

Study on Digital Transformation Strategy of Small and medium-sized Enterprises in China

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Abstract:

The digital wave has swept the world and the industrial change has accelerated. As an important part of the national economy, small and medium-sized enterprises must conform to the trend of The Times and seek digital transformation and high-quality development. This paper deeply analyzes the internal and external environment of small and medium-sized enterprises digital transformation and examines the issues and challenges posed by their digital transformation. At last, some transformation strategies are put forward. It is found that the key factors restricting the high-quality development of small and medium-sized enterprises are the shortage of funds, the lack of talent, the lack of technical ability, and the backward management system. To solve the problems, it is urgent to strengthen the construction of financing channels, improve the talent training mechanism, enhance the ability of technological innovation, and promote management innovation and upgrading, to promote the high-quality development of medium-sized enterprises.

Keywords: Small and medium-sized enterprises; digital transformation; strategy.

1. Introduction

Digital transformation refers to the process of digitally upgrading a business through the use of new technologies to improve its efficiency and production volume [1]. At present, the world is gradually entering the era of digital economy. According to the survey data of the Internet Data Centre (IDC), digital transformation has become the core strategy of global enterprises to cope with the challenges of the new era of economic system, and it is a key issue for the survival of enterprises [1].

The fourth Economic Census of China revealed that medium-sized enterprises (SMEs) contributed more than 50% of China's tax revenue and more than 60% of its GDP, making them an indispensable part of the country's economy [2]. As China's economy enters the era of the digital economy, the pace of digital transformation is accelerating, and the way to support the high-quality development of small and medium-sized enterprises is to use new information and communication technology to empower traditional industries. SMEs play an irreplaceable role in promoting employment, stimulating innovation, and optimizing supply. However, these businesses also have some difficulties, including limited resources, lack of specialized knowledge, and market volatility [3]. SMEs might encounter several obstacles in their expansion, notwithstanding their importance. One of the biggest chal-

lenges is their limited resources, which prevent them from investing in new processes and technologies. SMEs may also lack the necessary training and expertise to implement digital transformation initiatives successfully. This may result in less than optimal utilization of digital tools and technologies, which could lead to lost opportunities and advantages in the marketplace [4].

In the age of the digital economy, encouraging the modernization and transformation of businesses has become a major concern for all facets of society. This is particularly true in China, where there are many kinds of small and medium-sized businesses, each with a unique development status and trend, making it challenging to offer them consistent policy support. Considering this, this paper will begin with the viewpoint of the development of SMEs, examine the issues and challenges posed by their digital transformation, and develop focused solutions to serve as a useful guide for the execution of digital transformation initiatives and hasten the growth of SMEs.

2. Internal and External Environment of SMEs' Digital Transformation

2.1 Internal Environment

2.1.1 Internal resources

The inability of businesses to invest in digital technology

and hire top people is directly hampered by resource endowment limits, which include a lack of finance, talent, and technology. These restrictions also pose a significant barrier to the transformation process. SMEs can swiftly adapt and accept new technologies because of the flexibility of resource allocation, which provides them an inherent advantage to accelerate the process of digitalization [5]. However, shortage of funds is an important factor restricting the high-quality development and digital transformation of SMEs, and the deep-rooted reasons behind it are complex and diverse [6]. The phenomenon of “difficult financing, expensive financing” is mainly caused by the low credit rating of small and medium-sized enterprises, insufficient collateral, short operating history and difficulty in risk assessment. Enterprises face a high threshold when obtaining loans from traditional financial institutions, and the lack or insufficiency of credit history makes it difficult for financial institutions to accurately assess their loan risks, resulting in harsh loan conditions, high interest rates or loan rejection. Small and medium-sized enterprises are relatively weak in market competition, lack of sufficient negotiating power and market influence, which aggravates the problem of high financing costs. Digital transformation itself is a capital-intensive investment, involving many costs such as technology upgrading, personnel training and system integration. The shortage of funds makes it difficult for SMEs to cover the initial investment, affecting the progress and quality of their transformation [7].

