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Analysis of the Digital Transformation of SMEs

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Abstract: *With the rapid development of the digital economy, the flourishing of innovation and entrepreneurship, and the emergence of new industries and models in recent years, it is only natural for China, which is accelerating its modernisation, to seize the opportunities presented by the digital economy. As the integration of digital technology and the real economy continues to advance, one of the ensuing issues that must be faced is the digital transformation of traditional enterprises. This is especially true for small and medium-sized enterprises (SMEs), which make up a large part of China's economy. This is because SMEs are the largest and most dynamic group of enterprises in China and are an important foundation of the real economy. SMEs are the main battlefield for the digital transformation of traditional enterprises and the main force for the development of the real economy. Therefore, this paper will analyse the current situation of digital transformation of SMEs and give SMEs some transformation suggestions based on the successful transformation experience of Siemens.*

Keywords: *Small and Medium-Sized Enterprises, Digital Transformation*

1. Introduction

The goal of digital transformation is to develop a new business model. It builds on digital transformation and digital upgrading and penetrates further into a company's core operation. The development of digital technology and enabling capabilities to build a dynamic digital business model is known as digital transformation. How businesses exploit digital technology to their fullest potential is the key to digital transformation. Companies have undergone digital transformation when they adopt cutting-edge, novel methods of conducting business as technology develops. It is a fundamental transformation process that makes use of digital tools and entails enhancing or replacing current resources through technology and cultural transformation. Digital transformation covers all aspects of IT across all businesses, not only the purchase of a product or a solution. Yet, the absence of technology (or its inapplicability) causes more problems than its ongoing development.

We want technology to work for us and make sure that everything goes smoothly since we live in a digital age. This is generally feasible. Businesses must therefore make technology investments if they are to provide for the needs of their customers and employees. New techniques for storing, analyzing, automating, and managing data are necessary for the introduction of cloud technologies, mobile apps, and "resources as a service." Innovations may build upon one another, and new technology may result in process enhancements that enhance goods and services. As clients grow acclimated to specific experiences in their daily lives, they will eventually want even bigger enhancements. So, the digital transformation of businesses is both a necessity of the market and a logical outcome of the current state of economic development.

2. The State of Digital Transformation for SMEs

2.1. The State of China's Digital Economy

The emergence of a new generation of information technology, including the Internet, big data, cloud computing, and blockchain, has ushered in the digital period and the birth of the digital economy. New sectors like e-commerce, Internet finance, and online self-media have also been created. China's digital economy is expected to have a market value of 3,584.02 billion yuan in 2019 and contribute 36.2% of the country's GDP. [1] The introduction of digital office systems has further quickened the pace of digital transformation and increased business productivity in terms of process approval, business transformation, and other areas. Chinese businesses will enter a golden era of digitalization in 2021 as a result of the epidemic and the 14th Five-Year Plan's policy support, which have both actively or quietly paved the way for many businesses. Applications for human resources are becoming digital

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at an unparalleled rate.

The biggest and most dynamic class of businesses in China are small and medium-sized businesses (SMEs), which serve as a crucial pillar of the country's real economy[2]. According to data from the fourth national economic census, SMEs contribute more than 50% of tax income, 60% of GDP, 70% of technological innovation, 80% of employment in metropolitan areas, and 90% of all businesses. These traits are known as the "five, six, seven, eight, and nines." The industrial sector is undergoing a digital transformation, and SMEs are driving the development of the real economy [6-8].

2.2. Status of Digital Transformation in SMEs

Businesses have adopted digital tools to investigate the path of digital transformation of businesses due to the rapid development of a new generation of information technology. In July 2021, a questionnaire study was given to 55 SMEs in Anyang City, Henan Province, China. There were 11 items on the survey. Six questions were related to the business situation, challenges of digital transformation, opinions on the current government support policies in Anyang, and the business environment. Five questions related to the background of the enterprises in terms of size, region, industry, type, and stage of development [9-11].

Table 1: Sample analysis.

Category		Number	Percentage
Area	East	7	12.7%
	South	21	38.2%
	West	27	49.1%
Category	Technology-intensive	30	54.5%
	Resource-intensive	25	45.5%
Development Stage	Early	9	16.4%
	Growth period	11	20%
	Maturity	23	41.8%
	Transition period	12	21.8%

