

Contemporary IT tools supporting project and process management

Agnieszka Bitkowska 

Politechnika Warszawska, Wydział Zarządzania

e-mail: agnieszka.bitkowska@pw.edu.pl

Małgorzata Waszkiewicz 

Politechnika Warszawska, Wydział Zarządzania

e-mail: malgorzata.waszkiewicz@pw.edu.pl

Izabela Cimoch 

Politechnika Warszawska, Wydział Zarządzania

e-mail: izabela.cimoch.dokt@pw.edu.pl

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Abstract

The article describes selected IT tools supporting business process management, project management, and new solutions simultaneously supporting both processes. The summarized results of the research on IT tools used in Polish enterprises in 2020 are presented. The aim of the article is to analyze the use of IT tools supporting enterprises in integrated project and business process management. Currently, IT systems supporting the process approach provide many features. Still, they do not meet the expectations of modern enterprises, especially those which simultaneously deal with numerous of complex projects. The so-called 3P principle (Portfolio/Project/Process) involves the integration of processes and projects within IT systems. IT tools that integrate knowledge, information, and data on the project portfolio, individual projects and processes constitute a great challenge to modern organizations due to multitude of functions they provide to their users. The development of sciences related to business process management and project management, and the

practical use of achievements in these areas contributed to developing IT tools supporting both approaches. Today we can see the need to integrate them to get a new quality – synergy and flexibility. The demand for integrated IT solution is growing, but currently only few tools are available, and not many enterprises are using them yet. Certainly, this trend will develop, evolve and adapt to the fast-changing business needs. Yet today, there is not enough of extensive research on the integration of process and projects management, as well as there are not many IT tools which could apply in these solutions [Sliż, 2021, p. 23-25].

Key words

business process management, project management, IT tools, PPM/IT, 3P

Introduction

Despite periodic fluctuations in interest in this topic, consideration of process and project management in contemporary organizations is both a challenge and a need from the point of view of theoreticians and practitioners [vom Brocke et al., 2021; Bitkowska, 2021]. The process approach allows you to get to know the company entirely, presents the occurring dependencies, and, thanks to the supervision, determines the fulfillment of critical points affecting the final product. It also allows to identify the level of customer satisfaction and provides the organization's financial information [Zymonik et al., 2013, p. 113]. It is also used for activities related to continuous process improvement. The project approach constitutes the implementation of the process approach by defining processes in many classical methodologies, such as Prince2 or PMBoK. The disconnected treatment of the issues of processes and projects in an enterprise causes the loss of possible synergies that could be created if a holistic approach, integrating various management concepts and methods, was implemented [Nowosielski, 2017, p. 68, Sliż, 2021]. This phenomenon can also be observed at the operational level, where IT tools integrate the organization's processes and projects in one place. The article aims to present modern IT tools supporting project and business process management. It seems possible to achieve synergy of working with projects and processes within one. The article presents features of IT tools supporting process and project management and shows the benefits and weaknesses of combining these two areas in a comprehensive IT software.

1. IT tools supporting business process management

IT tools support the concept of Business Process Management (BPM) in modern organizations in a multifaceted way. This is a separate class of IT solutions - the BPMS (Business Process Management System) class. IT systems of the BPMS class that support the process approach to the organization should enable definition, modeling, optimization, simulation, and control of its business processes. The BPM system should also contain tools supporting the analysis of archival data arising after the process completion to analyze them and possibly optimize the course of the process [Bitkowska, 2009].

Tab. 1. Primary functionalities of IT systems supporting business process management

<p>Basic functionalities</p>	<p>creating a business process model based on market standards, such as Business Process Model and Notation (BPMN); defining rules that control the process flow; defining system actions executed in the context of the process (during its execution); creating users and assigning them to tasks in processes; defining rules of giving tasks to users; design of user interfaces dedicated to supporting tasks in processes; designing data necessary for the execution of the process and creating relationships between them and the interfaces of individual assignments; creation of process integration interfaces with external systems; defining and executing reports using data processed within the processes; process monitoring; managing all elements that make up a process implementation: process definitions and instances, users, rules and actions, user interfaces, integration interfaces, data, reports.</p>
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Source: author's research.