2.1.2 Corporate culture and management

The development of the digital economy has penetrated large, small, and medium-sized enterprises in China, and many enterprises have begun to implement digital transformation, but there are still quite a few enterprises that do not have a deep understanding of digital transformation, only a formality, and do not understand the value of digital transformation to enterprises from the root, and even some enterprises are reluctant to carry out digital transformation [5]. Some enterprises just blindly imitate the successful transformation of large enterprises or mechanically participate in the promotion of policies, and do not do a good job of planning from where to turn and how to turn. Therefore, for such enterprises, it seems that the enterprise is already actively engaged in digital transformation, but only on the surface. In addition, as the backbone of the enterprise, the awareness of the management has a great role in promoting the digital transformation of the enterprise. The management of many small and medium-sized enterprises lacks digital understanding and thinking, and their management level is also limited [8]. They ignore the efficient integration of digital technology with internal business processes and external channels of

enterprises, believing that the transformation is limited to a straightforward upgrade of traditional software and systems using digital technology, or an online business using intelligent software. However, all the enterprise’s workers must be involved in the digital transformation, which requires top-down involvement from management as well. Since corporate culture is the foundation of the business, changing it will unavoidably encourage digital transformation. However, the development of corporate culture is not given much weight by small and medium-sized businesses, and it lacks systematization and distinguishing features.

2.2 External Environment

2.2.1 Market environment

The National Bureau of Statistics of China reports that in 2021, the epidemic’s effects, limitations on foreign production capacity, and other factors led to a significant increase in the operating income and total profit of small and medium-sized industrial enterprises in China above their designated size. China’s advantages as a complete industrial chain enabled it to undertake many foreign transfer orders. The average growth rates over the last two years were 9.9% and 16.8%, respectively [8], demonstrating the benefits of the robust resilience and vigor of Chinese SMEs. However, since 2022, the pandemic has had little effect on market demand, upstream raw material prices have remained high, and downstream SMEs are under more cost pressure. The National Bureau of Statistics reports that while the manufacturing purchasing managers’ index (PMI) increased to 50.1% in September 2022 from 50.1% the previous month, reaching the expansion range, the PMI of large enterprises was 51.1%, higher than the critical point, while the PMI of medium and small enterprises was 49.7% and 48.3%, respectively, still below the critical point [9]. These data indicate that the PMI of large enterprises is higher than the critical point. Digital transformation has evolved into a “compulsory course” in the post-epidemic era, improving the organizational structure, management style, and production mode. This has allowed small and medium-sized businesses to achieve high-quality development while also effectively boosting their internal power.

2.2.2 Policy environment

At the national level, the Party’s 20th National Congress report made it abundantly evident that we needed to encourage the growth of unique and specialized new businesses, advance the deep integration of the digital and real economies, and quicken the process of building both a digital and manufacturing powerhouse in China[9].

Digital transformation is becoming a “must-choose” for small and medium-sized business growth. This is because major global nations are accelerating the strategic layout of digital transformation, and the Chinese government is accelerating the digital transformation of the manufacturing sector. At the national level, the Party’s 20th National Congress report made it very clear that people needed to accelerate the development of China into a manufacturing and digital powerhouse while also fostering the establishment of distinctive and specialized new businesses and deepening the integration of the digital and real economies. In addition, the digital transformation of small and medium-sized businesses is one of the top priorities for the 31 provincial governments in 2022 [9]. These governments are also actively looking into new models to support the digital transformation and upgrading of small and medium-sized businesses. Using traditional industries as pilot projects, Guangzhou, Guangdong Province, has investigated mechanisms for multi-party cooperation among government authorities, industry associations, leading enterprises, digital transformation service providers, and financial institutions [9].

2.2.3 Technical environment

At the technical level, enterprises take data as the basis and computers as the platform support, so big data technology has become the most widely used digital technology for small and medium-sized enterprises[10]. Digital technology can reduce costs and increase efficiency, form internal and external connectivity, achieve comprehensive transformation and upgrading in production, and improve the comprehensive strength of enterprises [11]. However, for different industries, there are individual differences in the results pursued. The retail industry pays more attention to the changing needs of customers and the diversified supply of omni-channel, so in addition to big data technology, enterprises will also pay attention to supply chain digitization and Internet of Things technology to achieve a consumer-centric business model. The manufacturing industry pays more attention to the quality and service of enterprises, as well as research and development production capacity, so enterprises pay more attention to cloud computing and digital twins to improve enterprise production efficiency and product quality. The financial and insurance industry pays more attention to predictive analysis and information data processing, so it pays more attention to artificial intelligence and Internet of Things technology to improve the reliability of data and make better decisions. In general, SMEs in different industries have different levels of emphasis on digital technologies applied in digital transformation[12].

