

Research on Problems and Countermeasures in the Digital Transformation of Dongguan Small and Medium-sized Enterprises (SMEs)

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Abstract: As society enters the era of digital economy, enterprises as an important main body of the digital economy, of which small and medium-sized enterprises (SMEs) occupy half of the country, whether they can keep up with the train of the digital economy has far-reaching impact on the realization of the full digitalization and it is worth exploring. Dongguan is an experimental zone in Guangdong Province for carrying out innovating supply-side structural reform of the manufacturing industry, with a certain digitization foundation and transformation advantages. And there are many small and medium-sized enterprises (SMEs), which is typical. Accordingly, this paper takes Dongguan as an example to analyze the problems faced by SMEs in the process of digital transformation and put forward corresponding countermeasures.

Keywords: Dongguan; Small and medium-sized enterprises (SMEs); Digital transformation; Problems and countermeasures

1 Introduction

Against the backdrop of digital China construction, this study aims to conduct empirical research to thoroughly analyze the current status of digital transformation in small and medium-sized enterprises (SMEs) in Dongguan, revealing their strengths, weaknesses, and development challenges. Taking Dongguan Jingyuan Textile Clothing Co., Ltd. as a case study, it explores key strategies such as executive digital management concepts, talent policies and technological facilities, financial support systems, with the goal of providing practical and feasible suggestions for SMEs in Dongguan.

2 Research Background

The progress of the new generation of information technology represented by 5G technology, big data, artificial intelligence, blockchain, etc., promotes the development of the global digital economy. 2023 Government Work Report shows that the average annual growth rate of the value added of the equipment manufacturing industry and the high-tech manufacturing industry is 7.9% and 10.6%, respectively, and that the value added of the new industry, the

new industry, and the new mode all account for more than 17% of GDP, and the digital economy is development is strong.

The First Session of the 14th National People's Congress in 2023 clearly pointed out that it is necessary to increase support for enterprises to become the main body of scientific and technological innovation. Participation in the whole process from the source, from basic research, applied basic research to technological innovation, results transformation of each link to play the main role^[1].

The economic situation is favourable, policy support is an opportunity for enterprises to transform and upgrade. Digital revolution, imperative, can't catch the digital train, will inevitably become a historical outcast. Digital transformation of traditional manufacturing industry in Dongguan is an inevitable trend, is the new era of science and technology on the new requirements of enterprise productivity, enterprises must firmly grasp the opportunity for transformation, dare to face the problem and solve the problem.

3 The current situation of digital transformation of small and medium-sized enterprises in Dongguan

3.1 Dongguan small and medium-sized enterprises digital transformation advantages

3.1.1 Good foundation of manufacturing industry clusters

In 2019, the added value of Dongguan's advanced manufacturing industry and high-tech manufacturing industry accounted for 54.2% and 42.2% of the industry above the scale, respectively. 2022 On 30 November, the Ministry of Industry and Information Technology announced a list of 45 national advanced manufacturing clusters in Dongguan, three of which were selected, namely, the intelligent mobile terminals, intelligent equipment, and pan-family industry^[2]. Dongguan enterprises not only have a strong digital consciousness, but have also built a trillion-dollar electronics and information industry cluster, in which the machinery and equipment manufacturing industry is building a 500 billion industry cluster.

3.1.2 Government-enterprise cooperation to empower digital transformation

Dongguan has planned a pilot zone for the high-quality development of the digital economy to enhance the effectiveness of government services to enterprises, and to drive digital technology to produce practical benefits in enterprises. According to the "Competitiveness of Chinese Cities in Digital Transformation 2021", Dongguan ranks third in the Pearl River Delta region among the top 100 cities in digital transformation. There is a clear trend of growth in the machinery industry and emerging technology industries, such as the output value of the electrical machinery and equipment manufacturing industry, which grew by 27.4% and 24.1%, respectively, and the output value of biopharmaceuticals in the emerging industries, which grew by 44.1%. At present, Dongguan's digital empowerment system consists of two major manufacturing digital empowerment centers, Huawei and SAP, four digital transformation facilitation centers and 58 transformation service providers. The system in 2021 for Dongguan to achieve revenue and profit growth of 6.4%, 16.5%, the manufacturing industry advantage significantly improved^[3].

