

Brzeziński, Stanisław; Bitkowska, Agnieszka

Article

Integrated business process management in contemporary enterprises: A challenge or a necessity?

Contemporary Economics

Provided in Cooperation with:

VIZJA University, Warsaw

Suggested Citation: Brzeziński, Stanisław; Bitkowska, Agnieszka (2022) : Integrated business process management in contemporary enterprises: A challenge or a necessity?, Contemporary Economics, ISSN 2300-8814, University of Economics and Human Sciences in Warsaw, Warsaw, Vol. 16, Iss. 4, pp. 374-386,
<https://doi.org/10.5709/ce.1897-9254.488>

This Version is available at:

<https://hdl.handle.net/10419/297611>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Primary submission: 29.05.2022 | Final acceptance: 08.11.2022

Integrated Business Process Management in Contemporary Enterprises - a Challenge or a Necessity?

Stanisław Brzeziński¹ and Agnieszka Bitkowska²

ABSTRACT

The progressing globalization processes and new technological solutions require the organization to constantly adapt to changes taking place in the environment. More and more companies implement process management, both at the strategic and operational levels, considering the project and knowledge perspective. The article aims to show the usefulness of building the concept of integrated process management, based on the triad: processes, projects, knowledge in modern enterprises. The following research methods and techniques were used in the article: analysis of the literature on the subject, comparative analysis of the results of research carried out in the world, and the effects of own research carried out in Poland. The research has shown that usefulness of integrated business process management is ensured by the coordination of processes and links with strategic and operational assumptions, synergies of processes, projects, and knowledge. Such a solution can help the organization and transformation processes in the effective implementation of the strategy.

KEY WORDS:

business process management, projects, knowledge, integrated business process management.

JEL Classification: L22, O31, M19.

¹University of Economics and Human Sciences in Warsaw, Poland

²Warsaw University of Technology, Faculty of Management, Poland

1. Introduction

The development of business process management is a response to the growing turbulence of the environment, personalization of customer needs and expectations, and the growing importance of intangible assets in creating a competitive advantage (Badakhshan et al., 2019; Brzeziński, 2020, 2021; Detyna & Detyna, 2016; Dumas et al., 2018; Grajewski, 2012; Grisold et al., 2021; Staniewski & Awruk, 2021, 2019, 2018; Ubaid & Dweiri, 2020;

Weske, 2019). The dynamics and enormous intensity of these changes are determined mainly by current IT, financial, and technological development, which is the basis for further transformations of individual countries (Mat Jusoh et al., 2022; Mysaka & Derun, 2021; Sierpińska-Sawicz & Sierpińska, 2021; Żebrowska-Suchodolska & Karpio, 2022). The technological and IT development has led to the systematic rapprochement of societies on all continents and to increasing cooperation between enterprises (Bojar, 2020; Brzeziński, 2020; Kim & Upneja,

Correspondence concerning this article should be addressed to:

Stanisław Brzeziński, University of Economics and Human Sciences in Warsaw, Poland. E-mail: s.brzezinski@vizja.pl

2021; Lee & Suh, 2022; Liu & Li, 2021; Martínez et al., 2022; Skare & Soriano, 2021; Štemberger et al., 2009;). The development of digital transformation, especially 4G technology and currently 5G, and collecting data in a computing cloud causes enterprises to analyze business processes using machine learning algorithms. Artificial intelligence competes with classic solutions in the field of process optimization (Staniewski & Nurudeen, 2019; Szopiński & Staniewski, 2017; Wodecki, 2019, 2020;). Such conditions of a dynamically changing environment require introducing new solutions through a project approach (Trocki, 2018; Wyrzebski, 2014, 2019). Concerning economic processes, projects to implement the strategy assumptions to the process model of the enterprise are used (Nowosielski, 2018). The project approach is also used to implement process management and improve processes, introducing new innovative solutions, including digital innovations (Gross et al., 2020; Mendling et al., 2020; Sliż, 2021;). Under these conditions, an appropriate approach to knowledge management, its use or dissemination is applicable (Bolisani & Bratianu, 2018; Brzeziński, 2015; Glinkowska, 2017; Staniewski, 2008, 2016a, 2016b). Hence, it is justified for process management to be an integrator of all activities carried out in the enterprise, involving management concepts and methods based on the process approach (Nowosielski, 2018). The insufficient publications in the Polish literature on the issues of integrated process management indicate the need to consider both theoretical and practical. As emphasized by S. Nowosielski (2018), in practice, more than in theory, attempts are made to comprehensively approach project and process management in introducing organizational changes.

The discussed issues of business process management in the context of the emerging new challenges of the knowledge-based economy in relation to modern enterprises are worth scientific exploration and require a new look at the methods and tools used in enterprises from the perspective of integrated process management. The issues in dynamically changing environmental conditions are insufficiently explored and presented in foreign and Polish publications. There is a lack of both theoretical and empirical scientific studies on integrated business

process management in response to the changing requirements of the environment (Bandara et al., 2011; Jeston & Nelis, 2014; Malinova & Mendling, 2018).

The main research question is formulated as: how do contemporary organizations implement integrated business process management? The article aims to identify and indicate usefulness of the concept of integrated process management based on empirical research carried out in Poland compared to selected research results in the world. The paper presents the results of a survey conducted in 2020 on a sample of 120 enterprises. The considerations in the article and the effects of theoretical and empirical works presented in the article may constitute guidelines for the managerial staff in building integrated process management. The issues presented in the report have both cognitive and practical value.

