

**Paula Pyłacz**

<http://orcid.org/0000-0003-1821-8094>  
Czestochowa University of Technology  
paula.pyplacz@pcz.pl

**Janusz Sasak**

<http://orcid.org/0000-0003-0989-3987>  
Jagiellonian University  
janusz.sasak@uj.edu.pl  
DOI: 10.35765/pk.2023.4203.18

## Process Optimization Using RPA as an Element of Change Management in the Organization

### ABSTRACT

Robotic Process Automation (RPA) technology is being used more and more often in small and medium enterprises. This tool is becoming increasingly important in relieving workers from time consuming and boring tasks. The aim of the research was to identify current problems encountered by enterprises when implementing RPA solutions, with particular attention paid to the aspect of change perceived by the employees and the management. As part of the empirical work, monographic research was conducted using the case study procedure in 10 selected small and medium-sized companies operating in Poland. During expert interviews, workers' resistance against changes was noticed as the greatest obstacle in introducing RPA. Workers' lack of knowledge about this technology and its tools and the lack of proper change management in organizations are the main factors which impede implementation of RPA. The core actions to success in implementation of software robots are: building awareness among workers, support of leaders, and monitoring of implementation progress.

**KEYWORDS:** Robotic Process Automation (RPA), enterprise, software robots, processes automation, process optimization

### STRESZCZENIE

Optymalizacja procesów z wykorzystaniem RPA – jako element zarządzania zmianą w organizacji

Technologia Robotic Process Automation (RPA) jest coraz częściej wykorzystywana w małych i średnich przedsiębiorstwach. Narzędzie to nabiera coraz większego znaczenia w odciążaniu pracowników od czasochłonnych i żmudnych zadań. Celem badań było zidentyfikowanie aktualnych problemów

**Suggested citation:** Pyłacz, P. & Sasak, J. (2023). Process Optimization Using RPA as an Element of Change Management in the Organization. © ⓘ *Perspectives on Culture*, 3(42), pp. 253–268. DOI: 10.35765/pk.2023.4203.18

Submitted: 06.04.2023

Accepted: 30.08.2023

napotykanym przez przedsiębiorstwa przy wdrażaniu rozwiązań RPA, ze szczególnym uwzględnieniem aspektu zmiany postrzeganej przez pracownika i kadre zarządzającą. W ramach pracy empirycznej przeprowadzono badania monograficzne z wykorzystaniem procedury studium przypadku w 10 wybranych małych i średnich przedsiębiorstwach działających w Polsce. Podczas wywiadów eksperckich za największą przeszkodę we wprowadzaniu RPA uznano opór pracowników wobec zmian. Brak wiedzy pracowników na temat tej technologii i jej narzędzi oraz brak odpowiedniego zarządzania zmianą w organizacji to główne czynniki utrudniające wdrożenie RPA. Kluczowymi czynnikami sukcesu podczas procesu wdrażania robotów softwarowych są: budowanie świadomości wśród pracowników, wsparcie liderów, monitorowanie postępów wdrożenia.

**SŁOWA KLUCZE:** Robotic Process Automation (RPA), organizacja, robot softwarowy, automatyzacja procesów, optymalizacja procesów

## 1. Introduction

Economic, social and cultural changes, globalisation, and the growing of new technologies are factors forcing changes in companies. Achieving the status quo nowadays is not enough. Indeed, changes are an indispensable element of the activities of a modern organisation and an important element of its activation (Kuzior et al., 2021). Not only managers but all members of the organisation must participate in the changes. At the same time, it should be noted that employees are increasingly willing to participate in the activities of the company. Their approach to work, high qualifications, market factors and new technologies are conducive to the development and improvement of work organisation (Afonasova et al., 2019).