3.1.3 Policies favours digital transformation

Dongguan Industry and Information Technology Bureau issued the guiding document "Dongguan Digital Economy Development Plan (2022-2025)", focusing on specific measures for special enterprises, high-precision enterprises, special enterprises, new industries and traditional industry enterprises to reduce the cost of digital transformation of the manufacturing industry, improve the enabling environment, and reduce the cost of digital transformation of the manufacturing industry. It will reduce the cost of digital transformation of the manufacturing industry by the tripartite approach of "subsidies, concessions and contributions" from the government, platforms and enterprises, improve the Empowerment Centre, and promote the digital transformation of 100 key local multi-industry enterprises^[4].

3.2 The disadvantages of digital transformation faced by Dongguan SMEs

3.2.1 The concept of digital management of business executives needs to be improved

Digital transformation requires the full support of executives, such as: understanding of digital transformation, investment of resources and system to promote. Only executives have a high degree of knowledge of digital transformation, its decision-making and resource investment tendency will attract more digital talent into the enterprise, making the enterprise digital transformation process to accelerate. Transformation is a dynamic adjustment process, the scientific nature of decision-making plays a key role in the effectiveness of enterprise adjustment. Unreasonable decision-making will lead to transformation stuck halfway, the effect is not obvious, easy to fall into the transformation exhaustion period.

Digital transformation requires a large amount of investment, including the updating of technology and equipment, personnel training, etc., which is a heavy burden for small and medium-sized enterprises with limited financial capacity, so there is a bias in executives' understanding of and attitude towards digital transformation, and the idea of "a little peace is rich" prevails. At the same time, digital transformation may have an impact on the existing operation and business model of the enterprise, bringing risks to the business status quo. The executives of Dongguan SMEs recognize the importance and urgency of digital transformation, but due to the limitations of their thinking, patterns and digital management capabilities, it is difficult for them to make scientific and effective decisions.

3.2.2 Inadequate supply of talent and technical facilities

Lack of information technology infrastructure, including software and hardware, appropriate to the size and needs of the enterprise. Network infrastructure is the hard foundation of digital transformation, and software is more to adapt to the size and culture of the enterprise. Dongguan SMEs lack of digital transformation talent in two ways, one is less variety, such as IT experts, data analysts and digital marketing experts are not complete; the second is the number of small and uneven skill levels. Manufacturing industry for digital talent demand is increasing day by day, business-oriented digital composite talent gap, according to the data released by the China Academy of Information and Communications Technology, China's digital talent gap in 2020 is close to 11 million, the current overall digital integrated talent gap is about 25 million to 30 million. Most enterprises also regard strengthening the reserve of personnel with digital-related skills (67.7%) and upgrading the company's digital skills to adapt to digital business development (60%) as a mandatory stage of digital transformation.

For enterprises, infrastructure and systems are heavy investment, for small and medium-sized enterprises is even more hurtful high-risk investment, at the same time small and medium-sized enterprises in subsidies and loans compared to large enterprises more restrictions, fewer sources of funding, enterprises in the transformation process not only because of the funds faced with the dilemma of talent and digital facilities, at the same time, the digital talent environment situation is grim, the supply and demand ratio of the incongruity of the next three years of smart Manufacturing digital talent supply and demand ratio is expected to expand from 1:2.2 to 1:2.6, about 70% of the surveyed smart manufacturing enterprises currently have less than 10% of digital talent as a proportion of the overall workforce^[5].

3.2.3 Effective availability of digital resources needs to be improved

Information construction is a precondition for digital transformation. Enterprises in the process of information technology construction, prone to duplication of construction, isolated deployment, the system can't be compatible with each other and a series of problems, information resources can't be effectively utilized, most of the enterprise application system is almost in the "information island" state, greatly affecting the efficiency of information systems. Insufficient supply of local digital service provider resources, according to the Dongguan Digital Economy Development Report (2022), Dongguan, more than 73.41% of manufacturing enterprises in the digital transformation of the use of foreign suppliers to provide products and services^[6]. Only a few manufacturing software companies, such as Pangu, Shufu, and Xianzhi, have local industrial software R&D and sales capabilities, and their overall scale is relatively small. The supply of local digital facilities and equipment is difficult to support Dongguan's overall digital transformation needs. SMEs are generally not capable of transformation technology, the low level of application of digital equipment, the weak level of data collection basis, the low level of application of digital platforms and other issues will lead to the failure of the digital transformation of enterprises.

