DIGITAL TRANSFORMATION CAPABILITY AND STRATEGY IMPLEMENTATION IN SMEs: EVIDENCE FROM THAI NGUYEN

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Abstract: ***This study examines the relationship between digital transformation capability and the effectiveness of business strategy implementation among small and medium-sized enterprises (SMEs) in Thai Nguyen. Based on dynamic capabilities theory, it highlights key components of digital capability: technological readiness, digital workforce competence, organizational agility, and strategic alignment. Using secondary data from USAID, the World Bank, and the General Statistics Office, the findings show that SMEs with higher digital maturity achieve better outcomes in revenue growth, profitability, and market expansion. However, most SMEs in Thai Nguyen remain in the early stages of digital adoption, with few having formal digital strategies. Major barriers include weak infrastructure, limited digital talent, and low strategic awareness among leaders. The study offers policy implications for authorities and practical recommendations for SMEs to build suitable digital transformation roadmaps, enhance competitiveness, and support sustainable growth.***

• Keywords: *digital transformation, business strategy, SMEs, Thai Nguyen.*

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1. Introduction

In the context of globalization and the rapid development of digital technologies, digital transformation has become an inevitable trend for all countries and types of enterprises. Digital transformation is not only a tool for technological innovation but also a strategic driver for restructuring business models, enhancing competitiveness, and optimizing business performance. In Vietnam, recognizing the importance of this trend, the government has issued various policies to promote and direct digital transformation, notably Decision No. 749/QĐ-TTg dated June 3, 2020, approving the National Digital Transformation Program until 2025, with orientations toward 2030. These efforts aim to develop Vietnam into a digital nation, building a digital economy, digital society, and digital government comprehensively. Within Vietnam's economic structure, small and medium-sized enterprises (SMEs) play a particularly vital role, accounting for over 97% of all operating enterprises, significantly contributing to Gross Domestic Product (GDP), creating many jobs, and serving as pillars of local economic growth. However, most SMEs face numerous barriers in the digital transformation process, such as limited financial resources, insufficient technological capacity, weak managerial capabilities, and a shortage of skilled digital workforce. Furthermore, their ability to formulate long-term strategies in a digital environment remains relatively weak, resulting in digital transformation efforts that are often reactive, fragmented, and ineffective. Thai Nguyen Province - an industrial and educational hub in the Northern Midlands and Mountainous region - is home to a predominantly SME-based business ecosystem. In recent years, the province has made substantial efforts to implement support programs for digital transformation and promote the application of information technology in business management and production. However, in practice, the level of digital transformation among SMEs in the area varies significantly. Many enterprises implement digital solutions superficially without aligning them with their strategic business orientation, leading to results that do not correspond with the resources invested. This situation highlights the need for a systematic study of the relationship between digital transformation capability and the effectiveness of business strategy implementation, which are two critical factors ensuring sustainable business development in the digital economy era.

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Based on this context, this study aims to clarify three core issues: (i) the status of digital transformation capabilities of SMEs in Thai Nguyen Province; (ii) the effectiveness of business strategy implementation in the context of digital transformation adoption; and (iii) the relationship between digital transformation capability and business strategy implementation effectiveness. This research contributes scientifically by elucidating the mechanisms through which digital transformation impacts strategic implementation effectiveness among small and medium-sized enterprises at the local level.

2. Theoretical framework and analytical model

2.1. The concept of digital transformation capability

Digital transformation capability refers to an enterprise's comprehensive ability to effectively adopt, integrate, and leverage digital technologies across all facets of its operations- including business processes, organizational structures, and corporate culture - with the ultimate goal of enhancing overall performance and generating new business value. This capability is not limited to the mere implementation of digital tools; rather, it represents a holistic and strategic transformation that redefines how a company operates, competes, and delivers value in the digital age.

At its core, digital transformation capability includes several key dimensions:

Technological readiness which entails the availability and robustness of digital infrastructure, the adoption of digital platforms, and the ability to process and analyze data for informed decision-making.

Human resource competence refers to the digital literacy and upskilling of the workforce, the existence of specialized IT or digital teams, and a culture of continuous learning to keep pace with technological change.

Organizational agility, defined by the ability to respond quickly to market changes, experiment with new business models, and reorganize internal structures to support innovation and cross-functional collaboration.