Due to the rapid pace of industrial development, companies are increasingly implementing modern technologies that enable them to make better use of resources. New solutions mean a change both for the entire organisation (process change) but also for the employee, whose role in the process changes. In the last few years, solutions have appeared on the market that are related to the use of specialised software that imitates human work. The application of this technology is called Robotic Process Automation (RPA). It is a concept of software cooperating robots, which are to play the role of a computer operator's assistant. The relatively short period of application and the high price of this type of solutions have made them relatively rare in Polish conditions. There is also a lack of research determining the usefulness of RPA tools in improving business processes. However this technology is being quickly adapted in organizations, so it

is worth to ask a question: “will it be a game changer in process robotization?” The aim of the research was to identify current problems encountered by enterprises when implementing RPA solutions, with particular attention paid to the aspect of change perceived by the employee and the management. The implementation of software robots is a change in the whole process but also a change in work organisation for employees. The objective is applied and serves to understand the circumstances and the course of the phenomenon of implementing RPA solutions in a specific context. It seeks to integrate the conducted case studies into business practice and focuses more on supporting the actions of decision makers than on understanding general theoretical regularities. However, the theoretical aspects are analysed as they are the basis for building concepts for the effective implementation of RPA in organisations.

The first part of the article will present theoretical considerations about RPA and change management. The second part of the article is a presentation of the results of interviews conducted in 10 small and medium-sized Polish enterprises, with an indication of the main areas requiring an analysis on the part of the management so that the implementation of RPA does not cause so much resistance on the part of the employees.

## 2. Robotic Process Automation in Modern Companies

To remain competitive, organisations seek to improve the efficiency of their operations by redesigning and managing their business processes. Information technology (IT) plays a key role in supporting this goal (Al-Gasawneh et al., 2021). Businesses are succumbing to this trend. Of over 900 respondents surveyed in the Forbes Insights/KPMG report [Business transformation and the corporate agenda, 2017], 93% indicated that they are planning, are in the process of, or have just completed a business transformation. Recently, there has been a lot of interest in a specific area of automation in the industry: robotic process automation (RPA). This term combines robotics, referring to software agents acting like workers in system interactions, and process automation (Hallikainen et al., 2018; Syed et al., 2020). Robotic process automation is an intelligent form of automation that aims to transform processes by partially or fully replacing traditional solutions with digital solutions. In particular, it refers to the redirection of repetitive and massive tasks performed by humans (Agostinelli, 2019) to programmed robots that mimic their work (Agostinelli et al., 2019; Berruti et al., 2017; Cewe et al., 2018) and thus relieve the burden on the worker.

Since 2016, there has been a surge in demand for RPA. This growth has been particularly noted in the area of clerical work and operations related

to data modification in management support applications. Today's software robots represent an intelligent and easy-to-use digital workforce that, thanks to new features and integration into the user interface, is able to perform activities previously only performed by humans. RPA is of particular interest to industries that have traditionally been quick to adopt new technologies, in particular process-aware information systems such as banking, insurance, and financial activities (Tarquini, 2018). The application of RPA is also seen and demonstrated in areas such as: telecommunications, business process outsourcing, healthcare, public organisations or education (Willcocks et al., 2017).

Both management theorists and practitioners see RPA as a tool that will bring tangible benefits. Many organisations and researchers see RPA as a new technological solution that increases productivity (Fernandez & Aman, 2018) and operational flexibility, improves quality (Kokina & Blanchette, 2019), reduces costs (Hallikainen et al., 2018) and risks (Burgess, 2018). Not insignificantly, these benefits can be achieved by organisations without the need for IT departments (Asquith & Horsman, 2019) (Willcocks et al., 2017) (Rutschi & Dibbern, 2020) (Cohen & Rozario, 2019; Zhang & Liu, 2019) which is particularly important for small and medium-sized companies. These benefits ultimately translate into the company's employees gaining more time for higher value tasks.

It is assumed that the correct implementation of software robots will allow the creation of process teams based on active collaboration between humans and robots. According to research (Lacity & Willcocks, 2017), humans and robots in such teams complement each other perfectly. The results indicate that the natural purpose of using software robots is to use software that mimics the actions of a computer user, non-invasively to the application, in order to execute business processes. Until now, the concept of software robots has been associated with the construction of large computing centres (robot farms), where applications that performed repetitive tasks were maintained, in multiple locations and in different organisations. This concept was associated with the high price of software and the need to employ numerous programmers to adapt robots to customer requirements. These factors made the use of software robots viable only for large entities and only in situations where they could perform work consisting of thousands of repetitions of the same actions. In this paper, the author deals with solutions that can also be used by small and medium-sized entities. Currently, with the emergence of a new generation of software robots cooperating with humans, it has become possible to universally robotise activities in business processes. Modern collaborative robots are characterised by a relatively low price, in the order of a few percent of the price of robots created on robot farms, and simple learning that does

not require specialist knowledge of the operator. Thus, RPA solutions are solutions that concern employees directly and it is they who must cooperate with the robot – a “colleague” – on a daily basis.