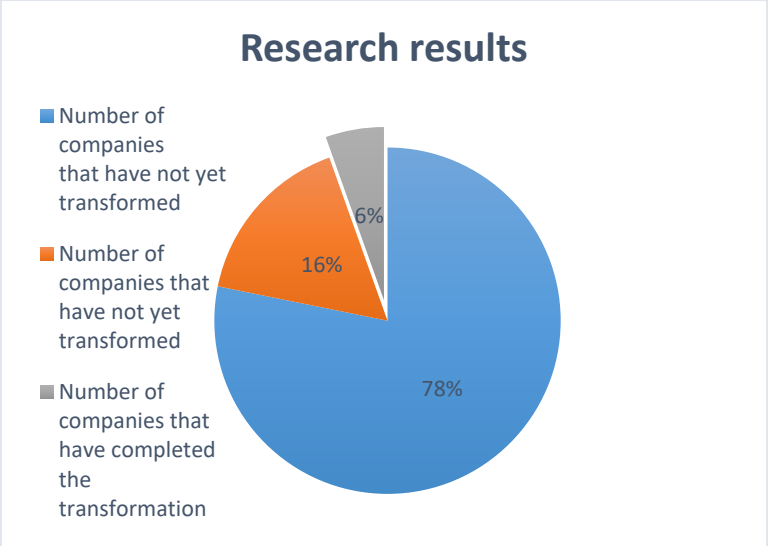

Figure 1: Research result

More than half of the companies have not yet begun their transformation, according to the survey findings. The data is shown in Figure 1 and Table 1. In-depth research shows that these businesses that have not yet transformed are doing so because they do not yet have a systematic and clear understanding of digital transformation. They are still observing the digital transformation of other SMEs. How does digital change work? Starting point for the transformation? The process of digital transformation for SMEs takes time, and it will result in innovation across the board in terms of business strategy and ecosystem reorganization. Can a company truly solve its problems and reduce costs and inefficiencies after deciding to transform? It can be challenging to bring instant benefits to a company in the short term. Additionally, since the COVID-19 spread quickly throughout the world, it has significantly slowed economic development. SMEs typically have weaker risk tolerance and inadequate epidemic prevention strategies. Due to the epidemic, many Businesses have shut down, and others are having trouble coping. Therefore, this also presents a challenge to SME managers in the

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post-epidemic period. Can they quickly fill the "gap" between conventional business scenarios and digital technologies like 5G, cloud computing, and artificial intelligence to expedite digital transformation? Can they quickly sort out their current and medium- to long-term transformation needs?

Companies that are experiencing transformation also now face technical and financial difficulties. The digital transformation is a systemic endeavor that calls for greater investment in talent pools, R&D, and other areas as well. The high expense of transforming technology is the cause of the financial problems. The internal "blood production" function of the enterprises is inadequate, and the external "blood transfusion" system is lagging. For businesses, playing the part of capital leverage and specialized support is challenging. With only one's own capital investment, transformation is challenging to accomplish [12-14].

3. Some Advice for Smes from the Successful Transformation of Siemens

3.1. The Key to Siemens' Successful Transformation

Siemens is a sizable multinational corporation with operations in over 190 nations and about 600 factories, R&D facilities, and sales offices spread out over the globe. Information and communications, automation and control, energy, transportation, medical systems, and lighting are the six major areas on which the business focuses its efforts. With a more than 170-year background, Siemens is a significant multinational corporation that has reflected on, adjusted, and pioneered numerous changes and outstanding accomplishments in the wave of digitalization. Siemens' route to digital transformation can be summed up in three words: organizational optimisation, M&A and restructuring, and eco-building. [3]

Organisational optimisation

Siemens is a multinational corporation that uses the synergies in its diverse business portfolio to actively create value locally. Siemens' overall corporate strategy is clearly defined and accountable, and its traditional strengths of innovation, customer focus, global reach, and financial stability are all emphasized. The company's continued development is ensured by Siemens' transparent and accountable management and control system, which is also required to establish and uphold Siemens' credibility and its business strategy. In essence, Siemens' corporate strategy functions as a ship's rudder that points the way, and the company's organizational structure, which establishes clear lines of authority and responsibility among its crew, guarantees effective operational procedures across the board.

Mergers & Acquisitions

In order to address the technological and budgetary issues required for the transformation, Siemens is using replacement. The company sells companies that are experiencing short-term development issues and then uses the proceeds to restructure assets, buy a number of IT firms, and pool resources. These resources can then be used to directly support the company's efforts to advance digital development in a specific area. This lowers the cost of transformation, improves efficiency, and also enables strategic development through direct investment in digital technologies.

For instance, Siemens' transition started at the start of the 20th century, when one of its primary industries, telecommunications, was experiencing difficulties. The firm then chose to strategically reduce its investments in response to rising competitive pressure, selling the company in 2005 and completely exiting the telecoms market in 2013. However, the absence of digital technology was not caused by the exit from the telecoms industry. Siemens' initial move starting in 2006 was to buy a number of well-known software firms, especially in the field of digital tools like PLM. In the first phase of the transformation, the company, which was optimistic about the potential of industrial automation, took the first step and had the experience to do so. However, in the second phase, it started to accelerate its investments by acquiring and integrating software firms in various market segments. Siemens started to shift the focus of its digital strategy towards vertical-oriented IT software and the integration of internal information digitisation capabilities in 2010, noting that the industrial sector was starting to be impacted by the penetration of new digital technologies such as cloud technology and big data, and after seeing that IT software for different verticals was becoming a new demand.