2. Theoretical Background

2.1. A Triad of Processes-Projects-Knowledge

Recent changes in the environment take place dynamically and include, among others, the fourth technological revolution (Industry 4.0), the development of technologies in the field of artificial intelligence (AI), or process automation (Robotic Process Automation - RPA), which determines the functioning of modern enterprises (Sliż, 2019; Swanson, 2019). Factors influencing the evolution of process management also include strong customer-oriented needs and expectations, their impact on the course of processes, process variability and configuration depending on the dynamic environment, advanced technologies used to implement and improve processes (Antonucci & Goeke, 2011; Cruz-Cárdenas et al., 2019; Di Ciccio et al., 2019 Jędrzejczyk & Brzeziński, 2021; Malinova & Mendling, 2018; Rosemann & Vom Brocke, 2015). Introducing these solutions requires introducing changes, which is most often implemented in accordance with the design approach, based on appropriate knowledge resources and modern IT tools such as Business Intelligence, Cloud Computing, or Internet of Things (El Ghalbzouri & El Bouhdidi, 2022; Mohamad et al., 2022; Paschek et al., 2018).

According to M. Trocki, projects are no longer just sporadic, single events in the organization's activities but are a permanent component that occurs continuously in large numbers as the so-called project portfolios (Trocki, 2018). Integrated process management that combines (integrating) processes, projects, and knowledge, bringing synergistic effects from the point of view of the functioning of modern enterprises (Grajewski, 2012; Nowosielski, 2018; Trocki, 2018), becomes a reasonable solution from the point of view of strategic and operational goals and assumptions (Bandara et al., 2011; Bitkowska, 2020; Jeston & Nelis, 2014; Malinova & Mendling, 2018). Knowledge is the effective use of information in action (Drucker, 1999) There are many divisions of knowledge, one of the most common being explicit knowledge and tacit knowledge. (Bolisani & Bratianu, 2018). Projects are complex and unique undertakings, namely, organized sequences of human activities aimed at achieving the intended goal, extended significantly in time, with a distinguished beginning and end, requiring the involvement of significant, but limited material, human and financial resources, implemented as a team by highly qualified contractors in various fields, associated with high technical, organizational and economic risk and requiring the use of special preparation and implementation methods (Trocki, 2018).

The synergy effect resulting from the proper management (coherence) of the triad - based on a personalistic approach with a focus on the products or services provided and the new role of the customer, who, apart from being the recipient of the organization's products or services, also actively participates in creating its processes - is the foundation which directs the company to create integrated business process management (Bitkowska, 2019). When reflecting on the process-project-knowledge triad, one should grasp the essence of the relationship between them. It is worth paying attention to the characteristic aspects of each of the concepts below:

- knowledge - is a key resource and process of the enterprise, it may be changed under the influence of ongoing processes or as a result of

projects,

- process - the dynamic aspect that describes the action, the way of transformation; needs resources to achieve a specific result, including knowledge resources,
- project - an element of novelty that explains the emergence of a particular new reality, new solutions.

2.2. The Essence and Assumptions of Integrated Business Process Management

Integrated business process management, based on the coherence (complementarity) of the process-project-knowledge triad and the synergy between them, is implemented through a systematic combination, an adaptation of concepts and methods based on the process approach, including dynamic (agile) and comprehensive impact on processes taking place in the organization, in line with strategic assumptions to build value for the client and other stakeholders (Bitkowska, 2019; Chountalas, & Lagodimos, 2019; Reijers, 2021). Integrated business process management is based on classic process management, ensuring higher efficiency and adaptation to changing environmental conditions (Bitkowska, 2019).

When analyzing the concept of integrated process management, the strategic as well as operational levels should be considered. Two levels can be distinguished: internal integration and external integration (Table 1). Internal integration includes vertical integration (combining the strategic and operational levels using the balanced scorecard method) and horizontal integration (at the level of processes, by combining their fragments that are dispersed in various organizational units managed by process owners). External integration means conscious and coordinated connection to process management concepts and methods based on a process approach that naturally cooperates with process management, such as project management or knowledge management (Bitkowska, 2019). In practice, there was a need for coordination and integration activities that would allow for the synergy effect to be achieved through mutual cooperation. The levels of integrated process management are presented in Table 1.

2.3. Building Integrated Business Process Management

In the approach to building integrated process management, the following stages of transformation from classical to integrated process management were assumed, including four successive stages: internal integration, harmonization and standardization, coordination, and external integration (Bitkowska, 2019) (Table 2). Integrated business process management should be considered multidimensionally through basic levels, which include: structure and culture, technologies and tools, strategic fit, order, methods, and human resources (Bitkowska, 2019; Gudelj et al., 2021; Helbin & van Looy, 2017). The key issue concerns

the construction of mechanisms and tools conducive to strengthening the integration of process management with other concepts based on the process approach, namely, hard solutions. It should be emphasized that an important role is played by the soft aspects, that is, culture and employees, constituting the capital of the organization, which are the carrier of organizational knowledge (Hrabal et al., 2021; Schmiedel, et al., 2020;). Hence, the key role of employees should be aimed at meeting the needs and monitoring of external and internal customer satisfaction and generating improvements that increase the share of intelligent processes in the organization's process architecture (Dumas et al., 2013; Schmiedel et al., 2019).