Strategic alignment, which emphasizes the integration of digital transformation objectives with long-term business strategies, ensures that digital initiatives are not fragmented but instead support the enterprise's vision, mission, and performance goals.

According to Aguiar et al. (2019) and Bonnet & Westerman (2020), digital transformation capability is not static - it evolves over time as enterprises experiment, learn, and adapt to new technologies and market conditions. This positions it as a dynamic capability, a concept that originates from strategic management theory. As such, it enables firms to not only survive but thrive amid the rapid, unpredictable shifts in digital environments. Ghosh et al. (2022) further argue that organizations with strong digital transformation capabilities are more likely to sustain competitive advantage, as they can more effectively harness data, enhance customer experiences, and continuously innovate products, services, and processes.

In Vietnam, SMEs often face constraints in financial resources and skilled talent, but those that invest strategically in developing this capability tend to outperform their peers in agility, resilience, and long-term growth. Thus, enhancing digital transformation capability is increasingly seen as a foundational pillar for strategic success and sustainable competitiveness in the digital economy era.

2.2. Business strategy implementation and its effectiveness

Business strategy implementation serves as the bridge between strategic planning and actual performance, involving the orchestration of people, processes, and technology to achieve organizational goals.

The effectiveness of strategy implementation is influenced by multiple interrelated factors. Among these, leadership style plays a pivotal role. Transformational and participative leadership styles tend to foster stronger employee commitment, clearer communication, and a culture of accountability, all of which are crucial for aligning individual efforts with organizational priorities.

Organizational resources, including financial capital, human capabilities, infrastructure, and technology, are equally essential. A strategy, no matter how well conceived, cannot succeed if the enterprise lacks the resources to support execution.

Communication channels are another critical component. Transparent, timely, and two-way communication facilitates coordination across

departments, reduces misunderstandings, and ensures that all organizational levels understand their roles in achieving strategic goals. Effective communication mechanisms also help in monitoring progress, identifying implementation bottlenecks, and making necessary course corrections.

For small and medium-sized enterprises, particularly those operating in emerging markets like Vietnam, the implementation of strategy is often constrained by limited financial and human resources, underdeveloped systems, and external uncertainties.

This reality calls for a high degree of flexibility and innovation in how strategy is executed. SMEs must adopt lean and adaptive approaches, experiment with low-cost digital tools, and rely on the commitment and creativity of their workforce. Furthermore, the ability to learn from implementation setbacks and rapidly adjust plans, which is often referred to as "strategic agility" becomes a decisive factor in sustaining long-term success.

In summary, strategy implementation is a complex, multidimensional process that demands synchronized leadership, resource optimization, clear communication, and organizational alignment. For SMEs, building internal capacity and fostering an agile, innovative-driven mindset are essential to translating strategy into tangible, sustainable performance outcomes.

2.3. Relationship between digital transformation capability and business strategy implementation

These technologies reduce information asymmetry, minimize delays in decision-making, and help translate strategic plans into well-informed actions, thereby closing the gap between strategy formulation and execution.

Moreover, Schallmo et al. (2021) and Williams et al. (2019) argue that such alignment is a defining feature of sustainable digital transformation. It is not sufficient to adopt isolated digital tools; rather, organizations must cultivate a digital mindset across leadership and workforce, foster cross-functional collaboration, and institutionalize continuous improvement practices. These elements create a dynamic feedback loop where digital initiatives are continuously evaluated, refined, and scaled in alignment with evolving strategic priorities.

In the specific context of emerging economies, where SMEs often operate in resource-constrained environments, building digital transformation capability can serve as a strategic equalizer. Digital transformation becomes not just a support mechanism but a strategic enabler that enhances competitiveness, resilience, and long-term viability.

In summary, the evidence points to a strong and positive correlation between digital transformation capability and the successful execution of business strategies. Enterprises that integrate digital tools strategically and systematically are better equipped to navigate complexity, adapt to change, and sustain growth in the digital era.

3. Research methods

3.1. Research design

This study employs a quantitative research approach based on the analysis of secondary data to clarify the relationship between digital transformation capabilities and the effectiveness of business strategy implementation in SMEs in Thai Nguyen province. The research design focuses on utilizing data from official reports and databases provided by government agencies and reputable international organizations. This method is appropriate given the absence of primary data collection, ensuring objectivity, scalability, and comparability of results.

