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The Effect of Digital Transformation on Superior-Quality Development Improve Operation Capability And Market Competitiveness In Manufacturing Companies In Singapore

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ABSTRACT

Considering how the digital economy is always evolving, Digital transformation is essential to the long-term, high-caliber growth of businesses... The study adopts qualitative research methods, through field research and analysis of Yamazaki Mazak, Siemens AMTC and Speedcargo Technologies during TUM project visit in Singapore, and through semi-structured interviews with company executives and experts. Combined with the analysis of relevant literature and industry reports, this article thoroughly examines how digital transformation may support the growth of businesses. The study's findings demonstrate the critical role that digital transformation plays in the superior growth of manufacturing companies. By enhancing their operational capacities and competitiveness in the market, these companies are able to sustain their competitive advantages. This transformation not only affects enterprise value through internal and external factors, but also promotes the overall improvement of enterprise operating efficiency and production. Internal factors include the degree of product innovation, product quality, etc., while external factors generally include customer satisfaction and the impact of relevant national policies. The study suggests that enterprises, with the support of relevant favorable government policies, have a strategic digital transformation to gain competitive advantage as early as possible. Today, digital transformation in the era of digital economy seems to be driving enterprises to a new future. How enterprises should seize the opportunity of digital transformation, so as to improve the operation capacity and market competitiveness, and have a positive impact on the future high-quality development of enterprises, is worthy of attention and thinking.

Keywords : Digital transformation; high-quality development; operational capabilities; market competitiveness.

1. Introduction

In the current market environment, the global market competition is extremely fierce, and many enterprises are faced with the problems of rising labor costs, low efficiency and insufficient market competitiveness under the

current operating conditions. The traditional business model has been unable to meet the growing demand and development. Given the ongoing advancements in digital technology, digital information technology now permeates every facet of business operations. Companies are also starting to focus on digital transformation. Traditional labor-using industries have been more and more replaced by automation, artificial intelligence, big data analysis and other digitalization, digitalization has become an important means to optimize the production process, reduce human errors, improve resource utilization, thereby reducing operating costs, improve operational capabilities and honest competitiveness, enterprises through continuous strengthening of the level of information and digital transformation, Can reduce the cost and increase efficiency, improve the core competitiveness of enterprises and market share. According to the latest data, global spending on digital transformation is expected to reach $3.4 trillion by 2026, indicating that enterprises are investing heavily in this area. Furthermore, in 2022, the aggregate value of China's digital economy amounted to 50.2 trillion yuan, representing 41.5% of the country's GDP. This underscores the significance of digital transformation in fostering steady and sustainable economic growth in China. (Wang, et al, 2024). These data reveal the profound impact of digital transformation on global business models and how it is a key factor driving business growth and competitiveness. Enterprises not only pursue higher efficiency and lower costs, but also explore new markets and innovative business models through digital transformation to maintain a leading position in the fierce market competition, such as Siemens AMTC introduced industrial edge computing and digital twin technology to help manufacturing enterprises realize the digital transformation of the whole process from design, production to maintenance. Through real-time monitoring and optimization of production processes, production efficiency was increased by 30%; By introducing advanced intelligent manufacturing systems, Yamazaki Mazak has reduced human error in the production process, significantly improved production speed and product quality, and increased production efficiency by 10% to 50%. Today, with the rapid development of the global economy, Under the global digital backdrop, the integration of the real economy with the digital economy has emerged as a new paradigm in business development, additionally, it is crucial to the achievement of high-quality organization development.

This study aims to explore the impact of digital transformation on the operational capability and market competitiveness of Singapore manufacturing enterprises, and analyze specific successful digital transformation strategies. Learn more about how digital transformation can improve your operational efficiency and market competitiveness through case studies of companies such as Yamazaki Mazak, Siemens AMTC and Speedcargo Technologies. The objective of this study is to provide strategic recommendations for manufacturing enterprises to use digital transformation to achieve sustainable and high-quality development, so as to stay ahead of the fierce market competition.

2. Literature Review

This section describes the evidence for a descriptive analysis of the sample of papers claimed. Microsoft Excel" is used to specify descriptive statistics presented in this section. These statistics are designed to identify research trends, types of papers, the distribution of papers in journals, conferences and books, and top journals, as well as the subject area of the papers.

The graph reports the distribution of extracted articles over time. It can be seen that the first publication on the topic of digital transformation appeared in 2000, and the number of relevant papers every year has been on the rise. Since 2011, the number of papers on digital transformation published every year has exceeded 100. Since 2018, the direction of digital transformation has obviously attracted the attention of society and scholars, and the number of papers published every year has become an explosive trend. The number of papers published in 2023 reached 18,000. Annual publication trends indicate a general increase in researchers' interest in the topics under investigation.