The use of information systems mainly includes ERP class systems with BI (Business Intelligence) tools often supported by CRM (Customer Relationship Management) class systems [Jelonek, 2018]. Due to the specificity and conditions of business process management with particular emphasis on the support of implementation aspects, around BPM technologies, there are [Nosowski, 2010, p. 175]:

- vendors specializing in BPM solutions, who define the BPM area and provide comprehensive, functional solutions;
- providers of workflow and document management solutions - providers traditionally coming from the area of workflow management and document management, which integrate these solutions with other components of

BPM packages, often additionally linking them with CMS systems (e.g., FileNet);

- business systems integrators - providers were offering integration platforms application development environments that add BPM functionality to such solutions (e.g., IBM); business application providers - vendors offering ERP, SCM, CRM solutions, who add BPM solutions (not always precisely) to offer comprehensive solutions (e.g., SAP).

IT tools supporting business process management that allows real-time process analysis enables management to identify process inefficiencies and take steps to resolve issues [Mejssner, 2018]. Today, BPMS systems help deliver good customer experiences resulting from process execution or create processes with customers or suppliers to better build relationships with them. One of the systems offering such solutions is iGrafx, which provides Journey Mapping support and business process management functions in one place [Bitkowska, 2021].

Research conducted by APQC proved that in the case of process organizations, software used for process automation is the most important (66%), followed by data management (56%), internal collaboration platforms (41%), and cloud computing solutions (40%) [APQC, 2020]. However, most vendors offer integrated packages consisting of closely cooperating tool components dedicated to specific stages of business process management [Nosowski, 2010, p. 175]. Other tools that enable real-time monitoring and simulation and relevant reviews are available through dashboards that automatically identify bottlenecks or other irregularities.

Cloud Computing technology is gaining tremendous popularity when supporting business process management. As points out, this model of providing IT services and solutions also fits into business process management - as Cloud BPM [Dziembek, 2016; Gzik, 2017]. The perspective of business processes, their automation, management, and dynamic changes is unique for the organization, as it is directly related to its functioning, development, and competitive advantage. For this reason, BPMS solutions should meet strategic and operational objectives focusing on good customer service.

2. IT tools supporting project management

Nowadays, companies carry out thousands of complex projects in various subjects (such as IT, construction, research, restructuring), including interdisciplinary projects. In Poland, the increase in interest in projects has been visible since accession to the European Union in 2004, which was associated with obtaining grants to implement specific projects. The variety of programs, beneficiaries, and the scale of

investments has influenced the growing interest in knowledge from the discipline of management science, which is project management [Kozarkiewicz, 2012, pp. 17-18].

The growing importance of project management positively influenced the formation of international standards, methodologies, and norms based on research confirming the effectiveness of their application. Methodologies have been developed by institutions specializing in this subject, such as Project Management Institute (PMI) in the United States, Association for Project Management in the United Kingdom (APM), or Central Computer and Telecommunications Agency in the United Kingdom (PRINCE2). In the methodologies mentioned above, the accent is put primarily on planning, organizing tasks, and achieving objectives. The summary of phases for certain methodologies used in project management is presented in Table 2. It is assumed that they are largely oriented towards the final product or, in other words, the project result. The essence of these approaches is to improve the planning, scheduling, and control of projects characterized by complexity, with many interrelated tasks, in a rather stable environment. The resulting methodologies are intended to allow the project to be managed in a controlled manner, although this does not ensure the elimination of all problems that may arise during project implementation [Kopczyński, 2013, pp. 73-75].

