



WHY SMALL BUSINESSES FAIL AT DIGITAL TRANSFORMATION — AND HOW TO FIX IT

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Abstract: *Despite contributing up to 70% of global employment and GDP, small and medium-sized enterprises (SMEs) face serious challenges in the digital transformation process. Research indicates that 70% of digital transformation projects fail, and according to Bain & Company's 2024 analysis, this figure may reach as high as 88%. This article analyzes the key barriers to digital transformation in SMEs — including financial constraints, lack of technical skills, organizational inertia, infrastructure deficiencies, and cybersecurity risks — based on reports and statistical data published between 2020–2025 by international organizations such as OECD, McKinsey, World Economic Forum, and Bain. The findings demonstrate that investing in technology alone is insufficient for successful digital transformation — a comprehensive approach*

combining financial support, improved digital literacy, and strategic leadership is required.

Keywords: *digital transformation, small and medium enterprises, digitalization barriers, digital strategy, business innovation, organizational change, digital economy*

Introduction

By the second decade of the twenty-first century, digital technologies have fundamentally transformed the global business environment. Cloud computing, artificial intelligence, big data analytics, the Internet of Things (IoT), and automation have become the primary instruments for enhancing enterprise efficiency. The global digital transformation market was valued at \$1,316.62 billion in 2025, with a projected compound annual growth rate (CAGR) of 28.5% from 2025 to 2030 [4]. Furthermore, global spending on digital transformation reached \$2.58 trillion in 2025 and is expected to reach \$3.9 trillion by 2027 [4].

Small and medium-sized enterprises (SMEs) occupy a special place in this process of change. SMEs contribute up to 70% of global employment and GDP [5]. Despite this enormous economic potential, 67% of SMEs and mid-sized businesses are currently struggling for survival — a situation largely linked to difficulties in adapting to digital transformation [5]. While the necessity of digital transformation is equally important for large and small enterprises alike, its implementation remains a highly complex and risky process for SMEs. According to McKinsey, the failure rate of digital transformation projects reaches 70% — a result primarily stemming from excessive focus on the direct impact of technology on performance while neglecting the human factor [1]. Even more alarming, Bain & Company's 2024 analysis reveals

that 88% of business transformations fail to achieve their original ambitions [2].

According to a 2024 survey of senior leaders, the complexity of the current environment (32%), lack of technical expertise (27%), and high costs are identified as the primary challenges [6]. In the field of cybersecurity, the situation is also becoming more acute: according to the ISC2 2024 Cybersecurity Workforce Study, global demand for cybersecurity professionals stands at 10.2 million, yet only 5.5 million professionals currently exist, creating a shortage of 4.8 million specialists [7].

In the European Union, the rate of digital technology adoption among SMEs stands at 58%, lagging 30 percentage points behind the EU's 2030 target, while large enterprises stand at 91% [8]. Existing scientific literature frequently studies digital transformation through the lens of large corporations, leaving the specific challenges of SMEs insufficiently explored. This article is aimed precisely at filling this scholarly gap — systematically analyzing the key barriers to digital transformation in SMEs based on international sources and proposing practical strategic solutions.

Research Materials and Methodology

This study is based on the method of systematic analysis of existing scientific literature and statistical data from international organizations. Rather than collecting primary experimental data, the study relies on secondary sources with high credibility — peer-reviewed articles published in international scientific journals, reports from international organizations, and large-scale empirical studies.

Criteria for source selection. Materials included in the study were required to meet the following criteria: first, published between 2020–2025; second, published by an internationally recognized organization or scientific journal; third, directly relevant to the topic of SMEs and digital transformation; fourth, containing quantitative indicators or statistical data. Sources dated beyond 2025 were excluded to maintain consistency with verifiable publication records.

Primary sources used. The study draws on data from the following international organizations and scientific platforms: OECD (Organisation for Economic Co-operation and Development) — D4SME 2024 and 2025 surveys [3, 9]; McKinsey Global Institute — research on digital transformation effectiveness and AI trends [1, 6]; World Economic Forum — report on SME opportunities and digitalization [5]; Bain & Company — 2024 business transformation analysis [2]; ISC2 — 2024 global cybersecurity workforce study [7]; Springer Nature Journal of Innovation and Entrepreneurship — fuzzy logic study covering 4,531 SMEs [10]; Eurostat — digital maturity indicators for EU SMEs [8].

Method of analysis. Data were processed through thematic analysis. Each source was evaluated across the following three directions: factors hindering digital transformation in SMEs; factors promoting digital transformation; recommended strategies for successful transformation. Only statistical indicators confirmed by multiple sources and supported by credible organizations were included in the final analysis. Speculative or unsourced data were strictly avoided.