Of course, some risk factors may arise when implementing RPA tools. The most important of these include, among others, the risk of a wrong perception of the whole idea of robotisation, the risk of choosing the wrong approach to robotisation in an organisation, the risk of choosing the wrong tool for robotisation, the risk of using the wrong approach to change management in robotic processes, and the risk of a competence gap (Sobczak & Ziora, 2021). The implementation of software robots is also a change for employees, so there is also a risk of resistance from employees.

### 3. Change Management in Terms of Process Automation

Implementing RPA solutions is a big change in an organisation and should be seen as such. Change can be defined in many ways. A change management model serves as an indicator that can facilitate or guide change activities by identifying specific processes and steps to be undertaken, as well as by illustrating the various factors that influence change (Galli, 2018). Over the years, several change management models have been developed using theories and principles from different disciplines (Errida & Lotfi 2021). This study adopts the definition of Penc (2001), who considers that change is a transformation made by a company in its capacity, structure, way of operating or acting in the market, in order to increase its own efficiency or to adapt to changing conditions in the environment. As with definitions, there are many criteria according to which changes can be classified. A general division of changes specifies permutation and perseveration changes (Mikołajczyk, 2012). In organisations we mainly deal with permutation changes, i.e., changes where the final state differs from the initial state. If the final state is better than the initial state – these are constructive changes, and otherwise – destructive.

There are two approaches to change management. The first is narrow and considers change management as a management method. The second represents the view that change management is a complex process. This approach is broader and combines management theory, methods and techniques of organising work with psychological, sociological, economic and technical knowledge (Errida & Lotfi, 2021). According to Mikołajczyk (2012), change is “an action process, which boils down to taking an action aimed at making a change of a material nature, understood as the result of changing actions.” Similarly, in practice, implementing a new technology is not the same as managing technological transformation in

a company. In the first, narrow perspective, we can talk about improvement rather than management of the change process. The topic of the following discussion will be to analyse change management from a broad – process – perspective. The implementation of RPA solutions are process changes that are introduced to lead to optimisation, i.e., an improvement of process parameters.

The most important element of change management is the human being (Bellantuono et al., 2021), who plays different roles in the change process: as the change promoter, change agent and change addressee. Change promoters are individuals who have formal authority to implement change. Thus, they are the people who make the decisions to implement RPA solutions. Change agents are the people who are responsible for implementing the change, they are often middle management people who are responsible for managing the organisational unit where the main part of the process takes place and where the process owner is located. Often, the change agent is the process owner. The addressee of the change, on the other hand, is the person who, as a result of the introduced change, should change their behaviour or way of acting. In the case of software robot implementations, these are operational employees who work with robots on a daily basis. These are employees whose scope of duties and tasks has changed, because part of the repetitive tasks has been taken over by a robot.

Change in an organisation requires change on the managers' part to: properly prepare the needs for change, the plan for implementing change, the implementation process itself, and the consolidation of change. Also important in the change process itself is knowledge of the factors that determine the successful implementation of the process (Jayatilleke & Lai, 2018). Changes in organisations have different objectives, implementation times are different, and the ways in which the change itself is implemented are also different.

#### 4. Measuring and Evaluating the Effectiveness of Change

Evaluation of the effectiveness of the changes is difficult due to its complex nature as well as the ambiguous perception of the effectiveness of the change by stakeholders. Additionally, in the evaluation of the effects of the conducted changes, the available literature is dominated by critical assessments, which indicate a low level of effectiveness of the conducted transformations (Paszkowski, 2016). Troppa and Smith (2011) conducted a study on the effectiveness of the communication plan inside local government organizations, which are in the process of change, consisting in the consolidation of units of these entities. The study showed that as the number of