Almost 71% of the papers were published in journals, 15% in newspapers, and 10% in undergraduate and master's degree papers. In terms of publishing institutions, 782 papers were published in Shanghai Informatization Yearbook (accounting for 18.67%), 555 papers were published by China Financial Computer (accounting for 13.25%). Telecom World published 492 copies (11.75%).

According to the classification of the academic fields of these papers, as for the main academic fields, 25,526 papers related to information economy and postal economy (30.99%), 13,034 papers related to industrial economy (15.82), 11,461 papers related to enterprise economy (13.91%) were published.

Digital transformation means that enterprises use digital technology to empower all aspects of enterprise production, operation, and technology so as to promote the systematic change of original business processes (Zhang & Du, 2022). At present, the research on the impact of digital transformation on the development of the manufacturing industry mainly focuses on the digital empowerment of traditional production factors. For example, digital empowers enterprises' labor factors. The penetration of digital technology has realized the effective integration of labor factors and data factors, promoted the real-time update and coordination of production links (Jiao, et al., 2021), and contributed to the cost reduction and efficiency improvement of human capital (Xiao, et al., 2022). It not only improves the production efficiency of labor resources (Zhao, et al., 2021), but also improves the overall factor allocation efficiency (Yu, et al., 2022). Digital technology also enables enterprise capital elements. Trust issues in supply chain finance networks have been prominent for a long time. Digital transformation transforms enterprise behaviors into information data that can be registered and stored (Gong, et al., 2021) and alleviates financing constraints by improving information transparency and reducing financing costs (Li, et al., 2022). It reduces the trust crisis in the supply chain lending relationship. Finally, the technological elements of digital technology enable an important field of existing research. With the help of digital technology, enterprises can open up the channels of integrated innovation (Zhang, et al., 2023) and enhance the dynamic capabilities of enterprises (Warner and Wager, 2019). To "escort" enterprise technological innovation by optimizing human capital and improving corporate governance (Xiao, et al., 2022). 2. Digital transformation enables enterprises to develop in a high-quality way. Many businesses currently take advantage of the trend to implement digital transformation as a result of the convergence of digital technology and the traditional real economy. The popularity of digital technology within enterprises makes the "enabling" effect more and more significant, improving the systematic ability of enterprises to acquire, control, and manage resources (Leong, et al., 2016) and expanding the scope of enterprise resource acquisition. To realize efficient dissemination of data elements in supply chain circulation, Digital technology permeates every facet of business production, management, and operation, maximizing the effectiveness of resource allocation for innovation. (Yu, et al., 2022), and breaking the resource constraints of innovation to achieve more production performance under the limited resource boundary (Loebbecke and Picot, 2015).

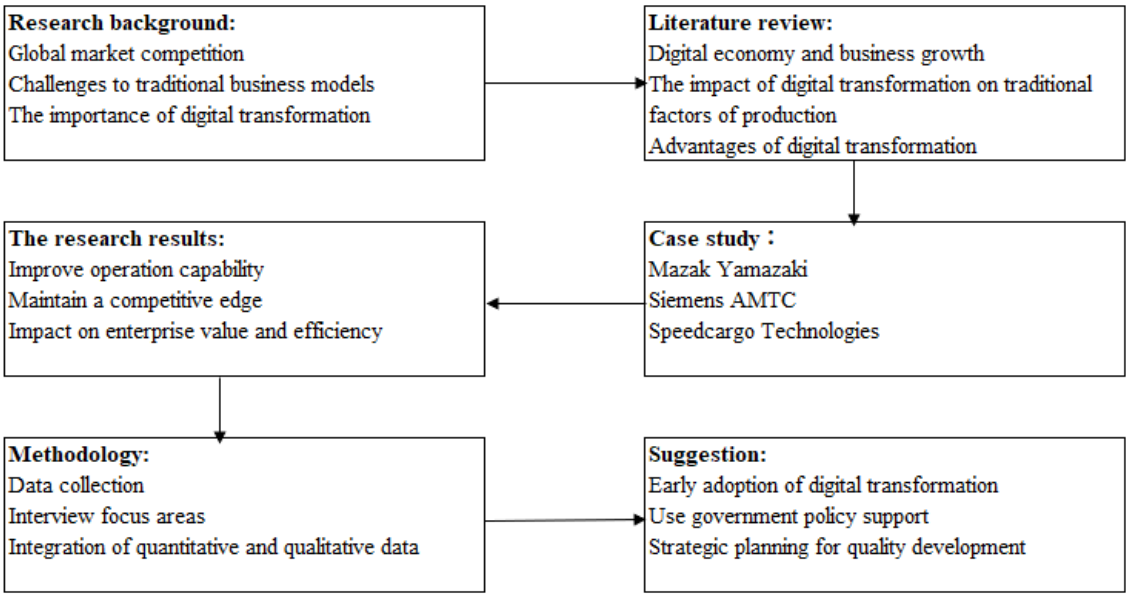
Through research and analysis, papers related to digital transformation have highlighted several advantages of digital transformation:1. Save time and cost: the popularization of digital applications can save a lot of time and control costs (Liu, 2023).2. Improve work efficiency: Digital applications require employees to improve work efficiency. (Medyński et al., 2023). 3. Control service demand: Digitization can help control service demand through online information sharing to fully understand equipment operating status, etc. (Medyński et al., 2023). 4. Drive product development: A digital approach ensures that customers receive the best service and communication in the industry while ensuring maximum efficiency. (Burchardt & Maisch, 2019). 5. Meet the needs of industry development: digital transformation is the mainstream of the market, and more and more enterprises are facing the needs of digital transformation. (Liu, 2023). 6. Drive economic growth: The digital economy will drive the entire economic growth, and digital transformation will be everywhere. (Li, 2023). 7. Change the way businesses operate: Digital transformation will rise to the macroeconomic level and change the way businesses operate. (Li, 2023). 8. Reshaping the economy: Digital transformation will reshape the economy as it changes the way businesses operate. (Li, 2023).

