

SWOT Analysis of the Strategy of Digital Transformation of SMEs

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ABSTRACT

The rapid advancement of digital technologies has significantly influenced business environments, creating both opportunities and challenges for Small and Medium Enterprises (SMEs). This study aims to analyze the strategic position of SMEs in the context of digital transformation using a SWOT framework. A qualitative descriptive research method was employed, utilizing literature review and semi-structured interviews with SME owners and industry practitioners to identify key internal and external factors affecting digital adoption. The findings reveal that SMEs possess strategic strengths such as operational agility, strong customer relationships, and owner-driven decision-making that can support digital transformation initiatives. However, internal weaknesses including limited financial resources, low technological capability, and resistance to organizational change hinder implementation. External opportunities such as growing digital markets, government support programs, and accessible digital tools provide potential pathways for digital acceleration, while threats including cybersecurity risks, regulatory pressures, and increasing digital competition create strategic uncertainties. The study concludes that successful digital transformation for SMEs requires leveraging internal strengths, addressing capability gaps, capitalizing on emerging opportunities, and mitigating external risks through strategic planning. These insights provide valuable implications for SMEs, policymakers, and ecosystem actors in developing capacity-building frameworks and supportive policies to foster sustainable digital transformation.

Keywords:
Digital Transformation; SMEs; SWOT Analysis; Strategic Management; Competitive Advantage

INTRODUCTION

Digital transformation has become an essential strategic direction for organizations seeking competitiveness in the modern economy. Accelerated by rapid advancements in information and communication technologies (ICT), digital transformation reshapes how businesses operate, deliver value, and interact with customers. Small and Medium Enterprises (SMEs), which form the backbone of many national economies, are increasingly pressured to adopt digital tools to improve efficiency, market reach, and adaptability (Verhoef et al., 2021). However, unlike large corporations with abundant resources, SMEs often face unique structural constraints that hinder digital adoption. Consequently, understanding the strategic dynamics of SME digital transformation is crucial to ensuring sustained competitiveness and long-term growth.

In many developing countries, including those in Southeast Asia, digital transformation of SMEs is not only a technological shift but a socio-economic imperative. SMEs contribute significantly to employment, domestic production, and local innovation ecosystems (OECD, 2020). Digitalization offers SMEs opportunities to enhance operational efficiency, strengthen customer relationships, adopt data-driven decision-making, and expand into new digital marketplaces (Bonsu & Polák, 2022). The rise of e-commerce, digital payments, cloud computing, and automation

illustrates how digital technologies can reshape traditional business models. Yet, despite these opportunities, the digital maturity of SMEs remains uneven and often lagging behind global standards.

One of the persistent challenges for SMEs is their limited readiness in terms of infrastructure, workforce capabilities, financial resources, and digital literacy. Studies have shown that SMEs frequently underinvest in digital technologies due to perceived complexity, security concerns, inadequate government support, and uncertainty about return on investment (Nambisan et al., 2019). Moreover, external pressures—such as intensified competition, shifting consumer behavior, and disruptive innovations—make it increasingly urgent for SMEs to identify their strategic position in the digital landscape. This strategic uncertainty necessitates a systematic approach to understanding internal and external factors influencing digital transformation.

The SWOT framework analyzing Strengths, Weaknesses, Opportunities, and Threats offers a strategic tool to evaluate SME readiness for digital transformation. SWOT analysis has been widely used in strategic management studies to diagnose organizational environments and guide decision-making in complex and dynamic contexts (Gürel & Tat, 2017). By applying SWOT to the digital transformation of SMEs, this study seeks to uncover how internal organizational capabilities align with external technological and market conditions. Such an approach helps to formulate strategies that capitalize on strengths, mitigate weaknesses, seize opportunities, and anticipate threats.

