



Impact of Digitalization of Business Processes in Small and Medium-Sized Enterprises

Dănuț-Constantin Filip¹ 

Ion Verzea² 

Nicoleta-Andreea Filip³ 

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Abstract: *Regarding small and medium sized enterprises (SMEs), considering their number and the diversity of services and products offered, they produce huge amounts of added value in the market. In this sense, special attention should be given to this type of organizations regarding the digitalization of processes and management so that they remain sustainable, improve their efficiency and enhance customer experience to greater agility and strategic insights. For that is important to ensure that their business processes are optimized. The objective of this paper is to identify the impact that the digitalization of business processes has on the sustainable development of small and medium-sized enterprises as well as the increase of their competitiveness. For this matter, we set out to highlight the impact that digitized management has on the good management and administration of an SME ensuring healthy development in a highly competitive market.*

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are among the most important social and economic components of a developed society which create jobs, know-how and added value. In recent years, the rapid advancement of digital technologies has transformed the landscape of business operations, compelling SMEs to transform and evolve. Digitalization, defined as the integration of digital technologies into everyday business processes, has emerged as a vital strategy for SMEs to enhance their operational efficiency, improve customer experiences, and maintain competitiveness in an increasingly digital marketplace.

This paper explores the impact of digitalization on business processes in SMEs, focusing on the role of Business Process Management (BPM) as a framework for facilitating this transition. By examining the benefits and challenges associated with digitalization, this study aims to provide insights into how SMEs can leverage BPM to achieve sustainable growth and competitiveness.

2. THE ROLE OF SMEs IN THE ECONOMY

Small and medium sized enterprises (SMEs) represent a significant portion of the global economy, accounting for over 90% of businesses worldwide and contributing to more than 60% of employment. Their diverse range of products and services fosters innovation and competition, making them vital to economic resilience. However, SMEs often face unique challenges, including limited

¹ "Gheorghe Asachi" Technical University of Iasi-Romania, Faculty of Industrial Design and Business Management, Prof. D. Mangeron Blvd., 700050, Iasi, Romania

² "Gheorghe Asachi" Technical University of Iasi-Romania, Faculty of Industrial Design and Business Management, Prof. D. Mangeron Blvd., 700050, Iasi, Romania

³ "Gheorghe Asachi" Technical University of Iasi-Romania, Faculty of Industrial Design and Business Management, Prof. D. Mangeron Blvd., 700050, Iasi, Romania

resources, lack of access to technology, and difficulties in scaling operations. As such, the digitalization of business processes presents both opportunities and challenges for these enterprises.

There are three types of SMEs: the small traditional enterprise that makes goods inherited from past generations, the small enterprise that offers standardized services and the modern enterprise that uses high technology. Twenty percent of new SMEs in affluent nations fail within a year, twenty percent fail within two years, and fifty percent fail within five years. Because of this, just ten percent of SMEs have a chance to stay in business for longer than five years. An economy is seen as effective if it has as many SMEs as possible in the most diverse industries. SMEs enable competition for pricing, product design, and efficiency while also being a source of entrepreneurship skills, innovation, and jobs.

If there are no SMEs, big enterprises become monopolies. SMEs also help big enterprises such as supplying raw materials and parts and distributing products made by them. A study from the US showed SMEs make four times more profit for a dollar invested than big companies (Neagu, 2016).

3. UNDERSTANDING DIGITALIZATION AND BUSINESS PROCESS MANAGEMENT

3.1. Digitalization Defined

A technological trend that is currently changing every aspect of our economy and society is digitalization. It is regarded as a significant and unstoppable force for innovation and disruption that equally challenges both public and commercial institutions. The digital economy is very dynamic and becoming more competitive, impacting all societal and economic sectors. It enables new startup businesses, supported by billions of dollars in venture capital, to use digital technologies to develop innovative value propositions. Their operating paradigms, which are highly scalable, data-driven, and software-centric, are posing an existential threat to established businesses.