Research Results

This section systematically analyzes five key barriers to digital transformation in SMEs based on international sources.

Financial Constraints. The lack of financial resources is consistently identified across all studies as the primary obstacle to digital transformation in SMEs. Unlike large enterprises, SMEs often face acute financial limitations, inadequate technological infrastructure, gaps in digital workforce skills, and limited institutional support [11]. Financial resource insufficiency has been consistently identified as a major barrier to the adoption of digital technologies by companies. Budgetary limitations restrict digitalization opportunities and impede progress in digital transformation. Moreover, financial constraints do not act alone — they also exacerbate other barriers such as skill shortages and cybersecurity challenges [10]. The high level of initial costs — such as setting up advanced systems or purchasing software licenses — represents a primary financial obstacle for SMEs. Limited financial capital and IT infrastructure make it difficult both to invest in new technologies and to hire specialized staff [12].

Digital Skills and Talent Shortage. According to a KPMG study, 36% of organizational leaders are concerned that their workforce lacks the skills necessary to support digital transformation. TEKsystems' 2024 report further indicates that 27% of senior leaders identify lack of technical expertise as the primary obstacle to achieving transformation goals [6]. SMEs frequently operate under severe resource constraints — manifested as limited capital, absence of in-house technical expertise, and low digital literacy among owners and employees [13]. SME leaders should be the primary driving force behind digital transformation; however, many SME leaders lack the digital literacy or strategic vision needed to champion such initiatives [14].

Organizational Inertia and Cultural Resistance. SMEs often have deeply rooted traditional operational practices that resist change, making it challenging to introduce digital innovations. Organizational resistance to digital transformation can stem from a lack of understanding of the benefits of digital tools, fear of disruption to established workflows, or a general aversion to change among management and employees. This cultural inertia not only slows down the adoption of digital technologies but also hampers the innovation potential of SMEs [14]. SMEs are frequently hindered by rigid organizational structures and cultures that do not experiment with cutting-edge technologies and lack networking opportunities. They also tend to lack leadership guidance and prioritization, bringing uncertainty about digital transformation's potential gains and implications [15].

Infrastructure Challenges and the Digital Divide. SMEs face barriers including limited financial and human resources, inadequate access to essential infrastructure, and the absence of long-term vision and strategies regarding data management, privacy protection, and cybersecurity [5]. More than one in five companies identifies the unavailability of high-speed internet at their location as a key issue affecting their digitalization satisfaction [9]. According to Eurostat data, the rate of digital technology adoption among EU SMEs stands at 58%, lagging 30 percentage points behind the EU's 2030 target of 90%, while large enterprises have already reached 91% [8]. This gap underscores the structural disadvantage SMEs face relative to their larger counterparts.

Cybersecurity Risks. The digitalization process also exposes SMEs to new cyber risks. According to 2024 data, 40% of small businesses with fewer than 250 employees suffered at least one cyberattack, with

the median cost of all cyberattacks for US SMBs standing at \$16,000 [7].

Furthermore, 43% of all cyberattacks target small businesses, and 82% of ransomware attacks are directed at small businesses [16]. Additionally, 60% of small businesses are forced to cease operations within six months following a cyberattack [16]. Many SMEs lack sufficient awareness of the severity and complexity of cybersecurity threats. According to the Eurobarometer report, 44% of cybercrimes experienced by SMEs go unreported [17].

Discussion

This section proposes strategic solutions for each of the five key barriers identified in the Results section and discusses the general conditions for successful digital transformation.

Solutions to Financial Barriers: Phased and Cloud-Based Approach. Although financial constraints represent the most severe barrier for SMEs, effective ways to overcome this challenge exist. The most effective approach for SMEs is to start with low-cost, scalable technologies that address specific pain points — such as cloud-based accounting software or customer relationship management (CRM) tools. This approach focuses on incremental improvements rather than attempting an all-encompassing overhaul, minimizing risk and ensuring smoother implementation [12]. According to Gartner, worldwide end-user spending on public cloud services is projected to reach \$723.4 billion in 2025, up from \$595.7 billion in 2024 — a 21.5% increase [4]. Government support also plays an important role. The UK Government established the industry-led SME Digital Adoption Taskforce in April 2024 to support small businesses in adopting basic productivity-

enhancing digital technologies, including cloud computing, customer relationship management, and resource planning software [18].