3.2. Research subjects, scope, data sources, and data collection methods

Research subjects: Small and medium-sized enterprises operating in Thai Nguyen province, primarily in manufacturing, trade and services, and information technology sectors. This group plays a pivotal role in the local economy and is currently undergoing digital transformation.

Time scope: The study focuses on the period from 2018 to 2023, a timeframe marked by the implementation of various policies and programs promoting digital transformation in Vietnam, aligned with the developmental context of SMEs.

Data sources: Secondary data are collected from the General Statistics Office of Vietnam, the Department of Planning and Investment of Thai Nguyen province, reports from OECD, World Bank, USAID, and related academic studies on digital transformation and business performance in SMEs.

Data collection methods: Data were gathered through reviewing public reports, industry reports, and official databases. The selected data were carefully screened and processed to ensure relevance and accuracy for the analysis objectives.

3.3. Data analysis method

The secondary data were compiled, processed, and analyzed using descriptive statistical methods to provide an overview of digital transformation capabilities and the effectiveness of business strategy implementation in small and medium-sized enterprises in Thai Nguyen. Additionally, correlation analysis was employed to identify the relationship between digital transformation factors and business performance indicators. This approach allows for a reasonable and efficient assessment of the influence and association among the studied variables without the need for complex analytical techniques.

4. Research findings

4.1 The current state of digital transformation capabilities among SMEs in Thai Nguyen

Thai Nguyen province, serving as a key industrial and information technology hub in the northern midland and mountainous region, has achieved some initial progress in promoting digital transformation among SMEs. However, the level of implementation and the capability to carry out digital transformation among SMEs remain limited in terms of awareness, resources, and technology.

According to the USAID (2022) report, only about 36% of SMEs in Thai Nguyen are at an "intermediate readiness level" for digital transformation. This means they have adopted basic digital tools such as accounting software, social media, and simple internal management platforms. Meanwhile, only 12% of SMEs are considered highly ready, demonstrating the ability to implement advanced technologies such as data analytics, integrated e-commerce systems, or cloud-based platforms.

Table 1. Digital transformation readiness levels of SMEs in Thai Nguyen (2022)

Readiness Level	Percentage of SMEs (%)	Key Characteristics
Low (no technology use)	52	Relying on traditional tools, with no digital strategy
Medium (initial adoption)	36	Use accounting software, social media, and simple digital tools
High (advanced adoption)	12	Have a digital strategy, apply CRM, ERP, big data, AI, etc.

Source: USAID, 2022; aggregated from surveys in six provinces, including Thai Nguyen

In addition, the Thai Nguyen Department of Information and Communications (2023) reported that only about 28% of SMEs have a formal digital transformation plan integrated into their long-term business strategy. Many businesses still perceive digital transformation as a technical task confined to the IT department, rather than as a strategic priority requiring leadership commitment.

Moreover, the World Bank (2023) report on digital infrastructure shows that Thai Nguyen scores 63 out of 100 on the digital connectivity index, primarily due to the limited availability of high-speed internet in rural areas. This digital divide restricts SMEs in remote locations from adopting comprehensive digital solutions.

Human resource capabilities in digital transformation also present a significant challenge. According to the Ministry of Information and Communications, over 70% of SMEs in Thai Nguyen do not have a dedicated digital team. Digital-related roles are often assigned as additional tasks, with staff lacking formal training or sufficient budgets to keep up with emerging technologies.

In summary, the digital transformation capacity of SMEs in Thai Nguyen remains at a low to medium level, with large disparities even within the same industry sectors. Investment in infrastructure, workforce development, and strategic awareness will be crucial to drive successful digital transformation in the coming years.

4.2 Business strategy implementation effectiveness of SMEs in Thai Nguyen

In Thai Nguyen province, SMEs play a central role in the local economy, accounting for over 97% of the total number of enterprises (Thai Nguyen Statistical Office, 2023). However, the effectiveness of strategy execution among these businesses remains uneven, as reflected in both quantitative and qualitative performance indicators.

According to the General Statistics Office (GSO, 2023), the average annual revenue growth rate of SMEs in Thai Nguyen during the 2020-2022 period was approximately 5.8%, which is lower than the national average of 6.7%. The average net profit margin stood at just 4.1%, indicating limited efficiency in resource utilization. Additionally, only about 31% of SMEs in the province had formal strategic business plans for a 3 - 5-year period, compared to over 45% in more developed localities such as Hanoi and Da Nang (USAID, 2022).