The manufacturing industry's demand for capital is generally large and long capital operation cycle, business activities and a wide range of capital use, large enterprises often have financial problems, small and medium-sized enterprise capital strength is even more insufficient. The business environment for SMEs is severe, the loan collateral rate is high, the accounts receivable delayed payment for a long time and other phenomena have shown that SMEs are generally weak in financial management capacity. 2021 Central Bank Research Bureau report pointed out that: large state-owned banks credit loans accounted for all the benefits of small and micro loans only 20% of the ratio, small and medium-sized banks is less than 10%^[7]. Bank loans for SMEs in Dongguan is the most important financing channel in the way of obtaining funds, the economic downturn aggravated the information asymmetry, increased the market risk of SMEs operations, but also increased the difficulty of risk management of banks on SMEs, resulting in more difficult financing for SMEs.

SMEs due to their own size limitations, financial structure and operating model is not mature, enterprise strategy transformation, R & D investment, etc. are prone to the lack of funds and can't run the phenomenon. Enterprise risk resistance is weak for the bank credit management efforts to increase. In order to reduce credit risk, banks have raised the financing threshold of small and medium-sized enterprises again and again. This makes it easy for loans to be rejected. The downward pressure on the economy brought about by the epidemic has made it

more difficult for enterprises to raise funds, and the quality of enterprise assets has generally declined.

The economic environment and business conditions are changing rapidly every day, and when it is urgent to help, the government's policies to support enterprises often need to go through many steps, including investigation, review, implementation and so on. Banks then adjust their lending criteria according to the policy, which takes a lot of time, and a group of SMEs will fail in their transformation due to the lack of funds caused by financing difficulties, or even close down due to the direct impact on their normal operation.

4 Dongguan SMEs digital transformation countermeasures

4.1 Enhance the digital management concept of executives and improve strategic planning

Vertical support and horizontal consensus of organizational structure are the guarantee of transformation. Dongguan Jingyuan Woolen Garment Co., Ltd. for example, as a typical traditional labor-intensive enterprises, reference to its transformation path: First, the executives adhere to the digital road. From the past pure processing and manufacturing, gradually to the high-end R & D design, advanced manufacturing and brand marketing in one of the transformation of the enterprise. Second, executives attach importance to technological innovation. Through research and development of patented technology to improve the added value of products, adhere to the digital production, and finally Jingyuan Woolen achieved excellent transformation results, so that the company's products and brands in the global competitiveness, the enterprise import and export volume increased by 24.3%^[8]. The third is to carry out school-enterprise co-operation with local universities and leverage to improve the level of digital management.

Under the premise of strategic planning, digital transformation is carried out step by step from top to bottom, and scientific processes are used to connect various departments of the enterprise, so that transformation thinking and path planning can be deeply rooted in the hearts of people from top to bottom, and jointly achieve transformation goals.

4.2 Improve talent policy and increase technical facilities.

Talent, as the core competitiveness of enterprise development, is also a subjective dynamic factor affecting the digital transformation of enterprises. From the government's side, one can set up special technology transformation points or special bonuses and grants to encourage enterprises to carry out independent innovation. Rather, it is to use laws and regulations to protect enterprise technological innovation, impose severe penalties for infringement of intellectual property rights, and create a good environment for talent development. The third is to fully mobilize university resources, promote school-enterprise strategic cooperation, and combine theory with practice to carry out management innovation, technological innovation and scientific research results transformation, which can not only improve the technical level of enterprises, cultivate entrepreneurial and innovative talents, but also improve the research and development ability of universities and promote the commercialization of innovation results. Attaching importance to the development of higher vocational education, guiding

social opinion to respect skilled workers, and improving the plight of the shortage of highly skilled personnel.