Tab. 2. Phases of key project management methodologies

Methodology	Cycle phases - key processes
PMI/PMBok	Initiation processes Planning processes Implementation (execution) processes Monitoring and control processes Termination processes
PRINCE2	Project preparation Project initiation Project execution (processes: strategic project management, stage control, product manufacturing management, stage scope management)
APM	Creating a vision Adaptive planning Exploration Adaptation Project closure

Source: own study based on Kopczyński, 2013, p. 75.

The Covid-19 pandemic has greatly accelerated changes within project management [Liebowitz, 2020]. There is a clear trend away from traditional ways of working towards digitization—the pandemic results of the increasing frequency of digital technology use. There is a need to conduct future research that would focus on how

digital technologies help integrate research teams and establish collaboration which in turn might translate into higher quality and a greater quantity of basic or applied research (Wartini-Twardowska et al., 2021, p. 30). The significant growth of virtual teams within project work is highlighted, redefining project manager roles and creating a challenge within work management or remote motivation [Wu, 2021]. J. Lipnack and J. Stamps [Lipnack and Stamps, 2000, p. 38] define a virtual team as a group consisting of two or more people who interact and communicate mainly through ICT tools [Baranowska and Saniuk, 2017, pp. 6-7]. Project leaders during the Covid-19 pandemic had the difficult challenge of finding new, flexible solutions. "Covid-19 disrupted our normal lifestyles," said Hugh Lawson, Sydney Metro City & Southwest project director in Australia. "The challenges of remote working and physical distance have been difficult, but we've also seen greater collaboration and creativity. It has allowed us to do things differently". For example, when the city of Sydney closed, his team had an unexpected and unprecedented opportunity to accelerate their schedules - working longer hours in some locations and even closing some roads in the city center [www.pmi.org, 2021]. The McKinsey report published in February 2021 states that post-pandemic jobs that require a high level of proximity are likely to experience a more extraordinary post-pandemic transformation, creating a domino effect for other jobs. Remote work and virtual meetings will likely continue but may decrease in intensity. It also appears that 20% to 25% of workers may work from home three to five days a week without changing their efficiency or productivity [www.mckinsey.com, 2021].

The current development of Internet accessibility and increased flows improving the quality of connections greatly facilitates the development of virtual communication and is becoming more and more accurate and widespread. Often, teamwork on projects uses the above-mentioned cloud - a type of collaboration that greatly facilitates users' project work on different types of files stored on cloud platform accounts and drives [Gustav and Milosz, 2019, pp. 252-253]. Such solutions significantly improve the work of teams in project work.

Elements such as effective communication and the need to adapt all dimensions of projects to the changing environment have forced the need to support project management with information systems. With these systems, projects can be organized and conducted having a central repository at their disposal. It should be noted that computerized data processing systems have had a significant impact on the development of project management, making it easier to handle large amounts of information or manage projects remotely. Depending on an organization's project maturity level, it is possible to indicate the tools that work well at several levels. The

maturity model proposed by the researchers working for Gartner Inc. provides a general recommendation of IT tools appropriate for its maturity levels. The literature indicates three types of IT tools to support project management [Weidemann, 2017, pp. 140-141]:

- individual, which supports the user in usually managing only one project, most often in scheduling;
- collaborative, which supports group work on several projects, reporting progress, communicating, adding information in one place;
- integrated, which allows many people to work with many data sources, integrated in one tool, implemented for the whole organization.

Table 3 shows the IT tools that support project management at different project maturity levels of the organization.

Tab. 3. IT tools supporting project management on different levels of project maturity of an organization

Specification	Level 0: no maturity, ad hoc	Level 1: initial, reactive	Level 2: evolving, emerging discipline	Level 3: defined standards, tentative integration	Level 4: managed standards, increasing effectiveness	Level 5: optimal standards, the whole organization
Technology (one of Gartner's design maturity dimensions)	Occasional use of scheduling tools, worksheets spreadsheets and other partial solutions depending on your needs	Tools scheduling, reporting milestones	Additionally, tools collaborations and tools supporting teamwork	Additionally, tools management project portfolio, tools reporting tools dashboards, managerial	Adding workflows work, high-level adoption tools	One solution to support reporting, collaboration, and analytics data
Examples of tools	Excel, PowerPoint, GanttProject etc.	ProjectLibre Ganttter, MS Project, GanttChart, etc.	SharePoint, Trello, Project-Place Asana, Podio, BaseCamp, etc.	SharePoint, MS Project Server (Project Online), Innotas, etc.	MS Project Server, Planview, CA Clarity, Planisware, Primavera, etc.	Planview, Planisware, CA Clarity, etc.

