

Research on the Current Situation, Obstacles and Models of Digital Transformation of MSMEs

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Abstract: With the continuous acceleration of China's digital development process, China has been in the "14th Five-Year Plan", but also the digital transformation as the window of opportunity in the past decade. Then the digital transformation is especially important for small and medium-sized enterprises, which are an important part of China's economy. The epidemic at the moment, all walks of life are experiencing tremendous pressure to control the epidemic, reduce the crossover of people and reduce the gathering of activities. The stagnation of offline as well as traditional trade, the rise of online digital trade. Want to find a way out, digital transformation is the recent way out. The study of the digital transformation of micro, small and medium enterprises on the difficulties of micro, small and medium enterprises in the post-epidemic era and the solution and development to promote the development of China's digital economy is of great practical significance. Using the questionnaire research method, a total of 79 actual controllers or actual persons in charge of MSMEs in the Pearl River Delta were selected as samples in our current questionnaire survey. Starting from 28 questions on difficulties faced in business operation, awareness, understanding and demand for digital transformation, whether digital transformation has been carried out upstream and downstream in the industry, and the current situation, difficulties and political demands of enterprises' digitalization, we investigate the awareness, development obstacles and driving factors of digital transformation among MSMEs.

1. Background and Purpose of The Research

Small, medium and micro enterprises are an important part of China's national economic system, and statistics show that by the end of 2018, there were 18.07 million legal entities of small, medium and micro enterprises in China, accounting for 99.8% of all legal entities of large-scale enterprises. Among them, 239,000 medium-sized enterprises, accounting for 1.3%; 2,392,000 small enterprises, accounting for 13.2%; 15,439,000 micro enterprises, accounting for 85.3%. At the end of 2018, small and medium-sized enterprises absorbed 233,004,000 employees, accounting for 79.4% of the total number of employed persons in enterprises. With assets totaling 402.6 trillion yuan, accounting for 77.1% of the total assets of all enterprises; annual business revenue reached 188.2 trillion yuan, accounting for 68.2% of the annual business revenue of all enterprises (2019 Fourth National Economic Census Information). In recent years, under the superimposed influence of environmental factors such as the new crown epidemic and geopolitics, small and medium-sized micro enterprises generally face operating difficulties, such as rising raw material and labor costs; reduced orders and hindered exports. At present, the development of big data, artificial intelligence, net networking and other technologies make digital technology become the driving force of enterprise innovation, and many traditional enterprises obtain new competitiveness through digital transformation. However, from an overall perspective, the digitalization ratio of Chinese enterprises is relatively low and the level is relatively poor, and there is a large gap with advanced countries such as Germany, the United States and Japan in digital technology and organizational management. Meanwhile, the scale of enterprises is also one of the important variables of digital transformation. Among them, the larger manufacturing enterprises have relatively strong

capital, technology and talent advantages in digital transformation, while traditional MSMEs generally have unclear cognition of digital transformation, as well as limited resources and capacity, and face the dilemma of "unwilling to turn, won't turn, can't turn".

Small and medium-sized enterprises rely on their own strength for digital transformation face multiple problems in the development process, small and medium-sized manufacturing enterprises because of the shared production factors, cost savings, the formation of industry clusters with their own characteristics, through the group approach, the formation of an enterprise far from the competitive advantage, such as Zhejiang Haining leather goods, Guangdong Zhongshan lamps, Guangdong Foshan ceramics, Zhejiang Yiwu department store, Henan Xuchang wigs and other industries Cluster. Under such circumstances, what are the ways that small and medium-sized enterprises can take for digital transformation?

In order to help MSMEs' digital transformation, China's Ministry of Industry and Information Technology and Ministry of Finance jointly issued the Notice on the Pilot Work of Financial Support for MSMEs' Digital Transformation, which plans to use three years to select and support a number of digital public service platforms in phases for subdivided industries. It can be seen that the digital transformation of MSMEs needs industry digital platforms. In recent years, with the development of digital technology, a large number of Internet platform organizations or platform enterprises have emerged. Such as Amazon, Alibaba, Jingdong, Uber, Xiaomi, etc.. These platform organizations are born with digital attributes and involve industries not only in commodity trade, sharing economy, financial services and other industries, but also gradually extend to the production industry in the upstream of the industry chain, realizing deep integration and innovation of technology in various aspects of commodity trading and production. For example, Haier Group's Kaos platform, Sany Group's Root Cloud platform,

and Zongshen Motorcycle's Kumi Network are all successful cases of traditional manufacturing enterprises using digital technology to transform into platform enterprises. Studies have confirmed that platforms can effectively help enterprises cross the digital divide, realize digital transformation, and help them form new value creation models and competitive advantages.