Based on the analysis of existing literature, digital transformation mainly emphasizes the important role of high-quality development of enterprises in the following aspects:
1. Improve total factor productivity: By introducing advanced digital technologies, such as the Internet, big data, cloud computing and artificial intelligence, digital transformation changes the production mode and management efficiency of enterprises, thereby improving the total factor productivity of enterprises and providing impetus for high-quality development of enterprises (Liu, 2023) . 2. Optimize the quality of internal control: Digital transformation promotes the optimization of the internal control system of enterprises, improves the risk management ability and decision-making quality of enterprises through the construction of information systems and data management, and creates a good internal environment for high-quality development (Wang et al., 2023). 3. Enhance information transparency: By improving the information circulation mechanism, digital transformation enhances the information transparency of enterprises, reduces the degree of information asymmetry, helps improve market trust, reduces financing costs, and thus supports high-quality development-4 . (Medyński et al., 2023). 4. Reduce financing constraints and default probability: Digital transformation can help improve the financial performance and credit rating of enterprises, reduce financing constraints and default probability of enterprises, obtain more financing opportunities for enterprises, and support the high-quality development of enterprises (Wei, 2023). 5. Innovative development and ESG performance: Digital transformation promotes the innovation capacity of enterprises, enhances the competitiveness of enterprises through technological and service innovation, and also contributes to the performance of enterprises in environmental, social and governance (ESG), further promoting high-quality development (Dai & Fang, 2024). 6. Solve the problem of "field mismatch" and "stage mismatch": Digital transformation helps enterprises to solve the mismatch between industry attributes and life cycle stages in the process of high-quality development and achieve cross-industry and cross-stage development through technology and management innovation (Wei, 2023). 7. Regional economic development: There is variation in the effects of digital transformation on the high-quality growth of businesses in various areas, particularly in those with advanced stages of the development of the digital economy, digital transformation plays a more significant role in promoting the high-quality development of regional economy (Wei, 2023). 8. Cultivation of new economic growth points: Digital transformation provides new growth points for enterprises. Through the application of digital technologies, Businesses may generate new markets for their goods and services, as well as new income streams and business models. They can also offer development of high-quality fresh energy and direction (Wei, 2023).
In the era of continuous development of digital technology, research on digital transformation-enabling enterprises is becoming more and more in-depth. When studying digital transformation in the world, it is often associated with keywords such as digital economy, Internet transformation, industrial upgrading, and enterprise value. At present, the main research directions for digital transformation in the world include digital transformation strategy, digital marketing means, digital management mode, etc. The key issue of digital transformation enabling high-quality enterprise development is digital transformation strategy, and factors such as enterprise strategy, management structure, and technology should also be considered.

3. Contextual Framework

This study starts from the role of digital transformation in achieving high-quality development of manufacturing enterprises in Singapore. We analyze the definition and importance of digital transformation, the challenges manufacturing companies face in the digital process, and demonstrate implementation strategies through case studies (e.g. Yamazaki Mazak, Siemens AMTC, Speedcargo Technologies). These cases illustrate how enterprises can use advanced technologies such as intelligent manufacturing systems, industrial edge computing, and digital twin technology to optimize production processes, reduce operating costs, improve product quality and innovation capabilities, and thus maintain a competitive edge in the market. It also explores the role of government policy support in driving digital transformation and its potential impact on the future

development of enterprises, providing a systematic framework for Singapore manufacturing enterprises to understand and implement digital transformation for sustainable, high-quality development.