organisational changes carried out increases, staff confidence in their success decreases (Armenakis & Burnes, 2015). In this regard, it is noteworthy that the lack of a coherent change management plan within the organisation may lead to a situation where changes are introduced in succession, which subsequently leads the company into a period of endless change, and staff lose confidence in the leaders and their belief in their effectiveness decreases. Quinn and Cameron (2019) accept that change driven by external factors is often forced, which becomes a reason for increasing the pace of change and the risk of resistance, which in turn affects its effectiveness. Identifying the sources and factors of change is important in terms of the need to identify the desirability of change and the metrics to assess its effectiveness, as well as to understand the entire process of carrying out the change. The plethora of literature in this area promotes accuracy in the choice of direction and tools to support the change management process (Entina et al., 2021).

## 5. Methodology

In order to achieve the set objective, it was necessary to conduct own research. As part of the empirical work, monographic research was conducted using the case study procedure in 10 selected small and medium-sized companies operating in Poland.

The research was based on structured expert interviews. It was carried out in two groups: people directly working with software robots in a given process and decision makers, responsible for process performance indicators, including the implementation of RPA solutions. Two interviews were conducted in each organisation, each lasting between 60 and 90 minutes. The interviews were conducted in 10 organisations that were in the process of implementing RPA solutions or have completed implementation within the last 6 months. Due to the fact that some of the companies did not agree to the publication of the company name and data, and also due to the fact that this data is not very important in the article, the author will use the numbering of the companies. The selection of enterprises was purposeful and dependent on their level of implementing RPA solutions, so as to obtain answers to questions related to the implementation itself or the initial time after the implementation. The qualitative data obtained shows what the rationale was for implementing RPA solutions. An important aspect of the research was also to analyse employees' perceptions of the change. Table 1 shows the characteristics of the respondents to the survey, indicating the company as a whole, without distinguishing between individual respondents.

Table 1. Characteristics of respondents in interviews – own research

	Size of the company	Robot implementation stage	Is there only 1 implementation	Did employees participate in the preparation process for robotisation	Was the change management methodology applied
Company 1	Medium	Completed	yes	not	not
Company 2	Medium	Completed	yes	not	not
Company 3	Medium	Completed	yes	yes	not
Company 4	Medium	In progress	yes	yes	not
Company 5	Medium	Completed	yes	not	not
Company 6	Medium	In progress	yes	yes	not
Company 7	Medium	Completed	not	yes	not
Company 8	Small	Completed	yes	not	not
Company 9	Small	Completed	yes	not	not
Company 10	Small	In progress	yes	yes	not

Source: own study.

There were 3 small and 7 medium-sized companies in the study group. All organisations were service-based, from the financial, accounting, auditing industries, and the hollowing out of the software robot concerned a service business process. Three of the surveyed entities were in the process of implementation (at the final stage) and in the remaining seven the implementation had already finished. Only one small business had more than one implementation. This was due to the fact that the idea of RPA solutions is new on the Polish SME market. Referring to the topic of change management, it can be seen that none of the companies used a formalised change management methodology, and only in half of the organisations (five) did employees participate in the process of preparing for RPA implementation.

## 6. Results, findings and discussions

According to Fersht & Slaby (2012), RPA is an imitation of a worker's labour with the aim of automating structured tasks in a fast and cost-effective manner. Analysing the survey responses, the human-robot problem emerged as the biggest implementation obstacle. In six companies



surveyed, work was stopped at the implementation stage by employee resistance. Employees sabotaged the implementation of the software robot solution fearing the consequences it would bring. They drew particular attention to the fear of losing their jobs.

However, managers stressed that during the needs assessment phase, it was the employees who reported the need to be relieved of excessive tasks. The case of company 7 showed that the invoicing process took up a large part of the employees' work. However, during the implementation of the software robot, the workers began to backtrack on their previous findings, indicating that the work they were doing was not time-consuming. A similar situation occurred in company 3, where in order to sabotage the implementation of the software robot, the workers started to change the procedure of the process, arguing that it was necessary to quickly change tasks. This resulted in the robot constantly having to be modified and the scenario of its work changed, thus the completion of the implementation was postponed. The employees reported the situation to the management indicating that the implementation was slowing down work and should be abandoned. In these two situations, the implementation of the software robot failed at the first attempt and only after some time was the concept revisited and the implementation completed. Interviews were conducted after a successful implementation, also analysing previous situations. As can be seen in Table 1, in none of the surveyed companies change management activities were carried out, i.e., the employees were not prepared for the whole process, the exact benefits of the software robot implementation were not presented to them and the employees were not informed how their work situation would look like after the robot implementation. These cases show that the lack of familiarisation of employees with the post-implementation situation and the benefits of working with the software robot caused unnecessary time slippage and generated consultant, licensing and opportunity costs.