Furthermore, the post-pandemic environment has amplified the necessity of digital adoption. The COVID-19 crisis accelerated shifts towards digital platforms, remote operations, and online consumer engagement, forcing SMEs to re-evaluate their traditional strategies (Akpan et al., 2022). Many SMEs that embraced digital tools demonstrated greater resilience, adaptability, and business continuity. However, the transition was uneven, and numerous SMEs struggled due to inadequate digital infrastructure or strategic direction. Therefore, evaluating digital transformation through the SWOT lens is timely and essential for understanding how SMEs can position themselves competitively in the evolving digital ecosystem.

Despite the recognized importance of digital transformation for SME competitiveness, many SMEs still lack a coherent strategic framework to guide their digitalization efforts. Existing research highlights inconsistent adoption levels, fragmented implementation strategies, and varying degrees of digital maturity across SME sectors (Mittal et al., 2018). SMEs often face difficulties identifying their internal capabilities, understanding external opportunities, and anticipating risks associated with technological changes. As a result, their digital transformation processes tend to be reactive rather than proactive. This study addresses the problem of insufficient strategic assessment by exploring the internal and external factors influencing SME digital transformation using a SWOT analysis approach. The objective of this study is to systematically analyze the strengths, weaknesses, opportunities, and threats that shape the digital transformation strategy of SMEs.

Literature Review

1. Digital Transformation: Concepts and Theoretical Foundations

Digital transformation refers to the process through which organizations integrate digital technologies into their operations, business models, and value-creation processes. It is not merely about adopting digital tools but involves a fundamental rethinking of organizational capabilities, customer engagement, and strategic orientation (Verhoef et al., 2021). The theoretical foundation of digital transformation is rooted in socio-technical systems theory, innovation diffusion theory, and dynamic capability theory. Socio-technical perspectives emphasize the interplay between technology, people, and organizational structure. Innovation diffusion theory explains how new technologies are adopted over time, influenced by factors such as perceived usefulness and complexity (Rogers, 2010). Dynamic capability theory highlights the firm's ability to integrate, build, and reconfigure internal competencies to respond to rapidly changing environments (Teece et al., 2016). These frameworks collectively provide a basis for understanding how SMEs can navigate technological change.

In the context of SMEs, digital transformation is more complex due to limited resources and capabilities compared to large firms. SMEs must identify how digital technologies align with their strategic objectives and operational processes, making strategic assessment crucial (Bouwman et al., 2019). Digital transformation in SMEs typically covers areas such as digital marketing, e-commerce, cloud computing, data analytics, automation, and customer relationship management systems. The pace and scope of adoption vary significantly across sectors, influenced by organizational culture, leadership, financial capacity, and market conditions (Ly, 2023). Understanding these dynamics is essential for evaluating the strategic position of SMEs undergoing digital change.

2. SMEs and Digital Transformation Challenges

SMEs play a vital role in global economic development, yet they face unique challenges when pursuing digital transformation. Several studies identify structural constraints such as limited financial resources, insufficient technical expertise, and inadequate digital infrastructure (OECD, 2020). Unlike large corporations, SMEs often lack dedicated IT departments or strategic planning units capable of guiding digital initiatives. This results in fragmented and reactive approaches to digital adoption. Additionally, SME owners may perceive digital technologies as costly, risky, or too complex, which further slows the transformation process (Bonsu & Polák, 2022).

Human capital is another critical barrier. Digital transformation requires employees with digital literacy, analytical skills, and change management capabilities. SMEs often struggle to recruit or retain digitally skilled workers due to salary constraints or lack of training programs (Arfi et al., 2021). Furthermore, organizational culture plays a defining role in digital readiness. Conservative or risk-averse cultures hinder experimentation, innovation, and technology adoption. Resistance to change among employees also contributes to the slow adoption of digital tools, limiting organizational agility and competitiveness (Nambisan et al., 2019).