4. Methodology

In the research methods section, we will use qualitative analysis to deeply explore the impact of digital transformation on enterprises. The study plans to collect data through semi-structured interviews were conducted with the companies' executives. These interviews focused on digital transformation strategies, implementation challenges, results achieved, and the impact on corporate culture and workflow.

To enhance the theoretical depth and breadth of the research, the author also analyzed existing academic literature, industry reports, and case studies. This includes, but was not limited to, papers that examined the specific impact of digitalization on business operational efficiency and market competitiveness, as well as industry analysis reports that explored how information technology redefined internal and external interactions. Through this approach, we can understand the complexity of digital transformation and its specific impact on business development from a macro and micro perspective. In addition, the use of hybrid approach allowed us to integrate quantitative data and qualitative insights to provide strategic advice on how businesses can effectively respond to and leverage digital transformation.

Through a thorough examination of scholarly literature and case studies, we are employing the techniques of secondary data collecting and literature research to provide a thorough discussion of the effects of digital transformation on businesses. First, we gathered a substantial number of articles and books on digital transformation and its effects on corporate operations and market competitiveness by exploring academic databases (such Google Scholar, CNKI, etc.). We now have a strong theoretical basis to identify the main forces behind and possible effects of the digital transition thanks to this research.

The second essential element of our system is case studies. We can learn about the tactics, difficulties, and results of businesses that have effectively executed digital transformation by examining case studies of these organizations. For instance, how sophisticated intelligent manufacturing systems and automation technologies might be used by specific manufacturing businesses to increase production efficiency, enhance product quality,

and lower operating costs. We have compiled a number of success criteria and takeaways from these case studies that serve as guidelines for other businesses.

We have done the following to make sure that our literature study was thorough and organized: To find papers and books on digital transformation, first search the academic database. Then, filter the literature based on the study subject and research question, choosing the highly relevant and valuable works for academic purposes. After that, a thorough analysis of the chosen literatures is conducted, and the study methodologies, findings, and theoretical contributions are compiled. This allows for the identification of research parallels and discrepancies. Ultimately, a thorough summary of the study's findings is provided, and the theoretical framework and analytical model are built.

Using this method, we may get a thorough comprehension of the intricacy of digital transformation and its particular influence on corporate development on a theoretical and practical level. This method of gathering secondary data and reviewing literature guarantees the scope and profundity of the study and offers trustworthy strategic recommendations for the company.

5, **CASE ANALYSIS**

In the research on the high-quality development of enterprises through digital transformation, we conducted semi-structured interviews with corporate executives through qualitative analysis, and analyzed relevant academic literature, industry reports and case studies. This hybrid approach allows us to gain an in-depth understanding of the complexity of digital transformation and its specific impact on business development from both macro and micro perspectives.

Enterprise interview results

Through interviews with senior executives at several manufacturing companies, we found that digital transformation has had a significant impact on the development of their organizations in the following ways:

Yamazaki Mazak iSMART Factory as a leading global machine tool manufacturer, they have a very rich investment and operational experience in the realization of intelligent factory manufacturing. Through interviews, we learned that they improved production efficiency and product quality through the following measures: Strategy 1: Introducing advanced intelligent manufacturing systems, Yamazaki Mazak has introduced advanced intelligent manufacturing systems, such as automated production lines and machine vision technology, to reduce labor costs, reduce human error, free employees from inefficient work in order to handle higher order work, facilitate enterprise innovation, and increase production efficiency by 10-50%. Strategy 2: Real-time data monitoring and analysis: Data monitoring and analysis are the "eyes" of digital production in manufacturing enterprises. Yamazaki Mazak captures real-time operating status data of all aspects in the workshop through seamless integration of various systems, including equipment operating parameters, process progress, product quality, etc. These data can provide enterprises with a clear picture of the production site, so that managers always grasp the production operation dynamics, timely detection of abnormal situations and response. This immediate feedback and rapid response greatly shorten the time for problem troubleshooting and improvement, improve the stability of the production process, and increase the production efficiency by about 30%. Strategy 3: Applying Automation and Robotics: Yamazaki Mazak has increased the flexibility and responsiveness of the production line by applying automation and robotics. The investment of automation equipment and robots allows companies to no longer devote large numbers of employees to perform tasks that can be automated, but to reallocate these resources to more complex and value-added work, while automated robots are able to perform tasks without interruption and rest without interruption, and they are able to complete work at a higher speed than traditional manual operations. While maintaining consistent accuracy, the flexibility

and responsiveness of the Yamazaki Mazak production line has increased by approximately 30% through automation and robotics.