As can be seen from Table 1, company 7 had more than one software robot implementation. Problems along the human-implementation line were present in the first implementation, however, the benefits perceived by the employees and the fact that no jobs were reduced allowed for the implementation of further software robot scenarios. However, the solution in company 7 cannot yet be considered a robot farm.

Following the interviews, a comparison was made between the companies in which employees had participated in preparations for robotisation and the other entities. No differences were perceived in the workers' perception of the concept of introducing robots. In all cases, i.e., in the 10 enterprises surveyed, there was more or less concern among workers about the implementation of software robots and this mainly related to

job losses. However, on the basis of the interviews with management, it is difficult to ascertain the level of these fears and the main background. Although the pre-implementation analysis showed employee problems, e.g., excessive workload of employees, eliminating this problem by implementing RPA technology did not translate into implementation efficiency. It is worth noting that it is necessary to combine the pre-implementation process and business analysis with the analysis of employee needs so that both activities are conducted in parallel.

The small and medium-sized enterprises studied have one or more software robot scenarios, so they are not typical top-down robot farms, and therefore the employees have to cooperate with the robot and take care of these solutions. The case of company 1 shows that the lack of a person responsible for the work of updating and upgrading the software robot proved to be a problem. External implementation companies offer help and support in modifying the scenario, but this is both costly and cumbersome. Any change, for example in legislation, requires a change in the robot's scenario. Thus, employees who have to contact an external company have to wait for support for some time, which holds up their work. They feel annoyed, unsatisfied and do not perceive the solution as effective. This is what employees tell the management, arguing that the solution is not efficient and effective. Companies implementing RPA solutions argue that there is no need for programming or IT competences among employees. However, the author's own experience and the case of enterprises 2 and 5 show that if the company's employee can train software robots at least to a basic level, the effectiveness of the actions is much higher. This is due to the speed of changes in scenarios, the ease of understanding the idea of the robot and the ease of explaining to other employees.

From the point of view of those responsible for the implementation of software robots, time and cost indicators prove to be the most important. Decision makers paid particular attention to the pre-implementation process. However, in no case that was a strategy foreseen for further development, a strategy that is formalised and presented to employees. Plans for the implementation of further software robots appeared in the organisations as eight of the companies surveyed found the solution very beneficial. However, none of them had introduced measures to warn the employees that further changes and new software robots would be introduced. Summarising the statements obtained during the interviews, Table 2 indicates the main factors determining the success of the implementation of the RPA tool, which were the most significant in individual companies.

Table 2. The main factors determining the success of the implementation of the RPA tool

	<b>Key factors for successful implementation of the RPA tool</b>
Company 1	Provision of technological and management support by companies implementing RPA Strong leader responsible for implementation of RPA tool
Company 2	Developing criteria for selecting the business processes to be automated.
Company 3	Building awareness of the opportunities and limitations of RPA tools among employees
Company 4	Building awareness of the opportunities and limitations of RPA tools among employees Strong leader responsible for implementation of RPA tool
Company 5	Strong leader responsible for implementation of RPA tool Monitoring of progress in the implementation of robotics by company management
Company 6	Provision of technological and management support by companies implementing RPA
Company 7	Monitoring of progress in the implementation of robotics by company management Provision of technological and management support by companies implementing RPA
Company 8	Strong leader responsible for implementation of RPA tool Monitoring of progress in the implementation of robotics by company management
Company 9	Monitoring of progress in the implementation of robotics by company management Building awareness of the opportunities and limitations of RPA tools among employees
Company 10	Building awareness of the opportunities and limitations of RPA tools among employees

Source: own study.