Digitalization involves the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It encompasses various aspects, including automation, data analytics, and customer relationship management. For SMEs, digitalization can lead to improved efficiency, reduced costs, and enhanced decision-making capabilities.

3.2. Business Process Management (BPM)

BPM is a methodical technique for improving an organization's workflow's efficacy, efficiency, and flexibility in response to shifting market conditions. It involves the modeling, analysis, design, and optimization of business processes. BPM provides SMEs with a structured methodology to identify inefficiencies and implement digital solutions that can streamline operations and improve service delivery.

Business Process Management (BPM) embodies a management philosophy, which is supported by a range of methods, techniques, and tools.

Fundamentally, BPM is a management concept. When businesses explicitly focus on their business processes from beginning to end, they perform better than when they don't. Any business process can span across different departments, specialisms, geographic locations, management levels, and other organizational boundaries, so it is far from trivial to manage a business process (Reijers, 2021).

3.3. The Intersection of Digitalization and BPM

The integration of BPM with digitalization strategies allows SMEs to create a framework for managing change. By focusing on process optimization and agility, SMEs can better respond to market demands and leverage digital tools to enhance their operational capabilities.

BPM has a strong link to capability development, which builds on the resource-based view of the firm (Pöppelbuß et al., 2015; Trkman, 2010; Van Looy, 2014).

The reason is that processes and capabilities deal with the same phenomenon, the difference being that processes focus more on “how” while capabilities put more emphasis on “what” (Kerpedzhiev, 2021).

Table 1. Key factors regarding BPM that have an impact on SMEs

Core element	Definition
Strategic Alignment	The continual tight linkage of organizational priorities and enterprise processes enables the achievement of business goals.
Governance	Establishing relevant and transparent accountability and decision-making processes to align rewards and guide actions.
Methods	The approaches and techniques that support and enable consistent process actions and outcomes.
Information technology	The software, hardware, and information management systems that enable and support process activities.
People	Individuals and groups who continually enhance and apply their know-how and expertise.
Culture	The collective values and beliefs that shape process-related attitudes and behaviors.

Source: de Bruin and Rosemann (2007)

A recent global study by Gartner confirmed the significance of BPM with the top issue for CIOs identified for the sixth year in a row being the improvement of business processes (Gartner, 2010). While such an interest in BPM is beneficial for professionals in this field, it also increases the expectations and the pressure to deliver on the promises of the process-centered organization.

4. IMPACT AND BENEFITS OF DIGITALIZATION FOR SMEs

Three types of digitalization are specifically taken into consideration: big data analytics, digital value chains, and digitalization in production and logistics. The influence of digitalization on activities varies among SMEs, according to empirical data. Additionally, the consequences of innovation are limited and contingent upon the sort of innovation and the degree of digitalization.

Business choices on the anticipated advantages of digitization have been highly pragmatic and mostly influenced by the state of the economy. Aiming to boost the company’s earnings is one of the primary advantages. An equally significant advantage was the readiness to adjust to the state of the market. The 2020 epidemiological scenario and the push to move important sectors of operation online were closely linked to these kinds of problems.

The next places in the hierarchy of importance are cost optimization and increasing the quality of the products and services offered. The last indicator in particular translates into an increase in customer service standards and an improvement in customer relations (Mittal et al., 2018; Niemeyer et al., 2020).

Table 2. Factors that impact digitalization for SMEs

Reference factor	Medium and long term impact
Improved Efficiency	Digitalization enables SMEs to automate repetitive tasks, reducing the time and effort required for manual processes. This leads to increased productivity and allows employees to focus on higher-value activities.
Enhanced Customer Experience	With digital tools, SMEs can provide personalized services and improve customer engagement. Digital channels facilitate better communication and feedback, enabling SMEs to respond quickly to customer needs.
Data-Driven Decision Making	Digitalization provides SMEs with access to real-time data analytics, enabling informed decision-making. By analyzing customer behavior and market trends, SMEs can identify opportunities for growth and innovation.
Competitive Advantage	Embracing digitalization allows SMEs to differentiate themselves from competitors. By adopting innovative technologies and processes, SMEs can offer unique value propositions and improve their market positioning.
Technology integration	Digitalization has a positive moderating effect in the relationship between internal and external integration, and external integration and SME performance (Amoako et al., 2022).

