

Digital transformation of processes
– opportunity or challenge for small and
medium-sized enterprises

EWA MAKOWSKA, PHD

ORCID: [0000-0003-0947-8804](https://orcid.org/0000-0003-0947-8804)

Nicolaus Copernicus University in Toruń
Faculty of Economic Sciences and Management
e-mail: ewa.makowska@umk.pl

Abstract

Objective of the study: The aim of this article is to present the issue of digital transformation of processes in small and medium-sized enterprises (SMEs) in Poland in the context of the opportunities and challenges that this process poses for these entities.

Methodology/research approach/concept of reasoning structure: The primary research material consisted of in-depth standardised interviews conducted with owners or managing directors of five SMEs.

Findings/observations/recommendations: The obtained results indicate that the digital transformation of processes implemented by SMEs represents a manifestation of their competitive struggle in the market. At the same time, they perceive it as a necessity in today's business environment. The introduced technology contributes to noticeable changes in work execution. Simple and repetitive tasks are automated, allowing employees more time to focus on complex tasks requiring in-depth analysis and a creative approach to problem-solving.

Research limitations/implications (if applicable): Due to discrepancies in the processes present in the studied entities and the varying degrees of digitalisation, the main limitation was the difficulty in generalising the results obtained during the qualitative research.



Practical implications (if applicable): The conclusions presented in this article are particularly important in the context of the growing interest in broad digitalisation and automation of business processes. They offer cognitive value and can be utilised in further analyses aimed at improving the quality of business operations.

Original contribution/cognitive value: This article addresses a research gap concerning the digital transformation of processes in SMEs in Poland, specifically in the context of the opportunities and challenges this process presents for these entities. The conducted research aligns with the broader field of studies on the implementation of broadly understood digitalisation and robotics in organisations. Given the significance of the SME sector for the economy and the complexity of the issue discussed, the findings may serve as a basis for further quantitative and qualitative research.

Keywords: digital transformation of processes, digitalisation, small and medium-sized enterprises.

Introduction

The dynamic changes occurring in the economic environment, along with their diversity and mutual interaction, continuously present new challenges for business entities. Additionally, the development of enterprises, the increasing number of transactions they conduct, and the resulting volume of generated data necessitate the constant search for effective solutions and the implementation of organisational and technical changes to improve operational efficiency. Digital process transformation is considered one of the most frequently implemented tools in this regard. This issue is gaining particular importance in light of the European Union's key policies on the digital transformation of enterprises. By 2030, over 90% of SMEs should achieve at least a basic level of digital intensity, while 75% of EU businesses should be using cloud computing services, conducting big data analyses, or applying artificial intelligence (*Digitalisation in Europe – 2023 edition*). To monitor the level of digital intensity in enterprises, the Digital Intensity Index (DII) has been developed. This index measures the extent to which businesses adopt 12 different digital technologies, such as artificial intelligence and e-commerce solutions. Companies are assessed based on the number of digital technologies they utilise. Despite the numerous benefits of digitalisation highlighted in the literature, the implementation of digital process transformation in Polish enterprises remains at a very early stage. According to data compiled by Eurostat and presented in the

Digitalisation in Europe report, in 2022, 37.8% of all enterprises in Poland exhibited a very low level of digital intensity, 33.4% a low level, 25.1% a high level, and only 3.8% achieved a very high level¹.

The issue of digital process transformation in relation to small and medium-sized enterprises (SMEs) remains relatively underexplored and underrepresented in the literature (Remlein et al., 2024, p. 152). Hence, the objective of this article is to address the existing research gap concerning digital process transformation in SMEs. However, it should be noted that the topics of digitalisation and automation are extensively discussed in numerous academic publications and are currently the subject of research conducted by many scholars in Poland and worldwide (Romero, Mammadov, 2024, p. 4). The findings presented in the literature on the application of digital process transformation, robotics, and automation in broadly understood office work cover the following key research areas:

1. The replacement of human labour with machines utilising artificial intelligence, the future shape of the labour market, and its connection to the inevitable advancement of digitalisation (Turcu, Turcu, 2021, pp. 70-75);
2. The development and future of the accounting profession, including perceptions of the profession in the 21st century, discussions on new skills and competencies, as well as challenges and opportunities for future accountants (Hyży et al., 2021; Jędrzejka, 2019, pp. 137-166);
3. The automation of repetitive tasks in accounting and the scope of artificial intelligence application, including in broadly understood accounting (Szortyka, 2024, pp. 155-175), as well as the challenges faced by entrepreneurs in implementing automation and robotics processes (Ciak et al., 2016; Nowakowska, 2023);
4. The use of Business Intelligence tools in data presentation and managerial decision-making (Božič, Dimovski, 2019, pp. 1-20).

