



DIGITAL TRANSFORMATION OF SMALL AND MEDIUM BUSINESSES: OPPORTUNITIES FOR ECONOMIC GROWTH

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Article history:	Abstract:
Received: 28 th June 2025	In the modern economy, digital transformation is acquiring the status of a key factor determining the competitiveness of small and medium-sized businesses (SMEs). This article analyzes the theoretical aspects of digital transformation, the tools for implementing digital technologies, as well as their correlation with the dynamics of economic growth. Particular attention is paid to identifying the benefits of the digitalization process, as well as identifying barriers and risks relevant to SMEs.
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The scientific novelty of the article lies in the comprehensive approach to the analysis of the digital transformation of small and medium-sized businesses, including consideration of theoretical foundations, opportunities, barriers and recommendations for overcoming them. Unlike most works focused on individual aspects, the article systematizes international and applied experience, identifies key success factors, formulates practical recommendations based on digital maturity models and offers analytical tables as a tool for further research and support for the digital development of SMEs.

Small and medium-sized enterprises (SMEs) play an important role in the modern economy, being a key driver of employment, innovation and market adaptability, as confirmed by data from the Organization for Economic Cooperation and Development [1]. However, in the context of rapid technological progress and global digitalization, traditional SME business models are constantly facing new challenges, which necessitates their transformation.

Digital transformation is defined as a comprehensive process of integrating digital technologies into the strategy, operations, and organizational culture of an enterprise [2]. This process is aimed not only at improving operational efficiency, but also at expanding market presence, creating new products and services, and optimizing customer interactions [3]. Unlike the targeted implementation of individual technologies, digital transformation involves systemic changes in business processes, which in turn contributes to a significant increase in the competitiveness and sustainability of SMEs.

Digitalization of SMEs acts as a catalyst for economic growth through several key mechanisms:

- increasing operational efficiency. Implementation of cloud solutions, automation of work processes and use of big data analytics allow optimizing internal operations, reducing operating costs and increasing labor productivity [4].

- expansion of market opportunities. The use of digital distribution channels, such as e-commerce and digital marketing, provides access to new markets and customer segments, including international ones [5].

- stimulating innovation. Digital technologies, including artificial intelligence and the Internet of Things, facilitate the accelerated development of new products and services, thereby increasing the adaptability and innovative potential of SMEs [6].

- resistance to external shocks. Companies that have undergone digital transformation demonstrate increased flexibility and the ability to quickly recover in the face of economic and social crises.

Despite the obvious advantages, SMEs face a number of significant barriers when implementing digital solutions:

- limited financial resources. The high level of initial investment in technology and personnel training is often prohibitive for many small businesses [7].

- lack of digital competencies. The lack of qualified specialists and specialized knowledge in the field of information technology limits the possibilities of effective use of digital tools.

- cyber risks and data security. The growth of digital information volumes increases the risks of data leaks and cyber attacks, which requires the development and implementation of reliable cyber defense systems [4].

- organizational inertia. Cultural and organizational barriers, including employee resistance



to change and insufficient flexibility of management structures, slow down the digital transformation process.

The purpose of this article is to analyze the impact of digital transformation on the economic growth of SMEs, as well as to identify key success factors and develop recommendations for overcoming existing barriers.

Digital transformation is a multi-layered process that encompasses technological, organizational, and cultural changes. Unlike traditional automation, which aims to improve the efficiency of individual operations, digital transformation involves a strategic rethinking of the entire business model based on digital technologies.

The technological aspect of digital transformation is associated with the implementation of cloud services, big data processing technologies (Big Data) and artificial intelligence. These solutions allow small and medium-sized businesses (SMEs) to optimize internal processes and make informed management decisions. Cloud technologies provide scalability of IT infrastructure while minimizing capital expenditures, which is critical for SMEs. In turn, big data analysis and analytical tools allow companies to study consumer behavior, predict demand and personalize offers [8].

The introduction of digital technologies necessitates changes in the organizational structure and management processes. In the book "Leading Digital: Turning Technology into Business Transformation" it is written that successful companies integrate digital tools into strategic management, forming new models of interaction with clients and partners [3]. Organizational transformation implies a transition from hierarchical structures to more flexible and adaptive ones, based on data and the ability to quickly respond to market changes.

One of the key factors for the success of digital transformation is the formation of a digital culture, which includes the readiness of employees for continuous learning, the development of innovative thinking and the acceptance of change [7]. Without the transformation of corporate culture, the implementation of technologies remains superficial and does not lead to significant results. Cultural changes are manifested in the development of digital competencies of personnel, the introduction of flexible management methodologies and customer focus as a central element of the business model.

Digital transformation can only be effective if it is deeply integrated into the overall strategy of the company. Researchers emphasize that digital strategy should not be viewed as an auxiliary tool, but as an integral part of business strategy [2]. In this context, it

becomes a source of competitive advantage, providing SMEs with the opportunity to enter new markets and develop innovative products.

Digital transformation offers small and medium-sized businesses a wide range of opportunities to increase productivity, enter new markets, and strengthen their competitive positions. These effects are achieved through the following interrelated mechanisms: technological renewal (cloud technologies, big data, artificial intelligence), rethinking customer interactions, implementing platform business models, and developing digital competencies and management practices.