A key challenge for Thai Nguyen SMEs is the translation of strategic goals into operational performance metrics aligned with their capabilities in technology, management, and market responsiveness. A survey conducted by the SME Development Institute (2023) revealed that more

than 60% of SMEs do not regularly assess their strategy implementation, and only 22% utilize Key Performance Indicators (KPIs) tied to clearly defined strategic objectives.

Table 2. Key Indicators of Business Strategy Implementation Effectiveness among SMEs in Thai Nguyen (2020 - 2022)

Indicator	Average Value (%)	National Benchmark (%)
Annual revenue growth rate	5.80	6.70
Net profit margin	4.10	5.30
Percentage of firms with formal strategic business plans	31	42
Percentage of firms using KPIs for strategic performance monitoring	22	35
Percentage of firms conducting periodic strategic evaluation	38	50

Source: GSO, USAID, SME Development Institute, 2023

4.3 Analysis of the relationship between digital transformation capability and business strategy implementation effectiveness of SMEs in Thai Nguyen

The relationship between digital transformation capability and the effectiveness of business strategy implementation is an increasingly important topic amid the rapid development of the digital economy. Based on the dynamic capability perspective, many studies suggest that digital transformation capability is not only a supporting factor but also a critical driver that fosters organizational agility and strategic adaptability (Ghosh et al., 2022; Bonnet & Westerman, 2020).

In Thai Nguyen province, data from USAID (2022) and World Bank (2023) reports indicate that enterprises with a higher level of digital readiness tend to achieve superior business performance compared to their peers. A linear regression analysis cited from the study by Nguyen Thi Phuong Dung (2024) shows that factors related to digital transformation capability, such as IT utilization, digital leadership, and digital infrastructure, are positively correlated and statistically significant with strategic effectiveness, including revenue growth, operational efficiency, and market expansion.

Specific data from local and international reports highlight clear trends:

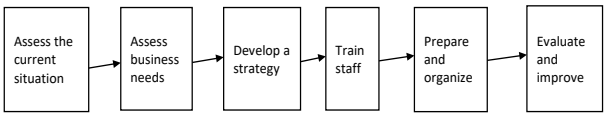
- Enterprises using ERP/CRM or internal management systems have an average profit margin 1.8 times higher than those without digital technology adoption (GSO, 2023).

- Enterprises that have issued digital transformation strategies have a 42% higher probability of strategic success than those without such strategies (USAID, 2022).

- Enterprises investing in digital skills training for employees achieve strategic goal completion rates 2.1 times higher than those that do not (World Bank, 2023).

4.4. Proposed analytical model for SMEs in Thai Nguyen

Figure 1. Proposed Analytical Model for SMEs in Thai Nguyen



Source: Author's proposal

Based on a comprehensive review of relevant theories on digital transformation capabilities, business strategy execution effectiveness, and the practical context of small and medium-sized enterprises (SMEs) in Thai Nguyen province, the author proposes a six-step analytical model to clarify the relationship between the two core research variables. The model includes the following components: (1) Assessing the current situation; (2) Identifying business needs; (3) Developing a digital transformation strategy; (4) Training and upskilling human resources; (5) Organizing and implementing digital initiatives; and (6) Evaluating outcomes and continuous improvement. These steps are structured in a logical sequence that reflects the process from internal capacity assessment to execution and outcome measurement, while allowing for flexibility depending on the specific conditions of each enterprise.

Specifically, the assessment of the current situation enables enterprises to identify their readiness for digital transformation in terms of technology, processes, and human resources. Identifying business needs helps link digital initiatives to specific strategic goals. Training and upskilling staff play a critical role in enhancing implementation capacity and fostering a culture of innovation. The final step, evaluation and improvement, involves measuring the effectiveness of digital transformation based on performance indicators and making necessary adjustments to improve long-term strategic outcomes.

This proposed model provides both theoretical grounding and practical applicability. It serves as a guiding framework for SMEs in aligning their

digital transformation efforts with strategic business objectives. Moreover, the model forms the basis for constructing research hypotheses to empirically test the relationship between digital transformation capabilities and business strategy execution.