Source: Weidemann, 2017, p. 141.

The basic functionalities currently expected from project management support information systems are:

- ability to create a project description including, among others, project objective, business justification, project scope, supported strategic goals and project organizational structure;
- scheduling with visualization (e.g., Gantt chart) with marked critical path and possibility to update it during project execution;
- human and material resources management along with assigning them to particular tasks;
- budgeting and cost management;
- monitoring of project execution based on reliable declarations or progress documentation;
- baseline analysis of performance deviation from the plan;
- project risk management (e. g., uncertain events, such as opportunities and threats);
- reporting, including the ability to generate custom report templates;
- use of indicators allowing for project evaluation (e.g., based on the Earned Value Method);
- integration with other IT solutions, e.g., HR and accounting systems;
- ability to export and import data between different project management software.

The benefits of implementing project management software can be aggregated into four main groups: streamlining, efficiency-enhancing, optimization, and integration-supporting [Waszkiewicz and Gumienny, 2021]. The most important benefits associated with the improvement include access to up-to-date information on ongoing projects for all stakeholders, monitoring of the reliable status of projects taking into account deviations from the plan and the progress of tasks during their implementation, proactive decision-making on projects, rapid identification of risks enabling efficient initiation of corrective action and risk mitigation, efficient analysis of projects to be launched in terms of availability of resources and funding, effective communication and exchange of information between project team members, support for the work environment including PMO, project manager, project team members. The group of benefits associated with increased efficiency includes detailed planning considering all relevant project parameters, global resource management based on up-to-date and reliable data on the progress of all projects, standardized reporting based on data from the system, minimizing the risk of exceeding the budget and project implementation time, automation of business processes and project lifecycle management. Optimization benefits include appropriate use of project team

time, optimal estimation of project expenditures, maximization of profitability ratio. Integration-supporting benefits are management of the entire project in one place (system), simultaneous work of team members on the schedule, budget, etc., a simple view presenting the baseline/estimated/executed values concerning the schedule, budget, competencies, centralizing space to the repository of information about all projects implemented in the company, efficient management of project knowledge, standardization of project templates, reports and procedures for project management, quick import of data into the system, thanks to integration with external source systems [Gumienny, 2021, pp. 79-81]. However, it turns out that information systems supporting project management can provide users with even more significant benefits. The possibility of integrating the process approach with the project approach in an IT environment is slowly becoming a fact (as described in the next section of the article).

3. IT tools that integrate process and project management

The current realities of the functioning of enterprises in the era of computerization and knowledge are determined by the changing conditions of the environment, which include the virtualization of modern enterprises, determined by the development of the fourth industrial revolution (Industry 4.0), increasing the company's resources with knowledge, collecting and processing very large data volumes, economic crises, epidemiological threats. These factors influence the constant search for new solutions also in the concepts and methods of managing organizations [Sliż, 2021, p. 9].

The issue of the common occurrence in companies of business process management and project management was undertaken and described in the works of, among others, P. Sliż [2021], A. Bitkowska [2019; 2020], J. Lichtarski and G. Osbert-Pociecha, editors [2019], S. Nowosielski [2017; 2018]. Integrating the process and project management system into one management system has potential benefits, including [Sliż, 2021, p. 91]:

- a holistic view of processes and projects in the enterprise;
- increasing the flexibility of the system by increasing its susceptibility to new components;
- increasing the ability to respond to environmental factors;
- standardization of documentation and its circulation for processes and projects;
- improving the flow of knowledge between projects and processes;

- use of business process management assumptions in creating standards for processes in projects.