The topics discussed in this article are structured into two main sections. The first section presents theoretical considerations related to digital process transformation in enterprises. The second section discusses the results of the empirical study conducted and formulates final conclusions.

¹ A Digital Intensity Index (DII) score in the range of 0–3 indicates a very low level of digital technology adoption by a given enterprise, while a score between 4–6 signifies low adoption. A score of 7–9 represents high adoption, and values from 10 to 12 indicate a very high level of digitalisation. Consequently, the minimum expected basic score of 4 means that a company has achieved a basic level of digital intensity (*Digitalisation in Europe – 2023 edition*).

1. The impact of technology on business development

The technological advancements observed in recent years represent one of the most significant global processes. The time required for new innovations to emerge and become widely adopted is now shorter than ever before (Czupich, 2021, pp. 68-76). Although the primary impetus for the invention and development of the first computers was to perform calculations necessary for exact sciences and to support military and space programs, their use in organisational management has gradually become more widespread. Today, growing attention is being paid to the application of artificial intelligence and robotics (Łada, Martinek-Jaguszewska, 2023; Łada, Martinek-Jaguszewska, 2024, pp. 115-132). Closely related to the latter is robotic process automation (RPA), which is applied to automate business processes. Its practical implementation involves the use of so-called bots, which execute sequences of actions in a predefined order, often across multiple IT systems. These bots are particularly recommended for performing large-scale, repetitive operations with a high degree of stability and standardisation (Łada, 2022, p. 5).

Over the past three decades, the use of information technology has become one of the most crucial factors driving and enabling organisational change (Chrisanthi, 2000, p. 11). The adoption of IT within a company is increasingly seen as an essential element that supports both business operations and the creation of innovation (Camisón & Villar-López, 2014, p. 2898; Mamonov & Peterson, 2021, p. 12). An IT system tailored to efficiently perform business functions has a positive impact on a company's financial performance (Chen et al., 2014, p. 5; Božič & Dimovski, 2019, p. 12). However, some studies presented in the literature highlight a contrasting phenomenon—diminishing returns on IT investment and a reduced impact of IT investments in less technology-driven sectors of the economy (Ravichandran, 2018, pp. 22-42).

Several factors shape the digital transformation process in small and medium-sized enterprises (SMEs). The most significant among them include (Hu et al., 2024, pp. 21-22):

- a) Organisational strategy, which supports the maximisation of a company's strengths and adaptation to new circumstances in an ever-evolving digital landscape;
- b) Critical IT capabilities, which require strategic investment in research and development to strengthen technological foundations;
- c) Organisational culture;
- d) Flexible organisational structures;
- e) Government policies, particularly regulations that set the direction for

- change and provide support and funding for digital transformation efforts;
- f) Intense market competition, which serves as a strong motivator for SMEs to undertake digital transformation.

In the literature, the main barriers to the implementation of digitalisation in small and medium-sized enterprises are identified as the lack of adequate funding opportunities, IT security concerns, insufficient digital skills among employees, a shortage of specialists in the external labour market, internal resistance to change, a lack of managerial knowledge, and uncertainty regarding future digitalisation standards (Rupeika-Apoga, Petrovska, 2022, pp. 4-5). Adopting a gradual digitalisation approach can help overcome these challenges by implementing new digital solutions step by step, starting with the assessment of optimisation opportunities for existing resources and technologies and progressing towards identifying actual needs and defining the scope of investments in new technologies on a small scale. It is crucial that these actions are carried out continuously. The gradual introduction of changes helps transform barriers into enablers for the continuous development of digital awareness within the organisation and the attraction of talent (Sagala, Őri, 2024, p. 17).