Combined with the actual case of Yamazaki Mazak, we conducted a success factor analysis. Having a clear digital strategy: Yamazaki Mazak, which spends about 5% to 10% of its total revenue on digital each year, has a clear digital strategy, clear goals and a roadmap. This ensures that the entire organization is working towards a common goal and provides direction for digital transformation; 2. Data-driven decision making: Data is at the heart of business digitization. Yamazaki Mazak collects, analyzes and applies data to make more informed decisions. Yamazaki Mazak has built data analytics capabilities and the corresponding infrastructure, and fostered a data-driven culture that focuses on data objectivity and accuracy in the decision-making process. 3. Fostering digital culture: Digital transformation is not only about the application of technology, but also requires a digital culture and way of thinking. Yamazaki Mazak encourages its employees to take an active role in digital transformation by embracing new technologies, continuing to learn and explore innovation. 4. Continuous improvement and learning: Digital transformation is an evolving process, and Yamazaki Mazak spends around 1% to 3% of its operating budget annually on employee training and upskilling through continuous improvement and learning. Identify potential improvement points through regular evaluation and feedback mechanisms, and adjust strategies and execution plans in a timely manner.

Siemens Advanced Manufacturing Transformation Centre (AMTC) - As a digital solutions giant with multiple digital transformation experiences, Siemens is committed to driving the high-quality development of Singapore's manufacturing industry. To help manufacturing companies achieve digital transformation from design to production to maintenance by providing comprehensive digital solutions: Strategy 1: With the introduction of industrial edge computing, the needs of companies in the industrial sector have become increasingly complex, and even as digital transformation has begun, many companies in the industrial sector still rely on traditional, often outdated, custom built solutions to run their monitoring and control systems, and this harmful dependence on increasingly obsolete and rigid software architectures is not easy to shake off. Through the introduction of industrial edge computing technology, AMTC has successfully helped these companies achieve their key business objectives with modern solutions such as ease of use, remote monitoring, and the ability to support innovative technologies and accelerate digital transformation. Strategy 2: Apply Industrial Artificial Intelligence and process analytics. With the rapid development of artificial intelligence technology, more and more enterprises are looking for ways to integrate artificial intelligence technology into their production processes to improve quality, reduce costs and improve efficiency. In the manufacturing sector in particular, digital transformation has become key to business growth, and through the application of industrial artificial intelligence (AI) and process analytics technology, AMTC helps companies monitor and optimize every step of the production process. Industrial AI is able to predict equipment maintenance needs through machine learning algorithms, optimize production schedules, reduce downtime, and improve equipment utilization by 20 to 40 percent for customers. Strategy 3: Leveraging digital twin technology, AMTC understands that as the company transitions from traditional practices to a digital-first approach, using digital twins as a compass to develop different transformation solutions for different customers, using digital twins technology to provide customers with predictive analytics and deep learning, the ability to improve business processes and provide recommendations, and better decision intelligence. To improve decision making. Strategy 4: Advanced Industrial Internet of Things (IIoT) solutions, manufacturing enterprises in the process of digital transformation, the main challenge is to make full use of the data collected from IIoT devices and control systems in the production process, AMTC by connecting advanced sensors, machines and analytical tools, customized digital transformation solutions for customers. Enables companies to more efficiently monitor and optimize production processes, thereby increasing productivity, reducing costs and improving product quality.

Based on the actual case of AMTC, we analyzed the success factors: 1. Advanced technology. As an industrial partner, AMTC uses advanced technology to transform entrepreneurial challenges into opportunities, stride towards a successful digital future, and significantly improve its competitive advantage. 2. Talent introduction and training. AMTC attaches great importance to the training and development of digital talents in the process of digital transformation. AMTC recruits and develops a large number of digital professionals and has a strong leadership team in the digital field to ensure the success of digital transformation. 3. Data-driven decision-making. AMTC has always taken data-driven decision-making as an important strategy. By collecting and analyzing a large amount of customer data, AMTC can understand customer needs in real time and improve customer satisfaction through corresponding adjustment schemes.

Speedcargo Technologies As a technology startup, Speedcargo focuses on digital solutions for the logistics industry. Its innovative technologies transform traditional freight and warehousing operations. Strategy 1: Apply 3D vision technology and AI to optimize the layout of freight routes and warehouses (Cargo Eye system), which scans and measures the size and shape of cargo through visual technology, and then applies and analyzes this data to optimize the layout of freight routes and warehouses, improving space utilization and transportation efficiency by 5%. Strategy 2: Real-time data analytics and automated warehousing solutions increase revenue by 20 to 25 percent by collecting and analyzing real-time data to help customers optimize warehouse management and inventory control, thereby improving operational efficiency and reducing inventory costs. At the same time, automated storage solutions can achieve rapid processing and sorting of goods, further improving storage efficiency. Strategy 3: Artificial Intelligence and Machine Learning technologies provide accurate forecasting and decision support, Speedcargo leverages artificial intelligence (AI) and machine learning technologies to provide accurate forecasting and decision support for logistics operations. AI and machine learning algorithms are able to analyze large amounts of historical and real-time data to predict demand trends and potential problems, thereby helping customers optimize logistics operations and make more informed decisions.