During the interviews, the respondents also pointed to problems that arose, not only related to the human factor, but they were also:

- Poor organisation of work – robotisation came first, then optimisation;
- Lack of good project justification;
- Lack of proper process management;
- No post-implementation change management element;
- Relevant stakeholders were not involved in the change process;
- Focus only on robotisation, without cooperation with other departments;
- Wrong choice of process to be robotised;
- Insufficient or inadequate communication within the organisation.

## 7. Conclusion, recommendations and limitations

Complex process management, taking into account the specificity of the functioning of modern markets, should take place in every modern organisation that wants to achieve market success. Therefore, it seems reasonable to analyse the topic of using RPA solutions in process automation. Currently, the software robot market is undergoing changes. These changes, combined with a reduction in the price of solutions and a shortage of specialists, mean that the use of RPA will become economically viable even in small and medium-sized enterprises.

Despite the large number of RPA vendors and products on the market, there is still a lot of uncertainty about what RPA means for organisations, as well as uncertainty about how to use the technology successfully. The various guidelines and frameworks offered by vendors and consultants for selecting and implementing RPA solutions do not always provide unbiased information. And this contributes to concerns and hinders the process of implementing change.

The analyses carried out showed that RPA technology is very well perceived in companies that have decided to implement it. However, many implementations have not been fully successful or are still ongoing (deadlines are exceeded). Research shows that the critical element is the human being, who fears solutions that automate their work. The perception of RPA solutions by employees and managers is different. The employee survey shows how employees feel about the change that has taken place – that is, how they perceive their new colleagues who are software robots. A situation in which an electronic colleague appears in the position next to a colleague is already difficult for the employee at this stage. Additionally problematic is the fact that the employee realises that the robot can work 24 hours a day, can work at night without taking up computer equipment, does not make mistakes and is cheaper. Thus, it is a competitor in the labour market and workers fear that they will be replaced by software robots for simple repetitive work. Such employees are usually not expert workers do not have individual unique competence, thus they feel threatened. In order to make the software robot implementation process effective for both the organisation and the employees, the human factor, i.e., the employee, must be taken into account in addition to the optimised process itself. This will result in faster implementation of the software robot, lower implementation costs, less resistance on the part of employees, and faster transition through the process of change. The more so as the implementation of a software robot does not presuppose a reduction of positions. It is a solution that should relieve employees from tedious, repetitive work that generates a lot of errors. Thanks to this they will be able to devote their

time to more creative work and work requiring creative skills. Especially that in all entities at the stage of pre-implementation research it was determined that employees have too many duties at a given position.

Recent years have been a period of very intensive dissemination of RPA tools in enterprises. This is also due to the decrease in prices of RPA solutions on the Polish market. The research conducted as part of the case study presented in this article leads to the conclusion that robotisation is a direction that will develop not only in large units, but also in small and medium-sized entities. Due to acceptable costs, this technology may gain significant market share among small and medium enterprises. Thus, attention should be paid to human factors, and the implementation of software robots itself should be treated as a change that needs to be managed effectively and efficiently. The qualitative research carried out made it possible to identify cases in which implementation activities were stopped or sabotaged precisely by employees.

The author recognises the limitations of the study. She knows that the aim set is applied. The presented conclusions from the interviews, based on case studies, illustrate a certain developing trend. However, they can provide a background for further considerations, including theoretical ones. The field of RPA is not new, but it is not developed in management sciences, hence there are possibilities for its deeper analysis and comparison. The author is conducting in-depth research, comparing it with other countries and companies – she is in the process of exploring the topic.

At the same time, through the conducted survey the author tried to identify factors having biggest influence on RPA perception among its users in small and medium-sized enterprises.

Answering the question of this paper's title – the author is convinced that RPA is the game changer technology not only in practical use but also in management science, which can be noticed through the changes in the publication range of this topic (Pyplacz, 2023).

## REFERENCES

- Afonasova, M.A., Panfilova, E.E., Galichkina, M.A., & Ślusarczyk, B. (2019). Digitalization in economy and innovation: The effect on social and economic processes. *Polish Journal of Management Studies*, 19. DOI: 10.17512/pjms.2019.19.2.02.
- Agostinelli, S. (2019). Synthesis of strategies for robotic process automation. In *CEUR Workshop Proceedings* (Vol. 2400, p. art. 53). CEUR-WS.
- Agostinelli, S., Marrella, A., & Mecella, M. (2019, September). Research challenges for intelligent robotic process automation. In *International Conference on Business Process Management*. Springer, Cham, 12–18.