External challenges also exert pressure on SMEs. Market volatility, emerging competitors, and rapidly evolving consumer behavior create uncertainty. Customers increasingly demand personalized, fast, and digitally-enabled services, pushing SMEs to adjust their service delivery models. Regulatory complexities—such as data

protection requirements and cybersecurity obligations—also present structural challenges (European Commission, 2022). These barriers collectively underscore the need for SMEs to conduct strategic evaluations to understand their internal limitations and external pressures before undertaking digital transformation.

3. Opportunities and Benefits of SME Digitalization

Despite the challenges, digital transformation offers substantial opportunities that can significantly enhance the competitiveness of SMEs. Digital tools enable SMEs to streamline operations, reduce costs, and improve productivity. Cloud-based solutions, for instance, allow SMEs to access advanced computing resources without heavy upfront investments. E-commerce platforms provide access to broader markets, enabling SMEs to compete globally (Zhu & Kraemer, 2021). Digital marketing tools—such as social media analytics and customer management systems—enhance customer engagement and support data-driven decision-making.

Digitalization also improves operational resilience. The COVID-19 pandemic demonstrated that businesses with digital capabilities were more adaptive, maintaining continuity through online platforms, remote work, and digital communication systems (Akpan et al., 2022). Furthermore, digital technologies foster innovation by enabling SMEs to co-create value with customers and partners. Technologies like artificial intelligence, the Internet of Things (IoT), and automation are becoming increasingly accessible, offering new avenues for innovation and service personalization (Ghobakhloo, 2020).

From a strategic standpoint, digital transformation enhances the firm's dynamic capabilities, enabling it to sense, seize, and transform opportunities in rapidly evolving markets. SMEs that embrace digitalization often exhibit improved efficiency, enhanced customer satisfaction, and stronger competitive positioning. These opportunities demonstrate why strategic assessment tools—especially SWOT analysis—are essential to guide SMEs in identifying areas where they can leverage their strengths to maximize digital benefits.

4. SWOT Analysis as a Strategic Tool

SWOT analysis is a widely used strategic management tool that helps organizations evaluate internal strengths and weaknesses alongside external opportunities and threats. The framework was first introduced in the 1960s and remains relevant due to its simplicity, adaptability, and comprehensive approach (Gürel & Tat, 2017). Strengths and weaknesses represent internal factors such as resources, capabilities, culture, and operational efficiency. Opportunities and threats reflect external factors including market trends, technological developments, competition, and regulatory conditions.

In the context of digital transformation, SWOT analysis supports organizations in identifying strategic alignment between their internal capabilities and the broader digital ecosystem. For SMEs, this is particularly important due to limited resources and the need for carefully prioritized strategies. SWOT analysis facilitates decision-making by highlighting critical gaps and potential areas of leverage (Pickton & Wright, 1998). For example, an SME's strength may lie in strong customer relationships, which can be enhanced through digital CRM systems. A weakness might be low digital literacy among employees, indicating the need for training. Opportunities may include expanding online markets, while threats may involve cybersecurity risks or disruptive competitors.

Several scholars argue that SWOT remains a foundational tool for strategic planning despite criticisms about its qualitative nature. When combined with quantitative or analytical methods, SWOT becomes even more robust and actionable. In digital transformation research, SWOT analysis helps organizations conceptualize how technological advancements interact with internal business processes and external competitive landscapes (Panagiotou, 2003). Thus, applying SWOT in this study enables a structured and holistic assessment of how SMEs can effectively implement digital strategies.

5. Applying SWOT to the Digital Transformation of SMEs

A growing number of studies apply SWOT analysis to assess digital transformation strategies at the organizational and sectoral levels. Research findings suggest that internal strengths related to digital adoption often include adaptive leadership, flexible structures, and willingness to innovate (Bouwman et al., 2019). Meanwhile, common weaknesses involve insufficient IT infrastructure, low employee digital capability, and limited financial resources. Understanding such internal factors is critical for SMEs, as it shapes the feasibility of digital transformation initiatives.