Table 1
Phases in Integrated Business Process Management

Types of integration	Characteristics
Vertical integration (strategic and operational)	Linking the objectives of the processes with the strategic objectives of selected concepts, the use of a strategic scorecard.
Horizontal integration (strategic)	Consolidated strategy. Coordinated strategies for selected management systems with the dominant process management system. Building process architecture.
Horizontal integration (operational)	Shared human, financial, material and knowledge resources used in the process management life cycle in connection with other system concepts.

Source: Bitkowska 2019, p. 230

Table 2
Stages in Integrated Business Process Management

Types of integration	Characteristics
First stage Internal integration, classic business process management	Coordinated management concepts (project management, knowledge management) operate separately in the same organization independently of process management.
Second stage Harmonization and standardization	Identification of common elements of individual management concepts (project management and knowledge management) in terms of technology and resources is followed.
Third stage Coordination	The identified common elements characteristic of the concept of knowledge management and project management are properly coordinated in terms of process management.
Fourth stage External integration full integrated business process management	There is an integrated management system at the strategic and operational level that includes common elements from all selected knowledge management and project management systems.

Source: a study based on Bitkowska 2019, p. 220

3. Building an Integrated Business Process Management - The Results of Empirical Research in the World and in Poland

3.1. Research Method

Business process management is of interest to both academics and practitioners. The number of research studies and areas of analysis in the discussed issue is increasing, while there is no comprehensive research in the field of integrated business process management.

The conducted analysis of empirical research includes the results of research carried out cyclically in the world as part of BPM Trends and own research. The research in the world was carried out in 2020 on a sample of 129 enterprises, while the research in Poland was carried out in 2021 and covered 120 enterprises. The first part presents a comparative analysis of a study conducted abroad and in Poland. On the other hand, the second part presents the results of own research, pointing to the benefits and barriers in building integrated process management in enterprises operating in Poland.

The analysis of the current state of knowledge and the issues of process management allowed us to identify the methods, tools, and approaches used in enterprises in response to contemporary challenges of the environment. The main goal was to assess the current state of implementation of the method of transformation towards integrated process management in enterprises (the triad of processes-project-knowledge). The implementation of this intention was to fill the existing knowledge gap in this area and to present empirical

material allowing to assess the validity of the solutions presented in this article. The main research was carried out with the use of a questionnaire, which was addressed to specialists in the field of process management from various industries, such as, production, logistics, energy, banking, education, public administration, and enterprises of different sizes: small, medium and large. The survey instrument was constructed based on the literature review. The research was conducted in the first quarter of 2020 in Poland among 121 process-oriented enterprises.

The obtained research results were analyzed considering selected categories appearing in the record, such as the size of the enterprise or the scope of activity. The presented conclusions will constitute guidelines for the proposition of further research directions and will give the trends taking place in process-oriented enterprises. The research goals adopted in work required the selection of a research method and the construction of a research tool allowing for the collection of empirical material. The research used the method of a diagnostic survey based on the questionnaire technique, where the research tool was a questionnaire developed for this study.

3.2. Research Method

The surveyed companies, both in the world and in Poland, undertook many initiatives in business process management related to adapting to the changing environmental conditions (Table 3). The solutions concerned the introduction of new technological solutions supporting the process approach. The respondents indicated the need to use cloud computing solutions (47.00% in the world, 20.00% in Poland),

Table 3
Technological Solutions Used in the Surveyed Enterprises

Description	Research in the world	Research in Poland
Solutions in the field of automation and robotization of processes (RPA)	38.00%	15.00%
Artificial Intelligence (AI) solutions	20.00%	4.00%
Cloud Computing (CC) solutions	47.00%	20.00%

Source: Harmon & Garcia (2020); results of own research conducted in 2020

or Robotic Process Automation (RPA) (38.00% in the world, 15.00% in Poland), artificial intelligence (20, 00% in the world, 4.00% in Poland). The research results indicate that enterprises invest in developing the latest technological solutions enabling the more efficient implementation of processes and processed data. In Polish enterprises, the implementation of these solutions is only just beginning.

Changes taking place in the environment determine the initiatives implemented by process-oriented enterprises (Table 4). Enterprises in the world mainly implemented projects in the field of undertaking projects related to the reorganization of processes, development of process architecture, coordination of changes in business processes, and projects in the field of process automation. When analyzing the dynamism in the presented research concerning the process architecture, it should be emphasized that the fundamental processes underwent the most significant changes. In contrast, the auxiliary and management processes functioned without significant deviations. In relation to Polish enterprises, developing a system for measuring the efficiency of

business processes and training process managers was particularly important. Initiatives to coordinate changes in processes, improvement of process architecture, and undertaking serious projects and process automation was important.

The research results in the world and Poland indicate an increase in the design approach in process-oriented organizations, which results from the requirements related to adaptation to the changes in the environment (Table 5). It is essential to use the knowledge needed for implementation and initiate new projects. 56.00% in the world, 43.00% of respondents in Poland stated that their companies are involved in the implementation of many projects (project portfolio), 29% - that in a limited number of them, and 23% - that their management has undertaken significant activities related to the involvement of newly established project initiatives. Research respondents around the world emphasize that their involvement in the implementation of larger projects is growing because more than 50 projects are mainly carried out by large companies from North America and Europe.