- Al-Gasawneh, J.A., Anuar, M.M., Dacko-Pikiewicz, Z., & Saputra, J. (2021). The impact of customer relationship management dimensions on service quality. *Polish Journal of Management Studies*, 23(2), 24–41. DOI: 10.17512/pjms.2021.23.2.02
- Armenakis, A.A. & Burnes, B. (2015). Organizational change: A focus on ethical cultures and mindfulness. *Journal of Change Management*, 15(1), 1–7. DOI: 10.1080/14697017.2015.1009720
- Asquith, A. & Horsman, G. (2019). Let the robots do it!—Taking a look at Robotic Process Automation and its potential application in digital forensics. *Forensic Science International: Reports*, 1, 100007. <https://doi.org/10.1016/j.fsir.2019.100007>
- Bellantuono, N., Nuzzi, A., Pontrandolfo, P., & Scozzi, B. (2021). Digital Transformation Models for the 4.0 Transition: Lessons from the Change Management Literature. *Sustainability*, 13(23), 12941. DOI: 10.3390/su132312941
- Berruti, F., Nixon, G., Taglioni, G., & Whiteman, R. (2017). Intelligent process automation: The engine at the core of the next-generation operating model. *Digital McKinsey*, 9.
- Burgess, A. (2018). Associated technologies. In *The Executive Guide to Artificial Intelligence*. Palgrave Macmillan, Cham, 55–72.
- Business transformation and the corporate agenda (2017). Retrieved from: <https://advisory.kpmg.us/articles/2017/business-transformation-and-the-corporate-agenda.html>
- Cewe, C., Koch, D., & Mertens, R. (2017, September). Minimal effort requirements engineering for robotic process automation with test driven development and screen recording. In: *International Conference on Business Process Management*. Springer, Cham, 642–648.
- Cohen, M. & Rozario, A. (2019). Exploring the use of robotic process automation (RPA) in substantive audit procedures. *The CPA Journal*, 89(7), 49–53.
- Entina, T., Karabulatova, I., Kormishova, A., Ekaterinovskaya, M., & Troyanskaya, M. (2021). Tourism Industry Management in the Global Transformation: Meeting the Needs of Generation Z. *Polish Journal of Management Studies*, 23(2), 130. DOI: 10.17512/pjms.2021.23.2.08
- Errida, A. & Lotfi, B. (2021). The determinants of organizational change management success: Literature review and case study. *International Journal of Engineering Business Management*, 13, 18479790211016273. DOI: 10.1177/18479790211016273
- Fernandez, D. & Aman, A. (2018). Impacts of robotic process automation on global accounting services. *Asian Journal of Accounting and Governance*, 9(1), 127–140. DOI: <http://dx.doi.org/10.17576/AJAG-2018-09-11>.
- Fersht, P., & Slaby, J.R. (2012). Robotic automation emerges as a threat to traditional low-cost outsourcing. *Horses for Sources, London*, 1–18.