So can MSMEs achieve the purpose of digital transformation by the power of Internet plat? The research team wants to understand the current situation of small and medium-sized manufacturing enterprises in Guangdong Province in digital transformation, the actual dilemmas and obstacles they face, and the transformation modes that exist in practice, so as to understand the actual situation of digital transformation of small and medium-sized manufacturing enterprises and explore the paths suitable for their transformation.

2. Research Methodology

Guangdong is a large manufacturing province in China, and there are many SME clusters, such as Foshan ceramics, Zhongshan lamps and lanterns, Dongguan toys, Xintang denim, etc. MSMEs clusters are a form of organization between enterprises and the market, which can bring into play the joint strength of enterprises and create a competitive advantage far beyond the reach of one enterprise. Studies have proven that there is a significant positive correlation between the development of enterprise clusters and the development of local industries. Traditional industrial clusters not only create productivity, but also promote enterprise technology innovation. In today's booming digital technology, traditional manufacturing industry loses competitiveness and faces the problem of not transforming and waiting to die, and transforming and not necessarily living. MSMEs in Guangdong Province are also facing the problem of second-generation succession. The second generation, because they are well educated, have richer knowledge about digital transformation than the first generation. How to successfully complete the digital transformation through inter-generational inheritance is also the issue of the moment. The research team carried out research on SME industry clusters in Guangdong Province through in-depth interviews and questionnaire research. The research team conducted in-depth interviews with small and medium-sized garment factories in Puning in the early stage to understand the motivation of digital transformation of MSMEs, barriers to digital transformation, the current situation of digital transformation, ways and other issues. As a result of a single 105 enterprises conducted a network questionnaire research. Based on this, the questionnaire was analyzed, and the analysis tool was SPSS26.

3. Data Results

Through the analysis of the data, it is found that the digital transformation of MSMEs in Guangdong Province has low awareness of business owners, lack of capital, technology and talents for transformation, and facing competitive pressure, enterprises have the intention but not the ability to carry out digital transformation, and business owners hope to establish platforms with the government and large enterprises to help MSMEs' digital transformation.

Enterprises face difficulties. SME owners have low cognition of digital transformation, most of the traditional

manufacturing enterprises are aged between 50-60 years old or above, relatively lack of cognition of digital transformation, and still adhere to traditional business methods, the hope of such enterprises lies in the second generation for transformation. At present, under the pressure of economic downturn and external competition, the difficulties faced by small and medium-sized enterprises are mainly less orders, rising costs, poor logistics, financing difficulties and difficulties in product sales. Business owners are well aware of the fact that enterprises either have to transform or be eliminated, but the transformation also faces the lack of capital, talent, technology and restrictions, and want to transform but have the will to do so.

As shown in Table 1, most MSMEs believe that the difficulties faced by the development of enterprises are the rise in labor costs, insufficient orders, and rising raw material and energy costs, with 72.15%, 63.29%, and 59.49% respectively, of which the highest percentage is for the rise in labor costs, the second highest is for insufficient orders, and the least is for raw material and energy costs.

Small and medium-sized enterprises have always been short of talent, yet talent is the key to the development of enterprises. One is that the employment outlook of the workers has changed, the employed are no longer confined to the stereotypes, and actively choose their positions, while the employment side of modern society is gradually broadening, and the dependence on enterprises is greatly reduced; the second is that MSMEs still have an unsound and unscientific employment system, such as unreasonable salaries, chaotic management mechanisms, and unsound welfare systems, etc. The consequence is that it is difficult to attract quality talents to the enterprises, and at the same time, it causes the excellent talents within the enterprises to leave, and the talent loss and cannot increase. At the same time, it causes the excellent talents within the enterprise to leave, the talent loss and cannot increase, and the recruitment difficulty and employment difficulty are becoming more and more serious. The interlocking influence of concept and system has led to the problem of talent loss in MSMEs without finding an effective and feasible solution.