Along with the development of scientific studies in combining business process management and project management in organizations, solutions have also begun to emerge as tools supporting these concepts, and enterprises are interested in this type of tools supporting them in integrated management.

It turns out that IT systems supporting the process approach have many advantages. Still, they do not meet the expectations of modern companies, especially those which deal with many complex processes. It is like project management - there are more and more projects, their complexity is growing, and at the same time, there is a tendency to have a very detailed approach to tasks or products realized by a project team. Integration of processes and projects is realized within IT systems based on the so-called 3P rule (Portfolio/Project/Process). Systems of this class are used to show the complete status of an enterprise's projects (project portfolio), to manage individual projects (project level), and to help monitor the progress of unique processes within a project (or its stage or task). This three-level approach makes it possible to look from the highest (most general) layer, i.e., the program, to the data concerning the lowest (operational) sphere of work execution, i.e., individual processes. The advantages of IT systems that enable work on these levels within one tool are many. First, it is a complete database of knowledge, information, and data about the work carried out inside the enterprise. Secondly, a change in the lowest level is immediately (automatically) imaged in the whole project and thus in the project portfolio. As an example, it can be said that if the cost of work of a person implementing a process element increases by e.g., 5 PLN, then this cost will be reflected in the prices of the project within which the process is implemented, and then it will be transferred to the portfolio level. IT tools operating on the 3P principle can generate reports on the cause of cost increase, e.g., in a group of projects. Thanks to this, each change in a particular process (presented as a cost example, but it can concern cost, time, or quality) is reported together with a detailed illustration of its impact on the other two levels - project and portfolio.

An example of an IT tool that supports portfolio, project, and business process management within a project is ISETIA. This is software from Future Network Development s.c., which using the so-called ISETIA Dashboard®, i.e., central desktop, allows moving from portfolio level to project level, and then to the processes executed within the selected project. Additionally, the system also has the functionality of documentation management, thanks to which you can get precise information about each element of work performed within the company. SETIA is developed using the PMI methodology, so it uses the features of task-oriented project

management (rather than delivering partial deliverables, as in the case of PRINCE2). Processes are depicted as Task elements. An example of an ISETIA dashboard is presented in Figure 1.

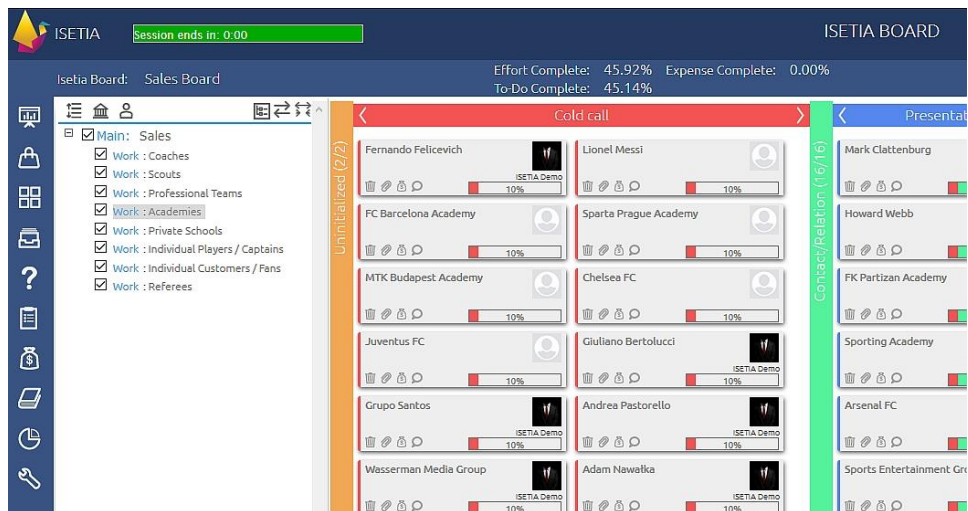


Fig. 1. ISETIA Dashboard® operating on the 3P principle

Source: FND, 2021.