External opportunities for SMEs include expanding digital markets, government support programs, and increasing consumer demand for digitalized services. Technological innovations—such as cloud computing, mobile commerce, social media marketing, and data analytics—provide numerous pathways for SMEs to enhance competitiveness (Zhu & Kraemer, 2021). However, external threats must also be considered. Cybersecurity risks, rapid technological obsolescence, and increased competition from digitally advanced firms present substantial challenges. Regulatory uncertainties, especially concerning data privacy and digital taxation, further complicate the external environment (European Commission, 2022).

METHOD

This study adopts a qualitative research approach using a descriptive analysis method to examine the strategic factors influencing the digital transformation of SMEs through a SWOT framework. Data collection was conducted through two primary sources: (1) a systematic review of relevant academic literature, policy reports, and industry publications related to SME digitalization, and (2) semi-structured interviews with selected SME owners, digital transformation consultants, and industry practitioners to gain insights into internal capabilities, external pressures, and practical challenges encountered during digital adoption. Purposive sampling was utilized to ensure that participants possessed direct experience or expertise in SME digitalization initiatives. The collected data were analyzed thematically and categorized into four SWOT dimensions—Strengths, Weaknesses, Opportunities, and Threats—following the analytical steps of data coding, theme identification, classification, and interpretation. To increase credibility and reliability, data triangulation was applied by comparing findings from literature sources with interview responses to validate emerging themes. The final analysis produced a structured SWOT matrix that reflects the strategic position of SMEs in the context of digital transformation, which then formed the basis for deriving strategic recommendations.

RESULTS AND DISCUSSION

Result

The findings from the literature review and semi-structured interviews provide a comprehensive overview of the strategic position of SMEs undergoing digital transformation. The analysis identifies key internal and external factors organized into a SWOT matrix, revealing strengths that may support digital development, weaknesses that limit readiness, opportunities emerging from the digital ecosystem, and threats posed by technological and market changes. The results demonstrate that while SMEs acknowledge the necessity of digital transformation, their strategic execution remains constrained by internal limitations and external uncertainty.

Strengths identified in the analysis highlight that many SMEs possess strong relationships with customers, high adaptability, and flexible business structures. Interview respondents emphasized that close customer engagement allows SMEs to personalize services more effectively once digital tools are implemented. In addition, owner-driven decision-making enables SMEs to adjust strategies quickly without bureaucratic constraints, supporting faster technology adoption. Some SMEs also reported prior exposure to digital platforms—such as social media marketing, e-commerce, or digital payments—serving as a foundation for broader digital implementation. Literature sources support this finding, suggesting that entrepreneurial mindset, agility, and innovation culture are among the most important internal enablers of SME digitalization.

In contrast, weaknesses remain a significant barrier to digital transformation. The most prominent internal limitations include insufficient digital skills, lack of financial resources, low technological literacy, and inconsistent digital infrastructure. Interview participants reported difficulty integrating new technologies due to limited employee training and the absence of IT personnel. Cost concerns also surfaced repeatedly, with SMEs expressing uncertainty regarding return on investment, especially for advanced digital systems like enterprise resource planning (ERP), automation, or data analytics tools. Additionally, resistance to change appeared as an organizational barrier, particularly among traditional businesses with long-standing operational habits. The literature confirms that capability gaps and financial constraints are among the most persistent barriers preventing SMEs from scaling digital initiatives.

On the external dimension, several opportunities are available to support SME digitalization. Respondents noted that growing consumer demand for digital engagement—such as online purchasing, delivery tracking, and digital payments—creates new market possibilities. Additionally, government initiatives, including digital skills programs, grants, and tax incentives for technology adoption, offer potential support. The rapid development of accessible and low-cost digital tools, such as cloud software, AI-powered marketing platforms, and mobile-based business applications, also provides SMEs with scalable digital adoption pathways. Literature findings align with these observations, emphasizing that digital transformation offers SMEs enhanced visibility, operational efficiency, customer analytics, and market expansion beyond traditional geographical boundaries.