The biggest reason for the lack of orders is the serious homogeneous competition, most small and medium-sized products do not have their own core competitiveness, there is not enough innovation capacity to develop core products, even though it is the Internet + era, there are still many enterprises simply with the Internet tools, and no substantive breakthroughs and transformed into their own core competitiveness. In addition, under the environment of "mass entrepreneurship", more and more enterprises will dare to start their own business, and the market distribution is easily uneven.

At present, the domestic epidemic is effectively controlled, the production rhythm of enterprises is also being restored, the market is gradually warming up, but the price of raw materials continues to rise. The country issued policies related to environmental protection and output reduction, the market supply is insufficient, the supply and demand imbalance at the industrial end; in recent years, affected by the epidemic, the global mismatch of resource supply, China lacks the pricing power of commodities and passively accepts price mobilization, but the domestic epidemic is well controlled, the market demand began to recover, thus the supply exceeds the demand. The solution for enterprises can be to enhance the added value of products with the help of big data precision

marketing; leading enterprises to lead the way to enhance the competitiveness of the whole industry chain; and the government to introduce support initiatives, such as tax and fee reduction policies, to help enterprises tide over the difficulties.

The proportion of financing difficulties, product sales difficulties and poor logistics in the development difficulties of MSMEs is significantly smaller than the first three. In addition to the above-mentioned types of difficulties, the percentage of enterprises choosing other types of difficulties only accounts for 5.06%. It can be seen that enterprises are in a difficult situation and the difficulties they face are closely related to the current situation, and various difficulties are closely related to each other. To solve these difficulties, we must take a comprehensive view, and the development of MSMEs must require strong government support and insist on encouraging and guiding development.

3.1. The information technology construction of small and medium-sized enterprises.

Most enterprises use information systems in the incoming goods, stocking, logistics and warehousing, financial management, human resources management, customer management, accounting for 46.84%, 41.77%, 32.91%, 29.11% respectively; choose other and none accounted for 8.86%, 31.65% respectively. It is not difficult to find that enterprises believe that the need for information processing are more cumbersome events, human processing is

time-consuming and laborious. In traditional business operations, a large number of cumbersome tasks and work processes and leadership approval must be done offline in this way, even if the network communication tools as an aid, but still inefficient and information fragmentation. In addition, in the flowing work involving multiple processes, mistakes in any one of them can lead to unnecessary responsibilities. Many small and medium-sized enterprises in the initial development process, the degree of information technology is not high enough and therefore will rely excessively on human resources, once the error occurs, the production chain will be difficult to adapt over a short period of time, especially in the key positions of the staff. After new people enter the company and the project, they need to face a lot of tedious information, company systems and processes on the handover, which greatly affects the efficiency of work. The project cycle is long, the amount of information is large and extensive, and the use of manual statistical information and analysis of data is a critical point that is extremely prone to errors, and if not handled properly, it can bring huge economic losses to the company. Therefore, business managers are using information systems and willing to put it in the key position of the reason, at the same time, information technology construction is an important foundation for the digital transformation of enterprises, as opposed to foreign enterprises first experienced information technology and then transition to digital transformation, most of China's small and medium-sized micro enterprises have not even completed the construction of information technology (54%), the need for information technology, digital change at the same time, the difficulty can be imagined.

As can be seen from Table 3, 66% of enterprises have their own corporate website and 34% do not have a website, of which 54.43% of enterprises with a website use the online environment to publish information and display propaganda, 20.25% of transactions and settlements, and 40.51% of

enterprises do not use their website at all. It is well known how important customers are to a business, and only by allowing customers to truly understand the basics of a business in depth will they be converted into potential or even paying customers for the business, so having a quality channel for customers to understand the business is vital to the business. However, from the research, the traditional business model has become outdated and cannot fully adapt to the development of this era. Nowadays, the competition for businesses is intensifying on the Internet. If you want to have a place in the market and thus get more and better customers, you have to create a website that matches the positioning of your business. This will not only show the public detailed information and strength of the enterprise, but also help the enterprise to improve the recognition of the brand. Once again, the importance of a corporate website for business development is self-evident. The establishment of their own corporate website is equivalent to find a strong platform for their corporate publicity awareness and visibility. The infrastructure of the website for the promotion and release is the first step in the digital transformation.