The figure above shows the process level of the selected project. Each team member has their own ISETIA Dashboard® with the information needed to perform tasks and requests: including documents awaiting review, approvals or just items requiring attention, workflow statuses, issues, risks, expenses, and a Gantt chart. Although the software is mainly used in the construction sector, there is a strong tendency to increase its usefulness in other sectors with complex projects to respond to current user needs.

To sum up, the 3P principle consisting in combining the portfolio level, with the project level and then the process level, integrated in one IT tool, combines the benefits resulting from the use of IT tools dedicated to process and project management and benefits from the synergy effect through central access to the necessary information. Of course, such a solution also has its weaknesses - the use of the software requires more extended training in the use of functionality than in the case of a system supporting only one of the mentioned areas. Despite the differences between

portfolio, project and business process management (Table 4), IT tools based on the 3P principle are desired and sought-after today's IT market.

Tab. 4. Critical differences between portfolio, project, and business process management

Characteristics	Portfolio management	Project management	Business process management
Scope	Broad includes all initiatives (programs and projects) in the organization	Narrow, focused on task completion	Very narrow, focused on task element
Evaluation criteria	Influence on organization's strategy	Time, budget, scope	Time, budget, scope as a partial element of the project
Approach to change	Changes concern the structure of the portfolio, and their aim is to optimize benefits and risks for the whole organization	Changes are clearly defined and controlled to minimize their impact on time, cost and quality	Changes are carefully analyzed, smoothly implemented
Time horizon	Continuous activity, with no predictable end time	Lead time defined in months or weeks	Lead time defined in days or weeks, "done" status when all stages have been passed
Planning	General, focused on information sharing, identifying costs and portfolio impact across the organization	Detailed, indicating the tasks, time, and resources needed to produce a well-defined result	Very detailed, precise breakdown of time, resources, and authority to accept subsequent stages
Monitoring	Monitoring of the aggregated effects of the portfolio against the strategic objectives of the organization	Monitoring and control of task execution times, costs, and meeting quality requirements	Detailed control of the process at each stage of its implementation along with the authority to accept the transition to subsequent stages

Source: compiled from Rayner, Reiss, 2013, p. 18 and Gumienny 2021.

The presented IT tool - ISETIA, which supports portfolio, project, and business process management as part of the project proposed by Future Network Development s.c., seems to meet the benefits of integration, also showing the complexity of the tool. It seems justified to continue research for the process and design environment in enterprises and within the proposed solutions and tools supporting this type of integrated environment.

4. The results of the research

The presented research results were conducted in 2020 on a sample of 105 entities. The selection of enterprises for the research was made using the targeted method, taking into account the following criteria: the number of people employed.¹. The survey respondents were managers and representatives of the management staff with appropriate knowledge in business process management and project management.

Tab. 5. Use of BPMS information systems to support business process management share)

IT sys-tems	Process identifica-tion	Process modeling	Process monitoring	Process re- porting	Process si- mulation	Process improve- ment
To a very large extent to all processes	28,42%	16,38%	26,14%	21,65%	7,34%	21,47%
To a large extent	33,07%	41,11%	32,64%	33,33%	21,90%	29,94%
Medium scope, major processes	17,82%	16,95%	19,21%	23,47%	29,94%	19,64%
In small range to single processes	9,91%	7,34%	7,21%	3,95%	11,30%	8,47%
None	9,60%	10,17%	5,65%	6,78%	14,12%	9,04%

Source: author's research.

Over 90% of the surveyed companies use IT tools supporting business process management. The most important areas in which enterprises use IT tools to a large or large extent, exceeding 50% in the majority, are (Table 5):

- identification of processes – 61,49%,
- process modeling – 57,49%,
- process monitoring – 58,78%,
- process reporting – 54,98%,

¹ The definition of a small, medium, the large enterprise was adopted on the basis of the provisions of the Act of July 2, 2004 on the freedom of economic activity.

simulation of processes - constituting the smallest share amounting to 29,14%, process improvement – 51,41%.