Solutions to Digital Skills Shortages: Employee Training and External Collaboration. Key strategies for successful digital transformation include investing in employee digital skills and fostering a culture of innovation. Leveraging external support — partnerships, platforms, and government initiatives — as well as building agility through continuous improvement are of critical importance [12]. According to a 2024 ActiveCampaign survey, 82% of surveyed businesses found AI to be especially effective at content creation, saving them time and financial resources that could be directed elsewhere [19].

Solutions to Organizational Culture and Leadership Challenges. Organizations with a culture that values innovation, learning, and risk-taking are more likely to achieve positive outcomes from their digital initiatives. Developing a culture of openness and experimentation has been identified as a critical factor in overcoming resistance to change and driving successful digital transformation [20]. Digital literacy and effective change management are crucial enablers of digital transformation, ensuring that both leaders and employees can navigate the challenges and opportunities it presents [14].

Solutions to Infrastructure Challenges: Collaborative and Ecosystem Approach. Openness to external collaboration — through formal partnerships, innovation ecosystems, or informal peer networks — leads to better digital transformation outcomes for SMEs. Through collaboration, SMEs can learn best practices, avoid common pitfalls, and potentially even influence the development of technologies to better suit their needs [12]. Digital ecosystem readiness and local government

support are essential enablers for the adoption of Industry 4.0 technologies among SMEs. Internal organizational factors such as digital infrastructure, processes, digital managers, and management orientation toward organizational change are also identified as key catalysts in SME digital transformation [21].

Solutions to Cybersecurity Risks. Addressing cybersecurity risks requires SMEs to adopt a proactive, layered approach. At minimum, SMEs should implement multi-factor authentication (MFA), maintain regular offline data backups, apply timely software patches, and conduct periodic cybersecurity awareness training for all employees. These measures are low-cost but significantly reduce exposure to common threats such as phishing and ransomware.

Global SMB cybersecurity spending is projected to reach \$109 billion by 2026, growing at a compound annual rate of 10% [7]. This figure signals that SMEs are paying increasingly greater attention to cybersecurity. Governments and industry bodies can further support SMEs by providing subsidized cybersecurity audits, sector-specific threat intelligence sharing platforms, and accessible incident reporting mechanisms — since 44% of cybercrimes experienced by SMEs currently go unreported [17].

General Conditions for Successful Digital Transformation. Research demonstrates that digital transformation is not merely a technological investment — it is a comprehensive strategic process. According to Deloitte's 2025 data, nearly three-quarters of organizations report that their most advanced generative AI initiatives are meeting or exceeding return-on-investment expectations [6]. Companies with strong digital and AI capabilities earn two to six times higher shareholder

returns compared to lagging competitors across every sector studied [1].

Furthermore, according to global surveys, an average of 63% of executive respondents reported a positive impact in terms of profitability or performance from digital transformation efforts over the past 24 months [6]. This confirms that digital transformation is not merely a process, but the foundation of long-term competitiveness.

Conclusion

This study analyzed the reasons for the failure of digital transformation in small and medium-sized enterprises (SMEs) and the ways to overcome them, based on international sources. The results demonstrate that the failure of 70% to 88% of digital transformation projects is not a coincidental phenomenon — it is the result of systemic problems. The five key barriers identified throughout the study — financial constraints, digital skills shortages, organizational inertia, infrastructure challenges, and cybersecurity risks — are closely interconnected and must be addressed not separately, but through a comprehensive approach. Financial constraints not only limit investment in digital technologies but also exacerbate skill shortages and cybersecurity challenges — therefore, the necessity of developing a multi-faceted strategy for SMEs is increasingly growing [10]. During the COVID-19 pandemic, enterprises that had adopted digital tools were better equipped to navigate disruptions, maintain operational continuity, and identify new opportunities [22]. This situation once again confirms that digital transformation is not merely a tool for growth, but the foundation of organizational resilience. Financial constraints can sometimes stimulate frugal innovation, enabling enterprises to improve their performance and invest more in digital transformation —

demonstrating the dynamic relationship between barriers and opportunities [11].

This study concludes with a series of practical recommendations. For SME leaders: viewing digital transformation as a holistic strategic process, starting with a phased approach, and continuously investing in employees' digital literacy are recommended. For governments and policymakers: developing targeted financial support mechanisms for SMEs, advancing digital infrastructure, and creating specialized cybersecurity programs are necessary. For researchers: further in-depth investigation of the socio-economic impact of digital transformation, taking into account the specific context of SMEs, remains an important direction for future research.

In conclusion, there is a tendency to view digital technology as an opportunity or choice. However, the mounting pressures of a rapidly-shifting business landscape are turning digital technology from a choice into a necessity — the longer it is delayed, the more marginalized an enterprise becomes [6].

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