Table 4
Implementation of Process Initiatives in the Surveyed Enterprises

Description	Research in the world	Research in Poland
Development of business process architecture	39.00%	26.00%
Development of a system for measuring the performance of business processes	16.00%	34.43%
Coordination of changes in business processes	28.00%	29.51%
Training of process managers	24.00%	35.25%
Balanced Scorecard	13.00%	8.20%
Major process redesign projects	40.00%	13.11%
Projects including SCOR, ITIL	9.00%	6.56%
Projects improving Six Sigma processes	12.00%	4.92%
Process automation projects	26.00%	24.59%
Process analysis and training (without Six Sigma)	22.00%	20.49%
Training in modeling and designing Lean Six Sigma processes	6.00%	10.66%

Source: Harmon & Garcia (2020); results of own research conducted in 2020

Table 5*Process Initiatives Implemented in the Surveyed Companies*

Description	Research in the world	Research in Poland
Number of implemented projects over 50	13.00%	11.00%
The number of implemented projects ranged from 11 to 49	23.00%	21.00%
Number of implemented projects from 1 to 10	56.00%	43.00%
There are no ongoing projects	9.00%	8.00%

Source: Harmon & Garcia (2020); results of own research conducted in 2020

Table 6*Organization of the Approach to Project Management in the Surveyed Enterprises*

Description	Research in the world	Research in Poland
Managers initiate and manage projects	26.00%	34.00%
Department managers initiate and manage projects	24.00%	28.00%
Process office, design office initiates and manages projects	15.00%	13.00%
Top management initiates and manages projects	13.00%	18.00%

Source: Harmon & Garcia (2020); results of own research conducted in 2020

The organizational aspect of project management is also important because managers mostly do the initiation and implementation of projects (26.00% in the world, 34.00% in Poland, department managers (24.00% in the world, 28.00% in Poland), top management (13.00% in the world, 19.00% in Poland) or a process management office (13.00% in the world, 18.00% in Poland) (Table 6). The most important role in the approach to project management, both in Poland and in the world, is played by department managers and managers. Project initiatives were observed through the process or project offices.

The presented research results show that process-oriented enterprises undertake many activities to improve their activities through the use of process management and the implementation of an increasing number of projects, including the implementation of technological solutions. In this situation, knowledge resources are also necessary to implement projects effectively. It is also essential to define the process architecture and its improvement through design activities, based on the knowledge of employees, customers, and, above all, changes in the environment. The model's usefulness has been confirmed by its application for

modern enterprises through internal adaptation to dynamic changes taking place on the market, internal ordering, and building relationships with stakeholders.

3.3. Prerequisites for Building Integrated Business Process Management - Results of Own Research in Poland

A reasonable solution is the implementation of integration activities in an evolutionary manner using the stages of transformation of business process management towards process management. Such an approach will allow for smooth changes, although the path to consistency is lengthy and requires consistency and persistence for management and employees. In our study carried out in Poland in 2020, respondents defined the level of integration of the concept of process, project, and knowledge management in the form of successive stages of integrated process management. Stage 1 - Coordinated management concepts operate separately in the same organization (22.13%), stage 2 - Common elements of individual management concepts are identified (e.g., process management and knowledge management in terms of technology, resources) (31.97%), stage 3 - Identified common el-

ements characteristic of many concepts are properly coordinated (34.43%), stage 4 - An integrated management system is in place, which includes common elements from all selected systems (17.21%).

The respondents were asked about the benefits of introducing integrated process management (Table 7). They mainly indicated: organizing activities and processes, the possibility of continuous improvement, standardization of documentation, better information flow, and the creation of good practices. The respon-

dents also indicated the progress of the company's image and more efficient implementation of changes.

Moreover, the respondents pointed to difficulties resulting from the construction of integrated process management (Table 8), which mainly included: lack of proper preparation of employees, difficulties in understanding and applying integrated process management, as well as the excessive formalization of documentation and barriers to the integration of systems based on the process approach.

Table 7

Benefits of Integrated Business Process Management in the Surveyed Enterprises, Taking Into Account the Number of Employees

Response	Total	Employee qty. 10–49	Employee qty. 50–249	Employee qty. Above 249
Organizing activities and processes	47.54%	20.10%	34.90%	45.00%
Possibility of continuous improvement	45.08%	19.50%	22.30%	58.20%
Standardization of documentation	46.72%	15.10%	27.10%	58.80%
Good practice database	27.05%	18.20%	18.90%	62.90%
Better information flow and better internal and external communication	43.44%	12.20%	31.60%	56.20%
Flexible introduction of changes	21.31%	20.10%	30.90%	49.00%
Improving the image of the company	26.23%	17.50%	23.30%	59.20%
Clear definition of tasks, competencies and employee responsibility	22.95%	13.10%	32.10%	55.80%

Source: results of own research conducted in 2020

Table 8

Limitations of Integrated Business Process Management in the Surveyed Enterprises, Taking Into Account the Number of Employees