From the perspective of enterprises, on the one hand, they can complete the introduction and training system of digital talents according to actual needs, such as establishing a new project team, formulating training plans, cooperating with the corresponding reward mechanism, transforming internal personnel into specific practical promoters, executors and even managers on the road of digital transformation of enterprises, and realizing the upgrading of human resources. On the other hand, according to the enterprise's own conditions and the local economic level, to set the salary of the talent, to attract relevant talent^[9].

Technology is a decisive element in the digital transformation of enterprises, and the enhancement of the enterprise's own technology affects the final outcome of the transformation and productivity. As early as 2014, Dongguan "machine for man" to enhance the level of technology and quality of traditional manufacturing, has declared "machine for man" support projects 1262, is predicted to reduce the use of more than 70,000 people, the enterprise labor productivity by an average of 65.25%^[10]. It can be seen that through technological improvement, enterprises can not only reduce employment costs, but also improve productivity, bringing direct economic benefits to enterprises.

4.3 Optimize the construction of industrial parks and build efficient information exchange platforms

Good industrial parks and efficient information platforms can promote efficient communication between enterprises in terms of capital, technology and even talent information, and reduce the losses of small and medium-sized manufacturing enterprises due to "taking a detour" in the process of transformation. To optimize the construction of industrial parks. First, the government should build an official information platform to improve the information exchange mechanism of industrial clusters and avoid blind competition and inefficient transformation between enterprises. Secondly, the government should use its influence to cluster small and medium-sized manufacturing enterprises of the same type on the existing basis to create industrial parks, which will focus on providing public services such as policy consultation, free training, and enterprise technology exchanges, and provide targeted assistance to enterprises in need of help to break through the thresholds and realize transformation^[11].

For enterprises, small and medium-sized enterprises should learn from the same industry and the same size enterprises to reduce the cost of trial and error costs and risk costs. And benchmarking enterprises should also help small and medium-sized manufacturing enterprises to form mutual benefit and win-win results between enterprises and promote the overall business environment of the industry.

4.4 Building a financial support system for enterprise transformation and upgrading

Digital transformation requires adequate financial support, for which the following suggestions are made:

First, the government and banks should provide supports for high-growth SMEs. Taking regional banks as a breakthrough, the government provides guarantee endorsement for

high-growth SMEs to obtain medium- and long-term financing from banks. At the same time, banks can expand their off-balance-sheet business, such as providing financing consulting, advisory services and asset management services to help enterprises optimize their financial structure.

Second, the government should set up a special support fund. The government has set up an industrial digital transformation guidance fund, using the influence of transformation benchmark enterprises to guide social forces to increase investment in the transformation of scientific and technological achievements. It invests in enterprises with market prospects, laboratory achievements, proof-of-concept projects, pilot research and development projects, key industries and future industrial scientific and technological achievements transformation projects, ensures the supply of funds for industries and projects, and uses market-based means to boost the development of the digital industry.

Third, improve the guarantee capacity of private credit institutions. Larger guarantee institutions use mergers or reorganization to integrate weaker guarantee institutions to enhance their strength, and establish a security belt to prevent guarantee risks for the transformation and upgrading of small and medium-sized manufacturing enterprises in Dongguan. Industry associations, leading enterprises and other organizations with social influence should take the lead in encouraging guarantee institutions with the willingness and conditions to join forces and provide enterprises with more secure credit guarantees with stronger strength^[12].

Enterprise digital transformation is the process of quantitative change to qualitative change, is the process of opportunities and challenges co-exist, continuous reflection and forward to find out a road of transformation in line with their own characteristics is an inevitable choice. Action is a kind of courage, enterprises should steadily walk every footprint, overcome every challenge, break through the inherent thinking, and actively achieve transformation

5 Conclusion

This study systematically analyzed the current situation and challenges of digital transformation in small and medium-sized enterprises (SMEs) in Dongguan, and proposed corresponding strategies. Despite possessing certain advantages in digital transformation, SMEs in Dongguan still face issues such as outdated management concepts, inadequate technological infrastructure, and a shortage of talent. To address these challenges, it is recommended that the executive team of enterprises undergo digitalization, optimize talent policies, increase investment in facilities, among other measures. These recommendations aim to provide support for the digital development of Dongguan, facilitating its sustainable growth.

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