Source: Own research

Researching and assessing the digitalization of the economy can be done in a variety of ways by looking at the literature on the topic as well as a large number of publications, reports, and studies. Various approaches are suggested, each with a unique set of study requirements. Further considerations should be led by those measures that are used in cyclical research with the use of the DESI index (Rafael et al., 2020).

The analysis of enterprises from the SME sector showed that almost half of the enterprises operate on the basis of action plans not exceeding one or two years. This type of planning was particularly common in micro-enterprises employing up to 10 people and running a service activity. This was partly due to the specific conditions in which economic entities had to operate and the need for quick adjustments to the changing situation (Marcysiak & Pleskacz, 2021).

5. CHALLENGES OF DIGITALIZATION IN SMEs

To succeed, SMEs thinking about applying and implementing digitalization must be particularly aware of the difficulties and implications for their business strategy. Research on business model difficulties that only address value creation, delivery, and capture holistically is lacking.

The business model of an SME is well-adapted to the local ecosystem and builds on the specific conditions in the region of origin (Asemokha et al., 2019; Kolagar et al., 2022).

Table 3. Digitalization challenges for SMEs

Challenges	What does it involve?
Resource Constraints	Many SMEs face limitations in financial and human resources, making it challenging to invest in digital technologies. This can hinder their ability to implement comprehensive digitalization strategies.
Resistance to Change	Cultural resistance within organizations can impede the adoption of digital processes. Employees may be reluctant to embrace new technologies, fearing job displacement or increased workload.
Lack of Expertise	SMEs often lack the technical expertise required to implement and manage digitalization initiatives effectively. This can lead to suboptimal outcomes and hinder the overall success of digital transformation efforts.

Source: Own research

Digital tools are key factors for rapid reconfigurability. Production digitalization can encourage process control on the production line and allow for autonomous decision-making for production equipment, thus aiding in rapid reconfigurability. Digital twin-based tools can support the virtual commissioning of systems before physical reconfiguration, reducing the downtime imposed by the reconfiguration process (Loghin et al., 2023).

6. FUTURE RESEARCH DIRECTIONS

Although digital transformation has been popular for a while, new technologies have increased the significance of this movement. In an effort to become more competitive and digital, businesses are reevaluating their business strategies. To gain a competitive edge, they must contend with a growing number of startups and well-established businesses that are also attempting to stay abreast of developments in digital transformation.

Organizations can pause and determine which strategic techniques are effective in the current climate and where to focus their efforts thanks to digital transformations. For example, companies who are having trouble developing their IT services must decide whether software-as-a-service (SaaS) providers' technologies should replace certain internal old technologies.

Emerging innovations in technology brought about by digitalization, like the Internet of Things (IoT), artificial intelligence (AI), big data analytics, and augmented reality (AR), have an important influence on company activities in the industry as well as on society and the workplace.

The timing of establishing development plans is vital when implementing digitalization in a business. We can only discuss a proper evaluation of the effects of technological improvements after years of planning.

7. CONCLUSION

This study helps SME owners and managers realize how important it is to build internal organizational structures and strengthen ties with outside partners. The results will also help owners and managers capitalize on the effects of digitization to boost operational performance. Digital technology and analytical methods like big data offer new opportunities for designing business models. While there is a growing body of literature on creation, revision, and extension, termination has received less attention, despite being a significant threat. Business model termination can be critical for established firms. Additionally, digitalization is a key driver for reducing production costs and offering services across various industries. However, digitalization can pose a threat to existing companies if they do not address the challenges and underestimate its impact on their business models. The proposed research framework for this field is derived from the results of the systematic literature review and consists of two main dimensions: implementation-oriented towards SMEs and the concept of efficient integration of business processes.

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