In times of rapidly advancing technological progress, automation and robotics are becoming increasingly significant in the accounting profession. The use of modern technologies in accounting (such as accounting software with automation capabilities for specific tasks, big data platforms for data storage and analysis, and blockchain technologies for financial data sharing) significantly enhances efficiency in accounting departments and brings numerous benefits. The literature identifies several advantages of implementing process automation in accounting (Remlein et al., 2024, p. 151), including increased transparency of business processes and improved communication, minimisation of error risks to eliminate mistakes and inconsistencies, and process standardisation, which significantly enhances efficiency and work quality. It is also noted that the digitalisation of accounting processes improves control and data consistency, accelerates data processing, and offers greater flexibility in work arrangements (Borowiec, 2022, p. 24).

2. Analysis of empirical research findings

The literature review has identified a research gap regarding the digital transformation of processes in small and medium-sized enterprises (SMEs) in Poland. To address this gap, the following research question was formulated: Does the digital transformation of processes in SMEs in Poland represent an opportunity or a challenge in the context of the increasing use of modern technologies?

To answer this research question, an empirical study was designed in the form of in-depth standardised interviews. The study targeted enterprises engaged in accounting-related activities and was conducted in the first half of 2024 across five enterprises. The selection of entities for the study was purposive and based on two criteria. The first criterion was the use of broadly understood digitalisation in their business operations, including various applications, software, or platforms. The second criterion concerned the size of the enterprise, as only small and medium-sized enterprises were included in the study. The characteristics of the surveyed entities are presented in Table 1.

Table 1. Characteristics of the surveyed entities.

Lp.	Company size	Organisational and legal form	Scope of operations	Interview participant
1.	Medium	Private limited liability company	International	Managing Director
2.	Small	Private limited liability company	National	Head of IT Department
3.	Small	Limited partnership	National	Head of IT Department
4.	Small	Private limited liability company	National	Managing Director
5.	Small	Private limited liability company	National	One of the partners

Source: own study.

Only one of the surveyed enterprises was a medium-sized company, while the remaining entities were small businesses. Four of the participating entities operated as private limited liability companies, and one was a limited partnership. In terms of the scope of operations, the vast majority of the surveyed companies operated solely at the national level, with only one company also active in the international market. The interviews were conducted with individuals holding managerial positions within the surveyed entities. These included managing directors (in two companies), heads of IT departments (in two companies), and one of the partners.

The research tool used was an interview questionnaire. In addition to introductory questions regarding the characteristics of the surveyed entity, the questionnaire comprised three main sections. The first section focused on identifying the digitalisation solutions implemented in the company, including the reasons for their adoption, observed benefits, as well as any identified drawbacks or difficulties encountered in

their use. The second section covered aspects related to the competencies of employees in accounting-related positions. The final section included discussions on the future of the accounting profession and anticipated challenges or barriers that may arise due to the increasing use of modern technologies.

Based on the responses regarding the scope of modern solutions used in the surveyed enterprises, their application was confirmed primarily in the areas of automatic data extraction from invoices, financial report generation, payment deadline analysis, and document archiving. Only the medium-sized enterprise utilised bots for task execution. The managing director of this company emphasised that these solutions were initially introduced by the parent company. In this firm, workflow automation is an integral part of the overall digitalisation strategy and is directly linked to the company's sustainable development goals. One small enterprise identified the COVID-19 pandemic as the main reason for initiating digitalisation. The company first adopted remote work solutions during the pandemic and gradually increased the share of tasks carried out online. In contrast, the medium-sized company had implemented process automation even before the pandemic, which, according to the managing director, allowed for a seamless transition from on-site to remote work. The international nature of this company's operations also played a significant role, as virtual meetings and communication via platforms such as Skype, Zoom, and MS Teams were essential for collaboration within an international team. The other three small firms indicated that adopting modern technologies was a business necessity and a means of increasing competitiveness. Additional benefits of these solutions included avoiding payment delays, reducing the time required for periodic financial closings, minimising human errors, improving work efficiency without reducing employment, and reallocating employees to more demanding roles. When asked whether the implemented solutions had led to employee layoffs, all companies responded that no such situation had occurred. Any employment changes involved internal staff reassignment rather than reductions. In fact, the surveyed entities generally observed an increased demand for new employees, as modern solutions had led to business expansion. Regarding the disadvantages of modern technologies, respondents primarily pointed to challenges or even risks associated with their implementation. The most significant concerns included the high costs of automation, as well as substantial maintenance, servicing, and upgrade expenses, along with the need to provide adequate hardware. Another crucial issue was ensuring data security. Additionally, companies highlighted employee-related challenges, such as difficulties in training staff and addressing competency gaps.