3.2. The use of the platform by MSMEs.

the number of MSMEs that do not use digital platforms is significantly higher than the number that do use them. There are 72.15% of enterprises that do not use digital platforms and only 27.85% of enterprises that do use digital platforms. Therefore, the digital status of MSMEs is still relatively weak, and there is no large-scale digitalization for transformation. However, the number of MSMEs conducting e-commerce is only slightly lower than the number of enterprises not conducting e-commerce. It shows that digital transformation in terms of product sales as well as orders is the trend and the transformation that MSMEs are willing to make when they can gain significant benefits by conducting digital transformation such as e-commerce platforms. This fully illustrates that the popularity of digital platforms is not high enough, but digital transformation is imperative, and the statement that companies that do not transform will face elimination seems to have formed a unity of thought in the industry. There are many participants, but only a few successes. Enterprises are facing a more difficult challenge of digital intelligent transformation, the formulation of strategic positioning and goals for transformation is relatively conservative, and the leading position of digital transformation for enterprise innovation and development and transformational change has not yet been established. Digital transformation itself is an innovative work and a protracted battle in practice, and enterprises should establish a set of self-contained systematic methods to guide them to set transformation goals and get on the right track, but so far there is neither a thorough and rigorous theoretical foundation to guide them, nor is it difficult to find representative examples as references.

Digital platforms that companies participate in include: including Amazon, Google, Alibaba International website, etc. The main platform providers are well-known large e-commerce or social platforms at home and abroad. It can be seen that small and medium-sized enterprises can realize the transformation of product marketing data by participating in well-known large e-commerce or social platforms at home and abroad. Taking this as an opportunity, it can force enterprises to carry out digital transformation of marketing, logistics and other processes.

58.51% of enterprises do not use big data, artificial intelligence, cloud computing, Internet of Things, block chain technologies, only 41.49% of enterprises have used these digital technologies to help transform the development of enterprises. Among the many enterprises, most of them have not found landing digital technology, combined with the specific application scenarios of enterprises, to become an important tool to help the digital transformation of traditional industries. The government should accelerate the construction of intelligent and comprehensive information infrastructure so as to realize the transformation from scale to digitalization. In the digital transformation, MSMEs should leverage external forces, embrace the warmth and extensive participation to promote their own digital transformation.

3.3. SMEs' understanding of government policies

As shown in Table 7, the majority of MSMEs know little about the policies related to enterprise digital transformation, and those who are not clear about the policies related to enterprise digital transformation are significantly higher than those who know. Digital transformation is a national development plan, and the national policy guidance and support will make the digital transformation of enterprises faster and better. However, in this survey, we found that MSMEs know little about the policy, so naturally the difficulties and obstacles of digital transformation will be greater. In addition to the epidemic, MSMEs are struggling to survive, and it will be difficult to see the short-term cost investment and short-term return of the transformation. Therefore, on the one hand, the government should expand the support and publicity for digital transformation of enterprises, on the other hand, enterprises should take the initiative to understand the relevant government policies and enjoy the policy dividends to promote their own transformation.

3.4. SMEs' awareness of the pathway to digital transformation.

As shown in Table 8, enterprises think the best way is to get financial, technical and public service support from the government, which is chosen by 77.66% of MSMEs. The second way is to wait for the economic situation to improve, and then the enterprises themselves will carry out digital construction, with 48.94% of MSMEs choosing it. Among them, the number of enterprises that choose to receive financial, technical and public service support from the government is significantly higher than the number of enterprises that choose to carry out digital construction by themselves after the economic situation improves. Many business owners still value the government's support for

digital transformation. Among them, the government gives funds this way, from the "Guangdong Province Manufacturing Industry Digital Transformation Implementation Plan (2021-2025)" and "Guangdong Province Manufacturing Industry Digital Transformation of a number of policy measures" issued can be known, to provide financial support, for enterprises, digital transformation, increase the Internet, big data, artificial intelligence and other applications, it is bound to introduce Advanced equipment, eliminating backward production capacity, which will be a considerable investment, and this is also an important reason why many small and medium-sized enterprises are daunted. Relevant departments should take the initiative to provide loan support for enterprises responding to digital transformation, while introducing policies such as subsidies for technological innovation to help enterprises reduce financial pressure. In addition, the choice of industry or head enterprises for platform construction also accounted for 47.87%, which also shows that small and medium-sized enterprises to take the form of a group, the establishment of a public platform for the industry to provide digital transformation services is also very pertinent a model.