However, several threats emerged that may hinder long-term digital transformation success. Cybersecurity risks were perceived as a major concern, particularly among SMEs lacking protective systems or cybersecurity awareness. Respondents expressed apprehension regarding data fraud, hacking, and digital

payment vulnerabilities. Market threats also surfaced, such as heightened competition from digitally advanced firms, online global brands, and technology-driven startups. The rapid pace of technological evolution further complicates decision-making, as SMEs fear investing in systems that may quickly become outdated. Regulatory challenges, including digital taxation, data protection laws, and compliance requirements, were also identified as external risks. Literature confirms these findings, indicating that SMEs face environmental volatility and technology disruptions, requiring continuous adaptation to remain competitive.

To summarize the key findings, a SWOT matrix was developed based on thematic classification:

Table 1. Summarize of SWOT

Strengths	Weaknesses
Strong customer relationships	Limited digital literacy and skills
Flexible and adaptive business structure	Financial constraints and high perceived cost
Entrepreneurial mindset and owner-driven decisions	Lack of IT personnel and poor digital infrastructure
Growing digital consumer market	Cybersecurity risks and data protection issues
Opportunities	Threats
Affordable digital tools and government support	Increased competition from digital firms
Access to global markets via e-commerce	Rapid technological change and regulatory uncertainty

Source: Data Analysis

The results indicate that SMEs possess strategic potential to engage in digital transformation, but success requires addressing internal capability gaps and navigating external uncertainties. Strength-opportunity alignment suggests that with proper training and financial support, SMEs could leverage digital platforms to expand operations and enhance competitiveness. However, strength-threat and weakness-threat intersections highlight the need for risk mitigation strategies, capacity-building initiatives, and clearer policy frameworks.

Discussion

The findings of this study highlight a complex but promising landscape of digital transformation for SMEs, shaped by internal characteristics, external pressures, and evolving technological environments. The SWOT analysis reveals that while SMEs possess inherent strengths that favor digital adaptation, significant challenges persist, requiring strategic alignment, capability development, and supportive ecosystems. This discussion expands on the meaning of those findings, comparing them with existing literature and providing deeper interpretation of how SMEs can position themselves effectively in the digital era.

To begin, the identified strengths—such as customer intimacy, flexibility, agility, and entrepreneurial decision-making—play a critical role in enabling SMEs to adjust quickly to new technologies. These strengths align with previous research stating that SME agility allows faster digital integration compared to large organizations with rigid hierarchical structures (Bouwman et al., 2019). The close customer relationships characteristic of SMEs enable more personalized digital engagement strategies, including online communication, digital loyalty programs, and customer feedback loops. This can serve as an advantage when transitioning into customer-centric digital models supported by CRM platforms or social media analytics. Thus, the strengths found in this study reinforce the idea that digital transformation is not solely a

technological process, but also a cultural and relational shift leveraging existing business assets.

Conversely, the weaknesses identified—particularly the lack of digital literacy, limited financial capacity, insufficient infrastructure, and resistance to change—underscore persistent obstacles documented throughout digital transformation literature. Scholars argue that digital readiness depends not only on technology access, but also on organizational culture, leadership vision, and sustainable workforce development (Nambisan et al., 2019). Interview findings suggest that many SMEs still perceive digital investment as expensive and risky, especially when return on investment is unclear. This perception gap reflects a broader issue: SMEs often lack long-term strategic planning and rely instead on reactive decision-making triggered by external pressures. The lack of IT expertise and structured training programs further inhibits adoption. Without addressing these capability gaps, even SMEs with strong entrepreneurial drive may struggle to implement transformative digital initiatives.