3. Main Issues Faced by SMEs in Digital Transformation

3.1 High Transformation Cost

Enterprises that want to implement digital transformation will unavoidably have to invest a significant amount of money. SMEs, in particular, have certain disadvantages when it comes to building infrastructure, networks, and other resources [13]. Additionally, their limited ability to integrate information and data drives up the cost of developing enterprise digital transformation solutions for service providers. On the one hand, enterprises must purchase advanced intelligent equipment, software customization, and digital basic platform and system construction in the early stages of the transformation. On the other hand, enterprises must bear the follow-up expenses of system debugging, staff training, data security prevention, equipment maintenance, etc. Meanwhile, most SMEs have low credit ratings and weak financing ability [13], so it is difficult to obtain more external support and the financial pressure is too great. It is difficult to meet the investment required for digital transformation, which hinders the transformation of enterprises.

3.2 Shortage of Talents

Professional talent is just as necessary for digital transformation as professional equipment [14]. Businesses require not only the introduction of qualified technical staff and managers capable of offering digital transformation strategies, but also compound talents with the ability to think digitally, apply practice, and adjust to corporate strategies. Given the current shortage of digital talent across all sectors, relying solely on financial incentives to attract and retain talent has become increasingly impractical. The high demand for skilled professionals means that financial incentives alone are often insufficient. Even if talent is hired, it must be constantly developed, and small and medium-sized businesses find it more difficult to invest more money in it. Enterprises will choose to train existing employees more and provide them with the understanding and practice of digital skills through internal and external training, to adapt to the new digital work and correctly use digital technology, to obtain human resources to support digital transformation. Compared to large enterprises, small and medium-sized enterprises have fewer employees, and there is indeed a shortage of digital talents [15].

3.3 Lack of Digital Technology

Digital security exposure Digital transformation requires combining a range of emerging technologies, as well as combining digital resources with specialized equipment [15]. Through digital technology, businesses can collect,

organize, and analyze data to obtain useful information, optimize business processes, and improve their management models. The transformation of technology is strong and requires a high threshold. Currently, SMEs lack a thorough understanding of digital professional technology, as well as having limited resources and capabilities, inadequate infrastructure construction, and inadequate capabilities for developing digital technology [2]. Additionally, because the market's digital technology is constantly updating and iterating, when changes quicken, it may be challenging to keep up with the changes. The technical problems with the digital transformation process don't have many workable answers. Furthermore, the process of digital transformation will increase the amount of enterprise data and information accumulated [16]. At the same time, this information will depend more on the network, making it vulnerable to network security threats and information leakage, both of which can harm a company's reputation. As a result, issues with digital security are gradually becoming apparent. SMEs lack additional security safeguards to thwart virus infection and information leaks [17]. The degree of digital transformation will intensify with time, leading to an accumulation of data and an increase in digital risk. This will escalate the complexity of digital transformation.

4. Digital Transformation Strategies for SMEs

4.1 Building Digital Business Processes

To achieve effective operations and boost market competitiveness, business process digitalization must be advanced [18]. The purchase process has become autonomous and intelligent with the use of computerized procurement systems, significantly lowering costs and increasing efficiency. To accomplish production automation and intellectualization, as well as to increase production efficiency and product quality, the manufacturing process uses intelligent manufacturing systems, which are based on artificial intelligence and the Internet of Things. Procedure for sales By using social media sales, e-commerce platforms, and the customer relationship management system to handle customer information centrally, sales may be diversified across several channels and brand influence can be increased [18]. In the service sector, online customer service and self-service platforms are adopted to provide all-weather service through chatbots, and personalized service suggestions are provided based on big data analysis to improve customer satisfaction [18].

4.2 Technology Application Strategy

Developing digital infrastructure entails utilizing big

data, cloud computing, artificial intelligence, and other cutting-edge information technologies extensively [18]. Cloud computing significantly lowers the cost and barrier of IT resources by offering flexible platforms, software, and infrastructure services. This allows businesses to swiftly respond to changes in the market and speed up the development of new products and services. Big data technology helps businesses make better decisions and run more efficiently by helping them mine insightful information from a massive ocean of data to inform supply chain optimization, tailored services, and precision marketing. The integration of artificial intelligence not only further optimizes the customer experience, but also improves the automation of the production process through intelligent recommendation systems and customer service automation, reducing operating costs and improving production efficiency [19]. In the process of building digital infrastructure, SMEs should pay attention to technology selection, select appropriate technology platforms and tools according to their own business characteristics and development goals, and promote continuous innovation and growth of enterprises.