Response	Total	Employee qty. 10–49	Employee qty. 50–249	Employee qty. Above 249
Difficulty in understanding and applying integrated process management	42.62%	21.20%	35.60%	45.20%
Organizational culture is not conducive to the implementation of changes	22.13%	20.10%	34.90%	45.00%
Lack of proper preparation of the management staff	23.77%	18.50%	23.30%	58.20%
Lack of proper preparation of employees	41.80%	16.10%	26.10%	58.80%
Difficulties in defining integrated processes	27.05%	18.20%	18.90%	62.90%
High costs related to the implementation and maintenance of the system	26.23%	12.20%	31.60%	56.20%
Excessive formalization of documentation	27.87%	20.10%	30.90%	49.00%
Difficulty integrating multiple systems	27.87%	16.10%	26.10%	58.80%
Difficulties related to the introduction of new information systems	22.95%	20.10%	30.90%	49.00%

Source: results of own research conducted in 2020

4. Discussion and Conclusions

In the dynamically changing environmental conditions, the evolution towards integrated process management is becoming one of the most essential theoretical concepts and practical solutions. Classic solutions in business process management in the face of changing environmental challenges are not sufficient in managing organizations. The main research question was formulated as: how do contemporary organizations implement integrated business process management? Finally we identify and indicate usefulness of the concept of integrated process management based on empirical research carried out in Poland compared with selected research results in the world. Therefore, it is justified to integrate business process management with project management and knowledge management. This is a kind of management proposal for any organization that focuses on processes, projects, and knowledge in the center of attention of managers and employees, using new technological solutions. The challenge for contemporary organizations is the effective implementation of integrated process management in stages and its further improvement. The use of this concept enabling better adaptation to changes taking place in the environment through the implementation of projects, the use of external and internal knowledge resources. Enterprises benefit from organizing activities and processes, the possibility of continuous improvement, standardization of documentation, better communications. Business processes are used to achieve the goals of the organization, and knowledge and data are developed in accordance with these goals, used in business processes, and at the same time constituting their output. Thanks to the organization's learning process, based on continuous selection, collection and analysis of knowledge resources obtained during the implementation of business processes, both knowledge development and process improvement take place.

The conducted research procedure showed the legitimacy and usefulness of integrated business process management, taking into account the triad: processes-projects-knowledge. The proposed solution of an evolutionary nature is a proposition beneficial both from the point of view of managers and customers, in the face of dynamically changing environmental conditions.

5. Recommendations and Contributions

The usefulness of integrated business process management is ensured by the coordination of processes and links with strategic and operational assumptions, synergies of processes, projects, and knowledge. Such a solution can help the organization and transformation processes in the effective implementation of the strategy. Moreover, it acts as an instrument of active planning and control in adapting to the dynamically changing environmental conditions and the fourth technological revolution and other changes in environment (Haseeb et al., 2021). The research results show that it is necessary to use the project approach with the use of knowledge resources. You can observe an increase in the implementation of projects in process-oriented organizations, as well as modern technological solutions such as RPA or AI. However, it requires consistently undertaken actions, taking into account the strategic and operational level of the enterprise. Proper understanding of the principles of construction and implementation of the process management model among the management staff and other employees, as well as ensuring mechanisms of integration and introducing changes.

It is also essential to define the level of internal service quality parameters or to use internal service evaluation mechanisms, define business processes, and define management processes and project management processes. It is necessary to standardize the architecture of processes, change the organizational culture, which is associated with many internal regulations and resources. Integrated management should cover the vertical plane, and therefore the strategic and operational plane. In addition, emphasis should be placed on the use of a design approach, in particular:

- basing actions leading to changes on solutions resulting from the adopted principles of agile project management in combination with classic methodologies (e.g., PRINCE2),
- adopting a solution directing development projects towards the achievement of goals and standardization of the project management process, ensuring their effective and timely implementation,
- the decision to introduce changes is preceded by an analysis based on a business case and the prep-

aration of planned activities in a design perspective.

Under these conditions, it is necessary to take the following actions:

- looking for opportunities in the digitization of processes through the implementation of projects to be related to the organization's strategy,
- implementation of advanced technologies and development of the necessary skills of employees related to their operation and maintenance,
- implementation of projects and initiatives to improve customer satisfaction (through the customer experience approach, customer journey) to undertake more comprehensive cooperation with the customer,
- creating a toolkit for improving the methodology, from Lean analysis and processes to automation technologies,
- employee involvement in the implementation of changes and improvement of their skills.

The analysis of the literature on the subject and the research procedure carried out in the work deepens the scientific knowledge and fills the research gap in the field of building integrated process management in contemporary organizations, with particular emphasis on Polish enterprises in comparison to foreign ones. In the literature on the subject, the research was carried out in a fragmentary manner and related to selected areas of business process management, but not to the full extent of integrated business process management. In addition, the work indicates and describes the current scientific achievements in the target of research, which is integrated process management and the ways of its evolution and interaction with other management concepts.

6. Limitations and Future Research

The conducted considerations and research on integrated business process management indicate certain limitations. The directions of further work should include a wider scale of enterprises operating in Poland, as well as the methods and implementation of integrated process management, the definition and operationalization of individual levels in enterprises from various sectors of the economy, taking into account the scope of local, regional or international activities.