1. Increased operational efficiency and cost reduction. The implementation of cloud services (IaaS / PaaS / SaaS) helps reduce capital expenditures on IT infrastructure, accelerate the deployment of solutions and provide flexible scaling of resources, which is critical for SMEs with limited budgets. The use of data analytics and (data-driven management management), allows to optimize demand forecasting, inventory planning and pricing, which leads to increased productivity and marginality [9]. Automation systems (RPA/ low-code) and integration of CRM/ERP systems minimize manual operations and the likelihood of errors, which improves the quality of services provided.

2. Expanding markets through e-commerce and platforms. Using digital channels (e-commerce, marketplaces, social commerce) reduces barriers for SMEs to enter regional and international markets by providing access to a broad customer base and payment/logistics infrastructure. Platform ecosystems generate network effects, allowing SMEs to test new products faster, optimize pricing policies, and increase brand awareness.

3. Optimization of customer experience and personalization. Digital marketing tools (CDP, marketing analytics, retargeting) and CRM systems provide the collection and analysis of behavioral data, which allows you to personalize offers, increase customer lifetime value (LTV) and reduce churn. Cross-channel communications (web/applications/ messengers) and self-service systems (chatbots, customer portals) help increase customer satisfaction and service speed.

4. Innovation and development of new digital products/services. Data and artificial intelligence are the source of new value propositions - from predictive services and smart subscriptions to digital additions to physical products. For SMEs, this opens up opportunities for differentiation and creation of additional revenue streams with relatively modest investments.



5. Increased resilience and risk management. Digitalization of sales channels and the transition to remote work formats increase the resilience of SMEs to external shocks by diversifying sources of demand and supply chains. The transition to cloud technologies also

improves the reliability and continuity of services due to built-in redundancy and fault tolerance mechanisms, which, in turn, increases the requirements for cybersecurity and data management.

Table 1 - Key capabilities of digital transformation of SMEs

Opportunity	The main mechanism	Expected impact for SMEs
Reduced costs, increased efficiency	Cloud (SaaS / PaaS / IaaS), automation, systems integration	Less CAPEX/OPEX, faster launch of IT solutions, fewer errors
Entering new markets	E-commerce, marketplaces, digital payments and logistics	Increased reach, export, sales scalability
Revenue Growth Through Personalization	Data Analytics, CRM/CDP, Digital Marketing	Increase LTV, conversion, decrease churn
Innovations and new products	AI/ML, data-driven services, platform models	Differentiation, new sources of income
Shock resistance	Multichannel sales, remote work, cloud infrastructure	Business continuity, flexibility

The digitalization of small and medium-sized businesses is accompanied by a number of barriers, including financial constraints, lack of digital competencies, cybersecurity risks and institutional ones. To overcome them, a comprehensive approach is needed, including financial, educational, organizational and regulatory support measures.

1. Financial support. Lack of financial resources is one of the key barriers to the implementation of digital solutions in SMEs. In this regard, we propose the following measures:

- expansion of state and international programs to subsidize digital transformation;
- provision of preferential loans and grants for the implementation of digital projects;
- stimulation of private investment through tax incentives and other financial instruments [10].

2. Development of digital competencies. The lack of qualified personnel is a significant obstacle. The solution to this problem requires:

- integration of digital disciplines into educational programs at all levels;
- organizing corporate trainings and advanced training programs for employees;
- creation of competence centers and accelerators to support the digitalization of SMEs.

3. Ensure cyber resilience. Cyber threats pose a serious risk to small businesses that do not have

significant resources to protect themselves. Recommended measures include:

- implementation of basic cybersecurity standards (ISO/IEC 27001, NIST CSF);
- use of cloud services with multi-level protection;
- government support through educational campaigns and certification programs in the field of cybersecurity.

4. Organizational changes. Resistance to change within companies slows down the digitalization process. To overcome this barrier, it is necessary to:

- formation of a culture of innovation;
- active participation of management in promoting digital initiatives;
- using an incremental approach («small steps») to reduce risks and organizational inertia.

5. Regulatory and institutional support. Gaps in the regulatory framework can hinder digitalization, especially in the area of e-commerce. To address this issue, it is recommended to:

- harmonization of standards in the field of data protection and cybersecurity at the international level;
- simplification of administrative procedures for conducting digital business;
- formation of national digital ecosystems and platforms focused on the needs of SMEs.

Table 2 - Barriers and recommendations for overcoming them

Barrier	Recommendations
Financial constraints	Subsidies, preferential loans, tax breaks
Digital skills gap	Educational programs, corporate trainings, competence centers
Cyber threats	Security standards (ISO/IEC 27001), secure cloud services, certification programs



Resistance to change	Leadership, innovation culture, gradual implementation steps
Fragmentation of regulation	Harmonization of standards, simplification of procedures, digital ecosystems

Thus, digital transformation is positioned as an important factor contributing to increased competitiveness and economic growth of small and medium-sized businesses (SMEs). The implementation of digital technologies allows optimizing operational efficiency, expanding market presence, stimulating innovative activity and strengthening the sustainability of enterprises. Successful implementation of the digitalization process requires the development of a strategic approach, comprehensive integration of technologies into business processes and systematic development of digital competencies of personnel.

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