4.3 Human Resource Strategy

4.3.1 Digital skills training

In addition to formally introducing digital technology, it is imperative to acknowledge the importance of the human factor in the process of digital transformation [5]. To meet the demands of digital transformation, businesses need to focus on professional personnel introduction and training, as well as supporting the transformation process. Developing talent that can reasonably use digital technology should be prioritized. Introducing various forms of information technology, like artificial intelligence and Internet of Things technology, is imperative during the digital transformation process. These technologies can assist businesses in creating a contemporary online management system and open up new avenues for external publicity [5]. For employees to reasonably utilize digital technology to complete work-related tasks, enterprises must prioritize the technical training of talent, provide an explanation of the fundamentals of the management system, and use digital technology as needed [20]. Small and medium-sized business development is significantly influenced by managers. In their capacity as managers, they must develop a digital awareness, organize company operations using digital platforms responsibly, develop digital talent, and advance the process of digital transformation from an all-encompassing standpoint [19].

4.3.2 Talent introduction

SMEs need the assistance of creative marketing skills if

they wish to engage in digital marketing in the modern day [9]. To accelerate the development of the team's internal marketing staff, small and medium-sized businesses should actively seek out and recruit top-tier, creative marketing talents for the enterprise marketing team. These individuals should also be trained internally. Enterprise managers should also modify their approaches to management and marketing, strengthen their efforts to enhance the marketing management system, define job roles and responsibilities, define performance standards, use marketing resources wisely, and establish the institutional framework for the digital era's marketing revolution. With the marketing talent and institutional foundation, enterprises can broaden the multi-platform marketing channels, carry out sufficient market research and build user portraits, carry out clear market segmentation and positioning, and then carry out targeted and diversified marketing, and finally achieve the purpose of profit [9].

4.4 Market and Customer Strategy

4.4.1 Digital marketing

SMEs is able to leverage cutting-edge technologies like big data and artificial intelligence in their digital marketing system development to better understand customer preferences and behaviour patterns, effectively capture market dynamics, and develop forward-thinking marketing strategies [9]. It is important to develop distinctive, superior customer experiences with tailored content, social media interaction, and mobile marketing to increase customer happiness and loyalty. Businesses now can overcome conventional geographic limitations and access a wider client base through emerging channels including social sales, online live streaming, and e-commerce, which will increase sales potential. The implementation of this strategy requires enterprises to first conduct an in-depth analysis of the target market, clear marketing objectives, and select digital tools and platforms that match the characteristics of enterprises and customer needs. Secondly, it integrates multi-channel resources, develops a comprehensive digital marketing strategy, and makes strategic adjustments based on the effect feedback to ensure the continuous optimization and efficiency maximization of marketing activities [9].

4.4.2 Customer relationship management

Online channels should guarantee consumers can access information and shopping convenience while offline channels should be monitored [9]. Offline channels should be a physical location where customers can experience products and receive high-quality services. The integration of online and physical media creates a harmonious whole that enables businesses to maintain their brand exposure

and varied marketing strategies. Besides, enterprises have extended online service hours, especially on weekends [20]. Most clients are often accustomed to doing their internet shopping in the afternoon or evening. As a result, retailers' online service schedules must correspond with this consumer behaviour. Conversely, businesses should aggressively implement pertinent employee training, streamline their communication channels, raise the effectiveness and caliber of their communications, and steer clear of a lot of unfavourable public perceptions.

5. Conclusion

The digital transformation of small and medium-sized enterprises needs to be systematically promoted from the external environment and internal conditions, the external to create a good policy environment and industrial ecology, the internal to consolidate the foundation of digital development, improve the modern enterprise management system, and enhance the ability of independent innovation. In the path selection, it is urgent to crack the development bottlenecks of capital, talent, technology, and management, and make precise efforts in financing channels, talent training, technological innovation, and management innovation. Currently, this paper only discusses the challenges faced by the digital transformation of small and medium-sized enterprises in China, particularly the various political and economic environments of different countries. In the future, small and medium-sized enterprises need to face up to the digital divide, seize digital opportunities, accelerate digital networking and intelligent transformation, shift from traditional factors to innovation-driven, from extensive growth to intensive development, actively integrate into China's international double cycle, cultivate new drivers and foster new development in all-round and deep-rooted changes, and promote high-quality economic and social development. Future research will address the transformation problems of small and medium-sized enterprises in more countries to provide better answers for their transformation strategies.

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