5. Conclusion and recommendations

5.1. Conclusion

This study has demonstrated a positive and significant relationship between digital transformation capability and the effectiveness of business strategy implementation among small and medium-sized enterprises (SMEs) in Thai Nguyen province. Enterprises with higher levels of digital readiness and investment in digital initiatives tend to achieve superior outcomes in revenue growth, profit margins, and market expansion. However, many SMEs still exhibit low to medium digital capabilities, constrained by infrastructure limitations, workforce shortages, and a lack of strategic digital awareness.

Key findings include:

- Firms that adopted ERP/CRM systems and developed clear digital transformation strategies showed 40-50% higher rates of strategic goal achievement compared to those that did not.

- Investment in digital skills training resulted in up to twice the level of strategic implementation effectiveness.

- Higher levels of digital adoption consistently correlated with improved strategic performance across manufacturing, service, and commerce sectors.

5.2. Policy implications

Develop a digital transformation ecosystem tailored for SMEs, including access to shared digital platforms, infrastructure, and consulting services:

Local authorities should take a proactive role in building a supportive digital ecosystem that addresses the specific needs and limitations of SMEs. This includes establishing regional digital hubs or innovation centers that offer shared access to key technologies such as cloud services, enterprise resource planning (ERP), and customer relationship management (CRM) platforms.

Implement specialized digital skills training programs focusing on strategic management, data analysis, and the application of emerging technologies, particularly targeting micro and small enterprises:

A key barrier to digital transformation in SMEs is the lack of skilled personnel who can effectively lead and manage digital initiatives. To address this, local governments and training institutions should co-develop short-term, modular training programs that provide practical, job-relevant digital skills.

Foster partnerships between local government, universities, and large enterprises to promote innovation and knowledge transfer to SMEs:

Public-private-academic collaboration is critical to building an inclusive and innovation-driven digital economy. Local governments should initiate and facilitate structured partnerships that connect SMEs with research institutions, technical universities, and large corporations that possess advanced digital expertise.

5.3. Recommendations for enterprises

Recognize digital transformation as a strategic priority, not just a technical upgrade. Develop a clear and phased roadmap that aligns with long-term business objectives.

Invest in internal digital capabilities, especially through training dedicated personnel, enhancing digital leadership, and fostering a culture of innovation and change.

Leverage accessible and cost-effective digital solutions, such as ERP/CRM software, e-commerce platforms, and cloud computing, to optimize operations and enhance market competitiveness.

Establish performance monitoring systems, using KPIs linked to digital initiatives to continuously assess and improve the effectiveness of strategy execution.

Refereces:

Aguiar, T., Gomes, S. B., da Cunha, P. R., & da Silva, M. M. (2019, October). Digital transformation capability maturity model framework. In 2019 IEEE 23rd International Enterprise Distributed Object Computing Conference (EDOC) (pp. 51-57).

Chu Ba Quyet. (2021). An exploratory study on factors affecting successful digital transformation in Vietnamese enterprises. Journal of Banking Science & Training, 233, 57-70.

Ghosh, S., Hughes, M., Hodgkinson, I., & Hughes, P. (2022). Digital transformation of industrial businesses: A dynamic capability approach. Technovation, 113, 102414.

Nguyen Dang Tue (2024). Factors influencing digital transformation: A study on the technology acceptance model among SMEs in Ha Nam province. Journal of Finance - Marketing Research, 15(3), 18-30.

Nguyen Thi Thao Nhi, Nguyen Thi Mai Phuong, Nguyen Thi Quynh, Tran Thi Thanh, & Phan The Cong (2023). The impact of digital transformation on business performance of Vietnamese enterprises in the new context. Journal of Industry and Trade Research, 82, 1-9.

Organisation for Economic Co-operation and Development (OECD). (2021). The digital transformation of SMEs. OECD Publishing.

Teng, X., Wu, Z., & Yang, F. (2022). Research on the relationship between digital transformation and performance of SMEs. Sustainability, 14(10), 6012.

Ngo Cam Tu (2023). Improving human resource quality to meet the digital transformation requirements of the economy in Thai Nguyen province.

United States Agency for International Development (USAID). (2022). How USAID is mapping a path to digital transformation for businesses in Vietnam.

World Bank. (2023). Digital government transformation in Vietnam: Global lessons and local insights (Report No. 099235103032229053).