Combined with the actual case of Speedcargo, we conducted a success factor analysis: 1. Cooperation and win-win partnership, Speedcargo has established long-term stable relationships with its suppliers and customers to achieve the digital transformation of the supply chain and improve production efficiency and product quality; 2. Innovation and experiment, Speedcargo encourages employees to put forward innovative ideas, and establishes experimental mechanisms to quickly verify and iterate ideas, so as to improve the enterprise's innovation ability and market competitiveness; 3. Data-driven decision-making: Analyze various data obtained by AI and robot algorithms to predict future trends and discover potential risks, and use them to make decisions and business strategies.

Digital transformation matrix

Company	**Technological innovation**	**Data analysis and utilization**	**Automation and intelligent systems**	**Management support**	**Employee and customer training**

Yamazaki Mazak	Intelligent manufacturing system, robotics	Real-time data monitoring and analysis	Automated production lines, robots	Monthly evaluation and promotion by management	Fixed training budget every year
Siemens AMTC	Industrial edge computing, digital twin technology	Real-time data monitoring and analysis	IIoT solutions	Management quarterly evaluation and promotion	Fixed training budget every year
Speedcargo	3D vision technology, AI	Real-time data analysis and automated warehousing solutions	Automated storage solutions	Management monthly evaluation and promotion	Fixed training budget every year

Source: TUM project site visit and interview in Singapore

New digital transformation model

Digital transformation is the trend of modern enterprises, which can help enterprises better adapt to the rapidly changing market environment, improve efficiency, reduce costs, and provide a better customer experience. But the success of digital transformation depends not only on how much a company invests in technology, but also on factors such as the culture, organizational structure and management approach within the company.

1. Digital innovation, digital transformation requires innovation and experimentation to push the enterprise forward continuously. Enterprises need to encourage employees to put forward innovative ideas, and establish experimental mechanisms to quickly verify and iterate ideas, so as to improve the enterprise's innovation ability and market competitiveness.

2. Adequate digital strategic planning. Digital transformation requires the establishment of clear strategic planning, including the development of clear goals and phased plans. Companies need to consider the long-term impact of digital transformation and ensure that strategic planning is aligned with business objectives and can adapt to changes in the market. At the same time, it is also necessary to establish an effective monitoring mechanism and adjust the plan in time.

3. Data-driven business decision-making, the core of digital transformation is data, so data-driven decision-making is the key to the success of digital transformation. Enterprises need to establish a sound data collection, analysis and application system, make business decisions based on data, and constantly optimize data and iterative adjustments, so as to promote business process optimization. Businesses need to collect and analyze large amounts of data and use it for decision-making and strategy development. Data-driven decision making can help organizations better understand customer needs and market trends, optimize business processes, and increase efficiency.

4. Build an enterprise digital culture, which is one of the key factors for the success of digital transformation, driving employee engagement and leadership support. Corporate culture should encourage employees to embrace new technologies and approaches, and emphasize the value of experimentation, innovation, and rapid response to market changes. When corporate culture ADAPTS to digital transformation, employees are more willing to experiment with new technologies and leadership is more willing to approve corresponding investments.

5. Talent introduction and training, talent is one of the key factors for the success of digital transformation, enterprises need to have enough digital professionals and digital leaders. Digital transformation requires talents with digital skills, such people are to do the expert talent, rather than the amateurs to guide the expert people,

enterprises need to develop talent introduction and training plans to attract and retain high-quality digital talents. In terms of training, enterprises need to establish a variety of digital transformation training courses and platforms to learn from advanced cases to help employees improve their digital skills and capabilities.

6. Data-driven decision-making, continuous improvement, data-driven decision-making is one of the key factors for the success of digital transformation. Businesses need to collect and analyze large amounts of data and use it for decision-making and strategy development. Data-driven decision making can help organizations better understand customer needs and market trends, optimize business processes, and increase efficiency. Digital transformation is an ongoing process, and businesses need to continuously improve and optimize digital technologies and processes to maintain a competitive edge. Continuous improvement can help enterprises to continuously improve efficiency and effectiveness to adapt to changing market demands.

7, the cooperation and win-win of partners, digital transformation requires cooperation and win-win, in order to achieve the optimization of the industrial chain and maximize the value. Companies need to build mutual trust and mutually beneficial partnerships with partners in the ecosystem to jointly drive digital transformation and achieve value chain integration and synergy.