A new technological, globalization or knowledge-based economy challenge creates a multi-faceted and

multi-dimensional face of integrated business process management. The issues raised in the context of the emerging new challenges of the knowledge-based economy in relation to modern enterprises are worth further scientific exploration and require a new look at the methods and tools used in enterprises from the perspective of integrated business process management. The issues of integrated business process management in dynamically changing environmental conditions fill the gap in the field of both theoretical and empirical scientific studies. Attempts to identify relations within the process-projects-knowledge triad should be explored in the aspect of empirical research. Making managers aware of the relationship in relation to the three above-mentioned factors may significantly affect the functioning of enterprises and the implementation of strategic goals. The key will be to define the relationship between the three interdependent categories and the strength of their interaction. The analysis of the literature on the subject indicates the need for further scientific and research exploration in this subject. The issues of interoperability in process management, project management as well as other management concepts from a knowledge perspective require further research and broader discussion. There is also a lack of broader analyzes of the ways and methods of integrating process management with other management concepts, including project management and knowledge management. This area requires further in-depth literature and empirical research. Future concept research and the answer to the question: How will organizations implement new technological solutions in the context of integrated business process management seem justified? The discussed issues will continue to be the field of scientific and pragmatic considerations and inquiries of many contemporary researchers and practitioners.

References

- Antonucci, Y., & Goeke, R. J. (2011). Identification of appropriate responsibilities and positions for business process management success. Seeking a valid and reliable frame-work, *Business Process Management Journal*, 17(1), 127-146. <https://doi.org/10.1108/14637151111105616>
- Badakhshan, P., Conboy, K., Grisold, T., & vom Brocke. (2019). Agile business process management: A systematic literature review and an integrated

- framework. *Business Process Management Journal*, 26(6), 1505–1523. <https://doi.org/10.1108/BPMJ-12-2018-0347>
- Bandara, W., Harmon, P., & Rosemann, M. (2010). *Professionalizing business process management: Towards a body of knowledge for BPM*. Heidelberg.
- Bitkowska, A. (2019). *Od klasycznego do zintegrowanego zarządzania procesowego* [From classic to integrated process management]. C.H. Beck.
- Bitkowska, A. (2020). The relationship between business process management and knowledge management - Selected aspects from a study of companies in Poland, *Journal of Entrepreneurship. Management and Innovation*, 16(1). <https://doi.org/10.7341/20201616>
- Bojar, E. (2020). *The future of management, Challenges in the Era of Post-Globalization*. TNOiK.
- Bolisani, E., & Bratianu, C. (2018). The emergence of knowledge management. In E. Bolisani, & C. Bratianu (Eds.), *Emergent knowledge strategies: Strategic thinking in knowledge management* (pp. 23-48). Springer International Publishing. https://doi.org/10.1007/978-3-319-60657-6_2
- Brzeziński, S. (2015). *Outsourcing Idea in the Contemporary Management*. Technical University of Ostrava.
- Brzeziński, S. (2020). *Marketing, logistics, finance and corporate social responsibility*, Publishing House of the Czestochowa University of Technology.
- Brzeziński, S. (2021). Marketing jako proces tworzenia wartości w dobie pandemii COVID-19, *Przegląd Organizacji* [Marketing as a process of creating value in the time of the COVID - 19 pandemic, *Organizational Review*] 6, 9–14, <https://doi.org/10.33141/po.2020.06.02>
- Brzeziński, S., (2020). Challenges for management science during COVID-19 pandemic. In E. Bojar (Ed.), *The future of management, Challenges in the Era of Post-Globalization*. TNOiK.
- Chountalas, P. T., & Lagodimos, A. G. (2019). Paradigms in business process management specifications: A critical overview. *Business Process Management Journal*. <https://doi.org/10.1108/BPMJ-01-2018-0023>
- Cruz-Cárdenas, J., Guadalupe-Lanas, J., Zabelina, E., Palacio-Fierro, A., Velín-Fárez, M., & Staniewski, M. W. (2019). Consumer value creation through WhatsApp use. *Academia-Revista Latinoamericana de Administración*, 32(4), 455-471. <https://doi.org/10.1108/ARLA-02-2019-0044>
- Detyna, B. & Detyna, J. (2016). Multidimensionality of management efficiency - Measurement proposal in public administration. In A. Świrski, K., & Wąsowska (Eds.), *Effectiveness of management: Micro and macro level*. Siedlce University of Natural Sciences and Humanities Publishing House.
- Di Ciccio, C., Gabryelczyk, R., García-Bañuelos, L., Hernaus, T., Hull, R., Indihar Štemberger, M., & Staples, M. (2019). Business process management: Blockchain and Central and Eastern Europe Forum. In C. Di Ciccio, R. Gabryelczyk, L. García-Bañuelos, T. Hernaus, R. Hull, M. Indihar Štemberger, A. Kő, & M. Staples (Eds.), *Lecture notes in business information processing* (pp. 1-361). Springer.
- Dumas M., La Rosa M., Mendling J., & Reijers H. A. (2013). *Fundamentals of business process management*. Springer.
- Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. A. (2018). *Introduction to business process management*. In M. Dumas, M. La Rosa, J. Mendling, & H. A. Reijers (Eds.), *Fundamentals of Business Process Management* (pp. 1-33). Springer. https://doi.org/10.1007/978-3-662-56509-4_1
- El Ghalbzouri, H., & El Bouhdi, J. (2022). Integrating business intelligence with cloud computing: State of the art and fundamental concepts. In R. J. Howlett, & L.C. Jain (Eds.), *Smart innovation, systems and technologies* (pp. 197-237). Springer. https://doi.org/10.1007/978-981-16-3637-0_14
- Glinkowska, B., (2017). Knowledge acquisition in small and medium businesses. *Chinese Business Review*, 16(1), 19-27. <https://doi.org/10.17265/1537-1506/2017.01.002>
- Grajewski, P. (2012). *Procesowe zarządzanie organizacją* [Business Process Management]. PWE.
- Gross, S., Stelzl, K., Grisold, T., Mendling, J. Röglinger, M., & vom Brocke, J. (2020). The business process design space for exploring process redesign alternatives. *Business Process Management Journal*, 27(8). <https://doi.org/10.1108/BPMJ-03-2020-0116>
- Gudelj, M., Delic, M. Kuzmanovic, B. Tesic, Z., & Tasic, N. (2021). Business process management model as an approach to process orientation. *Int. J. Simul. Model*, 20(2). <https://doi.org/10.2507/IJSIMM20-2-554>
- Harmon, P., & Garcia, J. (Dec 8, 2021) State of business process management – 2020 report. BPTrends. <https://www.bptrends.com/bptrends-state-of-business-process-management-2020-report/>