Ecological construction

The interaction between the devices is the main distinction between the old factory and the modern digital workplace. The devices have the ability to read data separately for systematization and analysis in addition to connecting to one another. Additionally, it is essential for office and production networks

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as well as IT and OT to be connected. Industrial networks serve as the foundation for digitalization because it is impossible to achieve digitalization without contact. Although production at the Siemens facility in Amberg has expanded eightfold over the past 13 years, neither the facility nor its workforce have grown, and more hybrid production is being used. An interconnected network of communication between the production line and plant management forms the foundation for this. According to Siemens, a good industrial network is more about the overall network architecture and, more importantly, forward planning, design, and execution than it is about the effectiveness of the communication products used or the advanced technology [15-16].

Siemens introduced the "Siemens Industrial Networking Specialist Program" in 2018 with this in mind. The program is divided into five modules: training and certification, industrial networking one-stop expert services, industrial networking expertise and knowledge, industrial networking expert skills enhancement program, and industrial networking expert goods and services. Siemens can execute the entire program using its many years of experience thanks to the establishment of this program, offering strong technical, product, and expert support. Of course, Siemens' primary goal in this initiative is to build an ecosystem of digital-era industrial communication networks. Finding partners and experts in processes and technologies will enable the development of industrial communication solutions that cover more industries. At the same time, by providing them with the proper training, we will help them advance their knowledge of industrial networks and aid in the digital transformation of more industrial customers [17].

The result of digital transformation

Suzhou Financial Leasing Company Limited is a prime illustration of Siemens' fruitful involvement in the digital transformation. Suzhou Financial Leasing took the initiative to successfully address the challenges during the epidemic and played an outstanding role as a model for the financial leasing industry to develop a new model of smart property management. Suzhou Financial Leasing was the first non-bank financial institution to collaborate with Siemens and to take a forward-looking approach to leasing property management using IoT technology. A strategic partnership between Siemens and Suzhou Gold Rent was established in November 2019. Leveraging Siemens' extensive expertise in industrial verticals and outstanding advantages in industrial internet convergence services, the two parties worked together to launch a post-rental intelligent management platform. Suzhou Gold Rent took action to try to stop the epidemic and resume work after it suddenly started, during the special period when employees weren't available and the majority of customers were already out of business. Suzhou Gold Rent's post-rental intelligent management platform, which is based on Siemens' data middleware technology, played a key role. [3]

3.2 Successful Experiences that Smes can learn from in Their Transformation

First and foremost, for SMEs that require transformation, it's critical to concentrate on the company's development vision, identify its core values, and create a digital transformation strategy or long-term development strategy that includes future development goals and takes into account the company's development status and characteristics [18].

The practice then begins with the business development strategy providing direction. SMEs currently find it difficult to accomplish what Siemens did to finish the transformation and upgrading using the technique of replacement due to the constraints of their own development scale. They can depend on the platform, however, to aggregate resources, allocate them optimally, control costs, and manage output. It is possible to locate the intersection of important business scenarios and digital technology applications, after which you can upgrade and change your system to revolve around the important business scenarios.

Additionally, SMEs must take extra care to avoid getting sucked into the "equipment volume vortex [4]," or overinvesting in technology. This phenomenon's underlying cause is actually reluctance and distrust of digitization. It must be appropriate for your business, whether it be the acquisition of new equipment or the introduction of new technology. Contrary to popular belief, more modern tools and technology are not necessarily superior. The more equipment there is, the more challenging it is for SMEs to adapt. And managers are put to the test to the extent of authority.

4. Conclusion

A "new infrastructure" with a focus on digitalization and innovation fits with China's long-term vision of more sustainable and high-quality growth in the context of the country's overall economic development. To take advantage of new market opportunities and succeed in an increasingly uncertain future, SMEs must expand their businesses and create value through digital technologies, invest more

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in their talent, enhance their overall service capabilities, and collaborate with knowledgeable partners in the "digital technology" ecosystem.

The successful Siemens transformation case study analysis demonstrates that SMEs must be led by a development strategy that blends their unique development characteristics and long-term development objectives. To fully integrate resources, optimize resource allocation, control costs, manage output, and truly achieve cost reduction and efficiency [5], it is necessary to leverage the platform's power and work with other businesses to address the financial and technical issues that will unavoidably arise during the transformation. Business managers must also avoid getting sucked into the "equipment vortex," which wastes resources and makes the shift more challenging.

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