MAS roles

Monetary Authority of Singapore (MAS), as a government department, plays a more decision-making role in the government. Through the interview with MAS, we can understand that the Singapore government plays a positive role in the digital transformation of enterprises. By formulating a number of policies and regulations to support digital transformation, setting up digital technology teams to provide digital financial services for enterprises, actively cooperating with enterprises and other ways to support enterprise innovation and development, encouraging enterprises to adopt new technologies and improve market competitiveness.

ITM 2025 sets out five strategies, including enhancing asset class strengths, digitalizing financial infrastructure, driving Asia's net-zero transformation, shaping the financial networks of the future, and developing a skilled and adaptable workforce. Through these strategies, MAS will further develop Singapore's position as a leading international financial centre in Asia, not only providing strong policy support and financial assistance to businesses, but also enhancing the efficiency and competitiveness of Singapore's financial markets by driving technological innovation and digital transformation. These efforts have provided a solid foundation for Singapore's economic development and corporate innovation.

ENTERPRISE DIGITAL TRANSFORMATION MOTIVATION

1. External motivation

(1) Development of digital economy

Digital economy is a new concept related to digital technology, which has affected all aspects of human society, from production to exchange, from learning to work, from daily life to space exploration, basically has been digitized. Digital technology is speeding up the integration of the real economy, which further encourages the integration of the digital economy and other industries. In recent years, China's digital economy has made great strides and has emerged as a new engine to support the high-quality development of the Chinese economy, and the economic development space is enhanced. At the same time, computing power is known as a new productivity, the digital era is calling for an efficient "computing power network", Digital transformation has become a crucial tool for businesses to upgrade and transform in order to increase their core competitiveness. This is because it helps to foster the deep integration of digital technology and the real economy, which in turn enables the transformation and upgrading of traditional industries, the emergence of new industries, new formats, and new models, and the continuous strengthening, improvement, and expansion of China's digital economy. The growth of the digital economy has a significant influence on the establishment of high-caliber businesses.

(2) Relevant policy support

Behind the superior-quality growth of companies enabled by digital transformation, it is inseparable from the support and encouragement of relevant policies. In recent years, in order to encourage the digital transformation of enterprises, the Singapore government has frequently introduced relevant support policies to promote the transformation of enterprises to a more high-end, smarter and greener direction. First, Singapore launched an important framework for the government's digital transformation, the Digital Government Blueprint, to build a "digital core" government through the use of data and the application of new technologies. The blueprint updates key performance indicators, such as that at least 70 percent of government systems will migrate to commercial cloud platforms by 2023. Second, the Smart Nation Initiative aims to enable the digital transformation of health, transportation, urban life, government services and business through technology integration. The government supports the development of businesses and citizens by investing in infrastructure and creating open platforms. In addition, the government is expected to spend S $3.3 billion in 2023 on the information and communication technology (ICT) sector, with a focus including working with industry to develop projects and reducing public sector procurement costs through bulk tenders. These projects cover enterprise software as a service, managed support services and equipment procurement. in order to hasten the Digital Economy's growth, the Singapore Government has also launched the Digital Economy Framework for Action, which aims to enhance productivity and efficiency by digitizing various industries and support the global expansion of enterprises. The Government provides progressive support to small and medium-sized enterprises (SMEs) to help them succeed at every stage of their digital transformation. In the 2023 budget, the government introduced the Job-Skills Integrators Programmed to optimize training and job matching through collaboration with industry, training providers and employment promotion partners. In addition, the National Productivity Fund received a S $4 billion boost to fund productivity enhancement and continuing education training. These policies and initiatives reflect the Singapore Government's determination to promote digital transformation and high-quality economic development and strive to enhance the competitiveness of the country and enterprises through technology and innovation.

(3) Diversification of customer needs

With regard to the digital economy, new technologies and new business models emerge in an endless stream, which also changes customers' demand for products in the direction of intelligence and digitalization. To some extent, this also reverses the transformation of enterprises in product design, production and other aspects to the digital transformation, so as to meet the relevant needs of customers. Li Chunfa et al. (2020) believe that in order to meet customers' rapidly changing demands with The Times under the background of digital economy, enterprises need to efficiently organize production on the basis of quickly and accurately capturing changes in consumer demands (Li, et al., 2020). Consumer behavior is more personalized, characteristic and diversified, which are the characteristics of today's consumer behavior. As consumer behavior is affected by new technologies such as Internet technology, digital technology and artificial intelligence technology, changes in consumer demand force enterprises to transform and upgrade. Driven by changes in demand, enterprises can make use of digital transformation to empower themselves, which is an inevitable choice for them to meet customer needs and improve their comprehensive competitive strength