The questions from the second thematic section focused on employees and their experiences related to the digitalisation of processes within the company. Interview participants confirmed that their employees were eager to adopt modern solutions such as submitting documents exclusively in electronic form, using online services, and issuing e-invoices.

Table 2. Key competencies of employees in an automated environment.

Competencies	Company 1	Company 2	Company 3	Company 4	Company 5
Advanced analytical skills	X	X	X	X	X
High ethical standards	X	X	X	X	X
Ability to interpret tax provisions		X	X	X	X
Willingness to adapt to a changing environment		X	X		X
Problem-solving skills	X				X
Knowledge of IT technologies		X		X	
Interpersonal communication	X			X	
Ability to work effectively in a team	X				
Learning ability			X		

Source: own study.

Table 2 presents a summary of the five most important competencies that, according to respondents, an employee working in an automated environment should possess, considering the hierarchy in which they were indicated.

The responses provided by the interview participants confirm that future employees in accounting departments will be required to have significantly higher competencies than at present. All respondents identified advanced analytical skills and high ethical standards as key competencies for employees in an automated work environment. Four companies also highlighted the ability to interpret tax provisions, which frequently change in Poland and are often complex. Additionally, adaptability to a changing environment and knowledge of IT technologies were commonly mentioned.

Moreover, respondents also pointed to soft skills such as teamwork, problem-solving abilities, and interpersonal communication as valuable competencies.

In response to questions from the third section of the questionnaire, interview participants shared their views on the future of accounting-related professions. On the one hand, young people are interacting with modern technologies on an unprecedented scale in their daily lives, often referred to as the 'AI generation.' For this reason, automation and robotic process implementation in accounting should serve as a strong incentive for them to pursue careers in this field. On the other hand, with the ongoing automation and robotic process implementation in the workplace, concerns about workforce reductions are becoming increasingly prevalent. Consequently, young people considering careers in accounting face a significant risk associated with competition between humans and machines.

The respondents also pointed out the challenges arising from the implementation of digital process transformation in enterprises. One of these challenges is motivating employees to enhance their IT skills. Training in this area is often quite difficult and costly, posing a significant challenge, especially for small businesses. The automation of simple and repetitive tasks also means that employees have more time to focus on solving complex and intricate problems that require an individualised approach. Therefore, this shift necessitates an appropriately tailored motivational system. All the surveyed entities also highlighted the importance of teamwork and the use of brainstorming to tackle difficult and unconventional tasks.

Conclusions

The literature review conducted for this article has helped to define the nature of transformations in the field of accounting in the context of digital process transformation. The analysis of the research findings has also enabled the formulation of interesting final conclusions. First and foremost, both the literature review and the analysis of the conducted interviews indicate that accounting and financial processes exhibit a high propensity for automation. Digital process transformation is perceived positively across all surveyed enterprises as an opportunity for growth. However, only the largest of the surveyed entities considers this process as part of a comprehensive digitalisation strategy. Additionally, digitalisation in this enterprise is associated with activities aimed at sustainable development. The literature suggests that developing a strategy, even for small and medium-sized enterprises, is extremely helpful when implementing modern technologies (Becker, Schmid, 2020, p. 1002; Goerzig, Bauernhansl, 2018, p. 542; Liu et al., 2021, pp. 4-5). The analysis of the interviews also indicates that digital process transformation presents numerous challenges for the surveyed entities. Practitioners predict that robots are already

capable of significantly replacing accounting work, particularly tasks characterised by simplicity, repetitiveness, and a low level of complexity. This could also mean a future decrease in demand for lower-level accounting positions. On the other hand, the requirements for future accountants will undergo significant redefinition. Beyond expertise in bookkeeping and financial reporting, they will need skills in business advisory services and robot operation. Of course, in practice, this means a redefinition of the skillset required of accountants. Above all, they will need to enhance their so-called soft skills and technology-related competencies. Additional anticipated requirements will include working with large datasets and advanced analytical skills. The literature also highlights the challenges arising from these transformations in the field of education related to accounting instruction. Attention is also drawn to the issue of human-machine competition, the risk of skill loss, and knowledge management (Jędrzejka, 2019, p. 137). An interesting research topic would be a comprehensive analysis of the effects of implementing digital solutions in enterprises, considering both financial and non-financial consequences. The outlined issues represent only selected areas that could serve as future research directions in the broad field of digitalisation in accounting.

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