- Haseeb, M., Staniewski, M., Mihardjo, L. W. W., & Awruk, K. (2021). Does forest disturbance matter for climate degradation? Evidence from top Asian economies. *Technological and Economic Development of Economy*, 27(3), 583–601. <https://doi.org/10.3846/tede.2021.14254>
- Helbin, T. & van Looy, A. (2022). Is business process management (BPM) ready for ambidexterity? Conceptualization, implementation guidelines and research agenda. *Sustainability in Business Processes Management*, 13(4). <https://doi.org/10.3390/su13041906>
- Hrabal, M., Tuček, D., Molnár, V. & Fedorko, G. (2021). Human factor in business process management: Modeling competencies of BPM roles. *Business Process Management Journal*, 27(1), 275–305. <https://doi.org/10.1108/BPMJ-04-2020-0161>
- Jędrzejczyk, W., & Brzeziński, S. (2021). The importance of social media in managing the image of the educational institutions. *Contemporary Economics*, 15(4), 457–466, <https://doi.org/10.5709/ce.1897-9254.460>
- Jeston, J., & Nelis, J. (2014). *Business process management. Practical guidelines to successful implementations*, London and New York: Routledge Taylor&Francis Group.
- Kim, S. Y., & Upneja, A. (2021). Majority voting ensemble with a decision trees for business failure prediction during economic downturns. *Journal of Innovation & Knowledge*, 6(2), 112–123. <https://doi.org/10.1016/j.jik.2021.01.001>
- Lee, M. T., & Suh, I. (2022). Understanding the effects of environment, social, and governance conduct on financial performance: Arguments for a process and integrated modelling approach. *Sustainable Technology and Entrepreneurship*, 1(1), 100004. <https://doi.org/10.1016/j.stae.2022.100004>
- Liu, P., & Li, H. (2021). The impact of banking competition on firm total factor productivity. *Economic Research-Ekonomska Istraživanja*, 1–21. <https://doi.org/10.1080/1331677X.2021.2010109>
- Malinova, M., & Mendling, J. (2018). Identifying do's and don'ts using the integrated business process management framework. *Business Process Management Journal*, 24(4), 882–899. <https://doi.org/10.1108/BPMJ-10-2016-0214>
- Martínez, J. M. G., Carracedo, P., Comas, D. G., & Siemens, C. H. (2022). An analysis of the blockchain and COVID-19 research landscape using a bibliometric study. *Sustainable Technology and Entrepreneurship*, 1(1), 100006. <https://doi.org/10.1016/j.stae.2022.100006>
- Mat Jusoh, Y. H., Azmawaty Abd Razak, S. N., Basirah Wan Mohamad Noor, W. N., Hudayati, A., Puspaningsih, A., & Ahmad Nadzri, F. A. (2022). Audit committee characteristics and timeliness of financial reporting: Social enterprises evidence. *Contemporary Economics*, 16(2). <https://doi.org/10.5709/ce.1897-9254.478>
- Mendling, J. Pentland, B. T. & Recker, J. (2020). Building a complementary agenda for business process management and digital innovation. *European Journal of Information Systems*, 29(3), 208–219. <https://doi.org/10.1080/0960085X.2020.1755207>
- Mohamad, A. K., Jayakrishnan, M. & Yusof, M. M. (2022). Thriving information system through business intelligence knowledge management excellence framework. *International Journal of Electrical and Computer Engineering*, 12(1), 506–514 <https://doi.org/10.11591/ijece.v12i1.pp506-514>
- Mysaka, H., & Derun, I. (2021). Corporate financial performance and Tobin's q in dividend and growth investing. *Contemporary Economics*, 15(3), 276–289. DOI: 10.5709/ce.1897-9254.449
- Nowosielski, S., (2018). *Procesy i projekty w organizacji. O potrzebie i sposobach współdziałania* [Processes and projects in an organization. On the need and methods of cooperation]. *Studia i Prace Kolegium Zarządzania i Finansów*, 169.
- Paschek, D., Ivascu, L., & Draghici, A. (2018). Knowledge management – The foundation for a successful business process management. *Procedia - Social and Behavioral Sciences*, 238, 182–191, <https://doi.org/10.1016/J.SBSPRO.2018.03.022>
- Reijers, H. A. (2021). Business process management: The evolution of a discipline. *Computers in Industry*, 126. <https://doi.org/10.1016/j.compind.2021.103404>
- Rosemann, M. & vom Brocke, J. (2015), *Handbook on business process management 2: Strategic alignment, governance, people and culture*, Springer.
- Schmiedel, T. Recker, J. & vom Brocke, J. (2020). The relation between BPM culture, BPM methods, and process performance: Evidence from quantitative field studies. *Information & Management*, 57(2). <https://doi.org/10.1016/j.im.2019.103175>
- Sierpńska-Sawicz, A., & Sierpńska, M. (2021). Depreciation capital as a source of financing of mining companies activities. *Contemporary Economics*, 15(4), 429–442. DOI: 10.5709/ce.1897-9254.458
- Skare, M., & Soriano, D. R. (2021). How globalization is changing digital technology adoption: An international perspective. *Journal of Innovation & Knowledge*, 6(4), 222–233. <https://doi.org/10.1016/j.jik.2021.01.001>

