Coordination of business process change on the company level and Lean Six Sigma improvement projects. There is also an observed increase in the percentage of companies that will work on Redesign of processes with reference models (SCOR, ITIL...), Six Sigma improvement projects, Process excellence concepts (Baldrige, EFQM, APQC) and Business process outsourcing.

When it comes to the challenges and resistance companies have faced while attempting to expand BPM initiatives, the results are depicted in Figure 9, and respondents had the option to mark more than one answer.



Figure 9. BPM challenges [%]

In 2012, third of the respondents said that they had No resistance 35%, or Management did not want to invest at this time 22%, or We have multiple process change projects competing for resources 22%, while in 2022 main challenges were Senior management is not interested or is focused on other activities with 18%, We lack the necessary skills with 17%, and There are obstacles in implementing new technology with 15%.

5. Discussion and conclusion

Business process management (BPM) is emerging as an important management practice, providing organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalization and constantly changing business conditions (deBruin, 2007). Van Looy and Van den Bergh (2017) argue that both service and manufacturing organizations benefit from BPM adoption, although this adoption is found to be slower by service companies. Our results show a different perspective, where service companies were early adopters of BPM practices in Serbia, only to be caught up by manufacturing companies in later years. Ongena & Ravesteyn (2020) presented empirical evidence that there are certain differences between manufacturing and service companies concerning process improvement and that the improvement of existing processes might be more beneficial for manufacturing organizations. This difference can be attributed to the existence of several specific process improvement approaches that are nearer to manufacturing (e.g. Lean and Six Sigma), while service companies do not rely so much on established process improvement methodologies (Weitlaner & Kohlbacher, 2015).

In general, this study of BPM practices in companies in Serbia reveals significant progress in business process maturity from 2012 to 2022. While respondents themselves claim (possibly subjectively) that the process maturity is on average higher in their companies, there are also notable changes in various aspects of BPM that indicate this change. One of the most striking outcomes of the study is the increase in the number of roles related to BPM. For example, none of the respondents from 2012 were process specialists/process analysts, which suggests that BPM was often an ancillary function, typically managed by business function/department managers. In ten years, the landscape has somewhat changed, with results showing that many companies have established dedicated BPM roles. This shift indicates a deeper institutionalization of BPM within organizations, reflecting a more sophisticated and structured approach to managing business processes. The increase in BPM roles can be attributed to the growing recognition of the value that effective process management brings to an organization. Through specialized roles, companies can ensure that BPM initiatives are consistently prioritized and that there is accountability for process improvement efforts.

Another key finding is the shift in focus from effectiveness towards efficiency. In 2012 focus was on penetrating the market (through product development and greater customer satisfaction), while ten years later companies tried to maintain their position through productivity improvements and cost-cutting (Stojanović et al., 2022). While this shift can certainly be attributed to greater business process maturity, other factors can be linked to this change of focus can be linked to, such as COVID-19 pandemic which has forced companies to find ways to operate more efficiently. In addition, advancements in technology (e.g. automation, data analytics, Industry 4.0, AI, etc.) have provided new opportunities for process optimization, waste reduction, and the improvement of overall performance. However, it is important to note that the technology itself, while still present as one of the drivers, and important in the overall BPM transformation, is not the main focus of the BPM transformation (Lizano-Mora et al., 2021). Regardless of the need, the results show that companies turn to BPM initiatives as a possible solution for attaining higher levels of efficiency.

BPM is usually a top business priority as it is used systematically to improve a company's business process. However, the development of adequate business process capability often comes with a set of challenges that companies face (Alotaibi & Liu, 2017). The results of our study show an interesting development of the perception of BPM transformation challenges over years. While the overall maturity of BPM practices has increased, so has the awareness of the challenges and reported with BPM transformation. Early on, many respondents identified few challenges and reported minimal resistance to BPM initiatives. This optimism was likely due to a lack of experience and understanding of the complexities involved in BPM transformations. Ten years later, however, there is a greater recognition of companies' obstacles when implementing BPM initiatives. The increased awareness of challenges can be seen as a positive development. It suggests that companies are becoming more realistic and better prepared to handle the difficulties associated with BPM transformation. Common challenges identified in the study include resistance to change, lack of management support, and the lack of resources needed to support BPM transformation. Acknowledging these challenges is crucial in developing more robust and resilient BPM initiatives.

The findings of this research have several managerial implications. First, BPM should be recognized by managers as a strategic priority since it has a potential to increase competitiveness and sustainability, especially in volatile business environment of today. Second, BPM should be

institutionalized through the development of specialized roles, such as business process specialists, which would also help in dedicating resources for future BPM initiatives. Third, potential challenges should be addressed proactively, so adequate strategies can be developed that would mitigate negative influences of these challenges. Finally, managers should track the progress of BPM transformation, not only through process maturity but also by assessing the impact BPM initiatives have on overall business and adjusting strategies promptly to ensure that BPM initiatives have the desired impact.

This paper comes with several significant limitations. First is respondent bias, as a consequence of self-reported data from the respondents. Second is the geographic focus on Serbia, which limits the generalizability of the results. This could be mitigated through future comparative studies across varied countries or regions which could add political, cultural, economic or legal contexts that could affect process maturity. Third is the industry scope, as this study does not delve into specificities of manufacturing and service sectors that could affect process maturity. Future studies could investigate contextual factors related to the type of industry to uncover unique insights into the service and manufacturing sectors. Finally, there's a temporal constraint, as this study does not address recent developments that might have emerged after 2022.

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