Summary and discussion of models for digital transformation of small, medium and micro manufacturing enterprises

Guangdong Province is a large province with traditional manufacturing industry clusters, and digital transformation of MSMEs is an important driver of enterprise development. From the research situation, Guangdong MSMEs' digital transformation faces the same problems as other local MSMEs' transformation and upgrading, such as insufficient digital awareness, resource constraints, lack of understanding of government policies, and insufficient expectations for the future. From the current digital transformation situation, some MSMEs are still in the information construction stage or pre-information construction stage, as shown in the internal use of ERP and other information software to deal with finance, goods storage management, human resources management and customer management, and the other half of the enterprises do not have information construction; some enterprises use large head platforms, such as Alibaba, Taobao, Jingdong, etc. for Sales, the use of external platforms to force enterprises to digital transformation of marketing and transformation in the management of goods warehousing; there are enterprises using industry digital platform, such as Foshan Zongtaolian, small and medium-sized ceramic enterprises using industry digital platform, enterprises get more targeted services, digital process from production to sales full coverage, conducive to the digital transformation of small and medium-sized enterprises. Have not yet found small and medium-sized enterprises through the self-built platform to achieve digitalization.

Table 1. Compiled by the authors

The stage of the enterprise	Informatization Stage	Part (marketing) digitalization	Digitalization of the entire process	
Route	Buy or build your own	Participate in digital platforms	Participate in industry digital platforms	Self-built platform
Cost/threshold	Low	Low	High	High
Autonomy	High	Low	High	High

The above research analysis shows that the digitalization of small and medium-sized enterprises starts from the construction of information technology, through the

construction of enterprise websites in the form of information release and display, in order to obtain more information exchange and services; then participate in external head

platform, such as Alibaba, Jindo, etc., to realize the digitalization of marketing, this process will force the enterprise to digital construction, and digital marketing to achieve matching. Marketing can in turn force enterprises to digitize in production, logistics and other aspects, such as Handu Clothes, through marketing to drive production increase, on this basis, force enterprises to carry out internal platform construction, leading upstream and downstream suppliers to achieve digital transformation. At the same time, small and medium-sized enterprises can participate in the industry digital platform, such as Foshan Zongtaolian, is the ceramic industry's industrial Internet of things platform, targeted to provide the whole industry chain solutions for the ceramic industry, to help small and medium-sized enterprises digital transformation, from the production side of the industrial Internet of things platform is also gradually extended to the industry upstream and downstream, to drive the digital transformation of the industry. However, the industry's digital platform construction, requires certain conditions, such as the survey, we found that the head of the ceramic industry in Foshan, a total of 15 group launched a digital platform, the platform has a public, in maintaining the industry's development, the development of industry standards, the construction of the industry chain has played an irreplaceable role, whether other industries have such a head of the enterprise is willing to invest in the construction, requires certain conditions;; In addition, the boundaries of the platform, need to find out in practice, the Zotao Union platform to do things that the enterprise does not do, can not do things, and not do things that the enterprise can do, the platform and the enterprise is a service relationship rather than a competitive relationship; furthermore, the sustainable development model of the platform enterprise, need to explore. As can be seen, small and medium-sized enterprises in the development process can choose different platforms to achieve digital transformation according to their own

situation, such as their own website, participate in the head platform to obtain marketing advantages, participate in the industry platform to obtain more targeted empowerment, different platforms, the cost and threshold of participation, as well as different autonomy. Through the platform to force the digital transformation of enterprises from marketing, production, management to organizational model, while enjoying the economies of scale and scope brought by the cluster and platform.

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