The external environment presents significant opportunities for SMEs. The rise of e-commerce, digital financial systems, automation, and AI-enabled business tools lowers entry barriers to transformation, making it possible for SMEs to adopt advanced technology at relatively low cost. Cloud-based solutions, in particular, offer scalability without requiring major infrastructure upgrades, supporting findings from previous research asserting that digital tools are becoming increasingly accessible to smaller firms (Zhu & Kraemer, 2021). Moreover, government incentives and policy frameworks promoting digitalization provide institutional support for SMEs seeking to modernize. The growing digital consumer market, accelerated by the COVID-19 pandemic, demonstrates that digital transformation is no longer optional but a strategic imperative for survival and growth. These opportunities reinforce the potential for SMEs to unlock competitive advantages, including market expansion and improved operational resilience.

Despite these opportunities, the threats identified in the analysis cannot be overlooked. Cybersecurity concerns, compliance challenges, and intensifying digital competition pose significant risks to SMEs. As cybersecurity threats increase globally, SMEs remain highly vulnerable because of limited investment in secure systems (European Commission, 2022). Regulatory uncertainties, including taxation on digital goods and privacy rules, introduce additional complexity. The rapid pace of technological evolution further intensifies competitive pressure, as SMEs risk falling behind digitally advanced firms or new market entrants with technology-driven business models. These findings align with prior research asserting that SMEs face higher operational risk in digital ecosystems due to resource limitations and lack of protective infrastructure (Ghobakhloo, 2020).

When examining the SWOT dimensions holistically, a strategic pattern emerges. SMEs can enhance digital transformation success by leveraging their internal strengths to exploit external opportunities while addressing weaknesses through capability-building and mitigating threats through proactive planning. For example, SMEs' strong relationships with customers can be strengthened using digital marketing analytics and customized online services. Likewise, their agility allows for incremental and adaptive digital strategies rather than costly large-scale investments. However, translating these strengths into tangible digital advantages requires

organizational learning and mindset shifts. Training, partnerships, and collaboration with technology providers or digital consultants may help bridge expertise gaps.

The intersection of weaknesses and opportunities also suggests future strategic priorities. Programs supporting workforce upskilling, financial incentives, and digital literacy initiatives can help SMEs overcome barriers. Governments and ecosystem stakeholders—such as chambers of commerce, incubators, and digital innovation hubs—play a crucial role in supporting SMEs' digital journeys. Policy frameworks that reduce cost burdens, streamline compliance processes, and improve technology accessibility would further accelerate progress.

Similarly, evaluating threats through the lens of strengths offers insight into risk mitigation. SMEs' agility could help them adapt more quickly to regulatory updates or cybersecurity requirements, provided they receive adequate awareness and support. Building resilience—through cybersecurity investment, risk assessments, backup systems, and compliance training—will be essential for sustainable transformation. Finally, the findings reinforce the relevance of SWOT analysis as a strategic tool for SMEs undergoing digitalization. Its structured approach allows SMEs to evaluate readiness, prioritize action areas, and align internal capabilities with external digital pressures. However, SWOT alone is not sufficient; it must be integrated into broader strategic planning and continuously updated as technology and market conditions evolve.

CONCLUSION

This study concludes that digital transformation presents both significant opportunities and substantial challenges for SMEs, requiring strategic alignment, organizational readiness, and supportive external environments. The SWOT analysis reveals that SMEs possess inherent strengths—such as strong customer relationships, agility, and entrepreneurial decision-making—that can facilitate digital adoption, yet internal weaknesses including limited digital skills, financial constraints, and resistance to change continue to hinder progress. At the same time, external opportunities such as expanding digital markets, accessible technological solutions, and government support create favorable conditions for transformation, while threats like cybersecurity risks, increasing competition, rapid technological shifts, and regulatory pressures present ongoing risks that must be managed. Overall, the findings highlight that successful digital transformation for SMEs is not solely a technological process, but a strategic journey requiring capacity-building, continuous evaluation, and adaptive planning. Therefore, SMEs must leverage their strengths, address critical capability gaps, and capitalize on emerging digital opportunities while developing proactive strategies to mitigate threats. This integrated approach will support SMEs in enhancing competitiveness, improving resilience, and achieving sustainable growth in the increasingly digital business landscape.

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