It is worth noting that such extensive use of IT tools increases the effectiveness of business process management in the enterprise, at the same time showing an increase in enterprises' awareness of the need to invest in new technological solutions supporting management.

Tab. 6. Used project management methodologies - in total and by small, medium-sized, and large enterprises

Project management methodologies	Total	Small	Medium-sized	Large
PMBook	9,02%	5%	6%	15%
SCRUM	13,11%	11%	21%	31%
Prince2	14,75%	16%	14%	23%
Ten Step	1.64%	9%	15%	21%
Others	4.10%	13%	43%	49%
Lack of methodologies	47.54%	40%	43%	46%

Source: author’s research.

In the surveyed group, enterprises that do not use any project management and management methodology available on the market constitute a large share, accounting for 47.54%. This result is influenced by all sizes of the surveyed enterprises, with most of the large enterprises accounting for the largest share of 46%. Taking into account the results for all surveyed companies, they most often use the Prince 2 project management methodology (14.75%) and then SCRUM (13.11%). Large and medium-sized enterprises most often use the SCRUM methodology (medium 21%, large 31%) or other methodologies not mentioned in the research questionnaires (medium 21%, large 49%). Small enterprises mainly use the Prince2 methodology (16%) in their work with project management and then use other methodologies not mentioned in the research questionnaires (13%) (Table 6).

Tab. 7. Used IT systems supporting business process management - in total and by small, medium-sized, and large enterprises ²

IT Systems	Total	Small	Medium-sized	Large
Aris	9,04%	7%	6%	13%
Adonis	28,68%	31%	31%	21%
iGrafix	7,65%	6%	14%	3%
IBM BPM	9,60%	9%	18%	7%

² The same study

IT Systems	Total	Small	Medium-sized	Large
SAP	37,90%	16%	43%	46%
Microsoft Visio	15,82%	14%	10%	21%

Source: author's research.

Organizations have several IT systems that support process and project repositories. The most frequently mentioned IT systems in the surveyed companies are SAP, Adonis, and Microsoft Visio - one of the most popular and widely available tools supporting business process management. Many of the surveyed organizations declare that they use their solutions in this area, sometimes prepared by the IT department. The SAP system has the largest share of 37.9%, being support mainly in large enterprises, constituting 46%, and in medium-sized enterprises, constituting a little less than 43%. A system often used in project management, which in the surveyed companies will achieve high results, reaching 26.23%, shows its wide application. Other IT systems, such as IBM BPM, iGrafix, and Aris, are less popular and are much less widespread (Table 7).

It is worth noting the great interest of enterprises in using the available tools supporting business process management and project management. However, on the other hand, the fact that the same companies do not use the developed and proven methodologies supporting project management are puzzling, and it is possible that new IT tools combining the integration of processes and projects in their assumptions will help in monitoring progress and improving the currently functioning management systems, supporting enterprises in enhancing their job offers or quality of work.

Summary and conclusions

The current Covid-19 pandemic crisis continues, and it is difficult to predict what specific benefits and risks it will bring [Lebovitz, 2020]. The future of project management, and the systems that support it, will undoubtedly require both organizations and individuals to have a wide range of competencies and open-mindedness. Companies that adapt efficiently and quickly to a changing and highly competitive environment through the application of new technologies and the skillful use of employee competencies will build their advantage.

IT tools that integrate knowledge, information, and data about a portfolio of projects, individual projects, and processes (3P) in one place are a great challenge for modern enterprises because of the multitude of functions they provide to their users. However, they are a direct response to the demand coming from the market. Their

functional capabilities allow them to achieve much more significant benefits than IT tools supporting only one of the mentioned areas. Integration of projects and processes, which has long been postulated in scientific works (e.g., by Nowosielski) thanks to the demand and application of IT tools using 3P, is reflected in practice.