- jik.2021.04.001
- Sliz, P. (2019). Robotization of business processes and the future of the labor market in Poland - Preliminary research. *Organization and Management*, 2(185), 67-79. <https://econjournals.sgh.waw.pl/OiK/article/view/1022>
- Sliz, P. (2021). *Organizacja procesowo-projektowa* [Process and design organization]. Difin.
- Staniewski, M. (2008). *Zarządzanie zasobami ludzkimi a zarządzanie wiedzą* [Human resource management and knowledge management in an enterprise]. Vizja, Warszawa
- Staniewski, M. (2016a). The contribution of business experience and knowledge to successful entrepreneurship. *Journal of Business Research*, 69(11), 5147-5152. <https://doi.org/10.1016/j.jbusres.2016.04.095>
- Staniewski, M. (2016b). *The organisational and psychological predictors of entrepreneurial success. Pursuit of success*. Lambert Academic Publishing.
- Staniewski, M., & Awruk, K. (2019). Entrepreneurial success and achievement motivation – A preliminary report on a validation study of the questionnaire of entrepreneurial success, *Journal of Business Research*, 101, 433-440. <https://doi.org/10.1016/j.jbusres.2019.01.073>
- Staniewski, M., & Awruk, K. (2021). Parental attitudes and entrepreneurial success. *Journal of Business Research*, 123, 538-546. <https://doi.org/10.1016/j.jbusres.2020.10.039>
- Staniewski, M., & K. Awruk, (2018). Questionnaire of entrepreneurial success-Report on the initial stage of method construction. *Journal of Business Research*, 88, 437-442. <https://doi.org/10.1016/j.jbusres.2017.11.041>
- Staniewski, M., & Nurudeen, A. (2019). Determinants of corruption in Nigeria, Evidence from various estimation techniques, *Economic Research-Ekonomska Istraživanja*, 32, 3052-3076. <https://doi.org/10.1080/1331677X.2019.1655467>.
- Štemberger, M. I., Bosilj-Vukšić, V., & Jaklić, M. I. (2009). Business process management software selection—two case studies. *Economic research-Ekonomska istraživanja*, 22(4), 84-99. <https://doi.org/10.1080/1331677X.2009.11517393>.
- Swanson, E. B. (2019). Technology as routine capability. *MIS Quarterly*, 43(3), 1007–1024. <https://doi.org/10.25300/MISQ/2019/14653>
- Szopiński, T., & M. Staniewski, (2017), Manifestations of e-government usage in post-communist European countries. *Internet Research*, 27(2), 199-210. <https://dx.doi.org/10.1108/IntR-01-2015-0011>
- Trocki, M. (2018). Project governance – kształtowanie ładu projektowego organizacji [Project governance – shaping the project governance of the organization]. *Studia i Prace Kolegium Zarządzania i Finansów*, 159, 9-23.
- Ubaid, A. M., & Dweiri, F. T. (2020). Business process management (BPM): Terminologies and methodologies unified. *International Journal of System Assurance Engineering and Management*, 1-19.
- van Looy, A. (2017). Quantitative study of the link between business process management and digital innovation. In J. Carmona, G. Engels, & A. Kumar (Eds.), *Business Process Management Forum. BPM 2017* (pp. 177-192). Springer. https://doi.org/10.1007/978-3-319-65015-9_11
- Weske, M. (2019). *Business process management, concept, languages, architectures*, Springer.
- Wodecki, A. (2019). *Artificial intelligence in value creation. Improving competitive advantage*. Palgrave Macmillan.
- Wodecki, A. (2020). *Artificial antelligence in management. Self-learning and autonomous systems as key drivers of value creation*. Edward Elgar Publishing.
- Wyrozębski, P. (2014). *Zarządzanie wiedzą projektową* [Project knowledge management]. Difin.
- Wyrozębski, P. (2019). *Biuro zarządzania projektami* [Project management office]. PWE.
- Żebrowska-Suchodolska, D., & Karpio, A. (2022). Study of the skills of balanced fund managers in Poland. *Contemporary Economics*, 16(2). <https://doi.org/10.5709/ce.1897-9254.474>