- Galli, B.J. (2018). Change management models: A comparative analysis and concerns. *IEEE Engineering Management Review*, 46(3), 124–132. DOI: 10.1109/EMR.2018.2866860
- Hallikainen, P., Bekkhus, R., & Pan, S.L. (2018). How OpusCapita Used Internal RPA Capabilities to Offer Services to Clients. *MIS Quarterly Executive*, 17(1).
- Jayatilleke, S. & Lai, R. (2018). A systematic review of requirements change management. *Information and Software Technology*, 93, 163–185. DOI: 10.1016/j.infsof.2017.09.004
- Kokina, J. & Blanchette, S. (2019). Early evidence of digital labor in accounting: Innovation with Robotic Process Automation. *International Journal of Accounting Information Systems*, 35, 100431. DOI: 10.1016/j.accinf.2019.100431
- Kuzior, A., Mańka-Szulik, M., & Krawczyk, D. (2021). Changes in the Management of Electronic Public Services in the Metropolis during the COVID-19 Pandemic. *Polish Journal of Management Studies*, 261–275. DOI: 10.17512/pjms.2021.24.2.16
- Lacity, M., Willcocks, L., & Craig, A. (2017). Service automation: cognitive virtual agents at SEB bank. *The Outsourcing Unit Working Research Paper Series*.
- Mikołajczyk, Z. (2012). *Techniki organizatorskie w rozwiązywaniu problemów zarządzania*. Warszawa: Wydawnictwo Naukowe PWN.
- Paskowski, J. (2016). Zarządzanie zmianą – rozbieżności w teorii i praktyce. *Przedsiębiorczość i Zarządzanie*, 12(7), 137–148.
- Penc, J. (2001). *Kreowanie zachowań organizacji. Konflikty i stresy pracownicze. Zmiany i rozwój organizacji*. Warszawa: Agencja Wydawnicza Placet.
- Pyplacz, P. (2023). Tendencje w badaniach dotyczących robotyzacji procesów biznesowych w naukach o zarządzaniu – systematyczny przegląd literatury – artykuł w recenzji.
- Quinn, R.E. & Cameron, K.S. (2019). Positive organizational scholarship and agents of change. In: *Research in organizational change and development*. Emerald Publishing Limited.
- Rutschi, C. & Dibbern, J. (2020). Towards a framework of implementing software robots: Transforming human-executed routines into machines. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 51(1), 104–128. DOI: 10.1145/3380799.3380808
- Sobczak, A. & Ziara, L. (2021). The Use of Robotic Process Automation (RPA) as an Element of Smart City Implementation: A Case Study of Electricity Billing Document Management at Bydgoszcz City Hall. *Energies*, 14(16), 5191. DOI: 10.3390/en14165191
- Syed, R., Suriadi, S., Adams, M., Bandara, W., Leemans, S.J., Ouyang, C., ... & Reijers, H.A. (2020). Robotic process automation: contemporary themes

- and challenges. *Computers in Industry*, 115, 103162. DOI: 10.1016/j.compind.2019.103162
- Tarquini, T. (2018). Practical robotics in insurance – the future is here already. *The InsurTech Book: The Insurance Technology Handbook for Investors, Entrepreneurs and FinTech Visionaries*, 231–235. DOI: 10.1002/9781119444565.ch52
- Torppa, C.B., Smith, K.L. (2011). Organizational Change Management: A Test of the Effectiveness of a Communication Plan. *Communication Research Reports*, 28(1), 62–73. DOI: 10.1080/08824096.2011.541364
- Willcocks, L., Lacity, M. & Craig, A. (2017). Robotic process automation: strategic transformation lever for global business services? *Journal of Information Technology Teaching Cases*, 7(1), 17–28. DOI: 10.1057/s41266-016-0016-9
- Zhang, N. & Liu, B. (2019). Alignment of business in robotic process automation. *International Journal of Crowd Science*. DOI: 10.1108/IJCS-09-2018-0018

**Paula Pypłacz**, Ph.D. Eng.– research and teaching lecturer at Czestochowa University of Technology, Faculty Management, Department of Management Information Systems. PhD degree in economics, specialization: management sciences. Author of publications in the field of scientific interests, such as: process management; digitization and computerization of processes; RPA; information systems; information and communication technologies (ICT). Trainer in business process mapping using Oracle Business Process Architect tool. Certified BPMN lecturer. Scientific cooperation with universities as: Vytautas Magnus University in Kaunas and Jagiellonian University in Kraków. Reviewer of Polish and foreign scientific publications, such as: Polish Journal of Management Studies, Journal Oeconomia Copernicana, Journal Social Sciences, International Journal of Contemporary Management. Author and co-author of more than 60 scientific publications.

**Janusz Sasak**, Ph.D. Eng – assistant professor – Institute of Public Affairs of the Jagiellonian University. PhD in economics, specialization: management sciences. Author of publications in the field of: process management; digitization and computerization of processes; RPA; information systems; information and communication technologies (ICT), risk management and public governance. Business process mapping trainer using the Oracle Business Process Architect tool. Certified BPMN lecturer. RPA Senior Trainer. Head of an international research team established by the Jagiellonian University and Vytautas Magnus University in Kaunas. Reviewer of Polish and foreign journals.