The presented research results confirm the great interest of small, medium, and large enterprises in IT tools supporting their management, where over 90% of the surveyed entities use tools available on the market. The most frequently mentioned IT systems surveyed companies are SAP, Adonis, and Microsoft Visio. At the same time, almost 50% of the surveyed enterprises declare that they do not use the available project management methodologies. The results are also confirmed by the research conducted by P. Sliż undertaken in 2019-2020 that the integration of business process management and project management is fragmentary in the Polish enterprises surveyed (Sliż, 2021, p. 242). At the same time, there is a positive correlation between the level of process maturity and the level of design maturity of the surveyed enterprises (Sliż, 2021, p. 232). On this basis, it can be concluded that modern IT systems supporting the process approach provide many amenities but do not meet the expectations of modern enterprises, especially those that deal with many complex projects at the same time. It is possible that the new proposals of IT tools as presented above ISETIA will be a response to the needs of enterprises. It is worth observing this market.

The contemporary development of science towards integrated enterprise management, which combines business process management and project management, shows the need to expand research in this direction while expanding the offer of available IT tools combining these functions.

ORCID iD

Agnieszka Bitkowska: <https://orcid.org/0000-0002-2817-8244>

Małgorzata Waszkiewicz: <https://orcid.org/0000-0002-6758-7104>

Izabela Cimoch: <https://orcid.org/0000-0002-2559-7902>

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Współczesne narzędzia informatyczne wspierające zarządzanie projektami i procesami biznesowymi

Streszczenie

W artykule przedstawiono wybrane narzędzia informatyczne wspierające zarządzanie procesami, zarządzanie projektami oraz nowe rozwiązanie wspierające jednocześnie oba te podejścia. Zaprezentowano podsumowane wyniki badań wykorzystywanych narzędzi IT w przedsiębiorstwach polskich w 2020 roku. Podjęto próbę nakreślenia przyszłych kierunków rozwoju dla rozwiązań wspierających integrowanie procesów i projektów w praktyce gospodarczej. Celem artykułu jest analiza narzędzi informatycznych wspierających przedsiębiorstwa w zintegrowanym zarządzaniu projektami i procesami. Obecnie systemy informatyczne wspierające podejście procesowe dostarczają wielu udogodnień, jednak nie spełniają oczekiwań współczesnych przedsiębiorstw, szczególnie tych, które jednocześnie zajmują się dużą liczbą złożonych projektów. Integracja procesów i projektów realizowana jest w ramach systemów informatycznych w oparciu o tzw. zasadę 3P (Portfolio/Project/Process). Narzędzia informatyczne integrujące w jednym miejscu wiedzę, informacje i dane o portfelu projektów, poszczególnych projektach i procesach są dużym wyzwaniem dla współczesnych organizacji ze względu na mnogość funkcjonalności, jakie udostępniają swoim użytkownikom. Rozwój nauk związanych z zarządzaniem procesami i zarządzaniem projektami oraz praktyczne wykorzystanie osiągnięć w tych obszarach przyczyniło się do rozwoju narzędzi informatycznych wspierających oba podejścia. Obecnie widzimy potrzebę łączenia się tych dwóch trendów w celu uzyskania nowej jakości działania, elastyczności oraz synergii. Zapotrzebowanie na tego typu rozwiązania informatyczne zaczyna wzrastać, jednak na rynku wciąż pojawia się niewiele narzędzi i przedsiębiorstw wykorzystujących takie rozwiązania. Z pewnością trend ten będzie się rozwijał, zmieniał i dostosowywał do szybko zmieniających się warunków otoczenia. Na dziś brakuje kompleksowych badań w ramach integracji procesów i projektów jak również narzędzi informatycznych wykorzystywanych w ramach tych rozwiązań [Sliż, 2021, s. 23-25].

Słowa kluczowe

zarządzanie procesami, zarządzanie projektami, narzędzia informatyczne, PPM/IT, 3P