2. Internal motivation

(1) Reduce costs, increase efficiency and improve market competitiveness In the context of the digital economy, enterprises need to have a strong core competitiveness in order to win the fierce market competition. Wu & Hu (2023) believe that digital transformation can enable enterprises to reduce production costs and has a positive effect on shaping organizational resilience, which can also provide enterprises with competitive advantages(Wu & Hu, 2023). The manpower, material and financial resources invested by enterprises in production and operation require higher costs. The digital transformation of enterprises can reduce labor costs and production costs, thereby improving production efficiency and laying a good foundation for improving the competitiveness of enterprises in the future. (2) Invest more in R&D and enhance product innovation. Enterprises are only able to take the lead in resource allocation when they are the core of innovation. As a result, businesses are essential

to the advancement of industrial digitalization. First, digital transformation promotes product innovation and service innovation in enterprises. Through digital technology, enterprises can gain a complete insight into user needs, so as to develop products that better meet customer needs. Secondly, digital transformation enables enterprises to virtualize product design, and through digital-related technologies, reduce the time of the entire design-R & D - production process, reduce trial and error costs, speed up the time to market, and make products meet customers faster. Finally, digital transformation can realize collaborative innovation among enterprises. Internal and external technologies and innovations of enterprises can share knowledge and innovate through digital platforms to accelerate technological innovation and product innovation of enterprises. Therefore, digital transformation plays an important role in promoting enterprise innovation.

6. **Result and Discussion**

Digital transformation enables high-quality development of enterprises

1. Build platforms related to digital transformation

In recent years, with the rapid development of information technology, enterprises should not be eliminated by the market, but also adhere to The Times' trend of digital transformation and upgrading; thus, building and enhancing digitally associated fundamental platforms is essential to digital transformation. Wang Qiang et al. (2020) believe that digital capabilities and value creation capabilities are crucial to enterprises' digital transformation and propose that enterprises should focus on improving digital infrastructure, digital governance, and digital hidden danger elimination and leap-over capabilities (Wang, Wang, & Liu, 2020).

The construction of digital platform first needs the support of digital technology, such as artificial intelligence, big data, cloud computing and so on. Secondly, it is necessary to strengthen the collaborative innovation among various departments. The construction of the digital transformation platform requires the participation of all employees of the enterprise and the support of various organizational structures, so as to break the information barriers between various departments, strengthen the communication and cooperation of various departments, and improve work efficiency. Finally, we need to achieve shared cooperation and common development. The construction and improvement of digital platform requires the continuous participation of new technologies, so it is necessary to realize the open sharing of digital technology and carry out cooperative development, open up the internal and external technical barriers of enterprises, and accelerate the construction process of digital platform.

2. Build a digital talent team

The digital transformation of enterprises cannot be separated from the support of digital talents, and enterprises need to establish professional digital talent teams through training or mining. First, enterprises should establish a reasonable digital talent training system and digital talent training plan, not only to enrich the theoretical training, but also should combine the offline work rotation and other related systems, combine theory and practice, and train a group of experienced digital talent teams. Secondly, regarding the introduction of digital talents, talents with digital skills and experience should be introduced from universities as far as possible to serve as the core strength of the enterprise digital talent team. Of course, enterprises should provide sufficient promotion space and development opportunities for digital talents and provide rich benefits to retain talents. At the same time, enterprises should also establish appropriate evaluation measures to stimulate the enthusiasm and creativity of digital talents and attract more high-quality digital talents to join the enterprise.

3. Establish enterprise digital management system

For enterprises, digital transformation is a comprehensive transformation from top to bottom, from inside to outside, so it is essential for enterprises to establish a digital management system. Ding Yong gang believes that when enterprises carry out digital transformation, they should also pay attention to product quality after digital transformation, instead of focusing on enterprise digital transformation and reducing customer satisfaction (Ding, 2022). Therefore, they should also pay attention to the establishment of enterprise management system during digital transformation. First, in the stage of product development and design, big

data can be used to analyze the market demand, and after obtaining the results, the computer is constantly used to simulate and optimize the product, to make the finished product reach consumer satisfaction as far as possible. Secondly, in the production and manufacturing process, through the monitoring of the Internet of Things and the digital platform, the intelligent manufacturing of products is realized, the full automation of the product production process is achieved, and the production efficiency and production quality of products are improved. Finally, in terms of marketing, we can improve brand awareness, market share and customer satisfaction through digital marketing means and digital sales channels such as social media marketing and push through the circle of friends.

Digital transformation empowers enterprises with opportunities and challenges for high-quality development

In the context of digital economy, the digital transformation carried out by enterprises also brings unknown opportunities and challenges to enterprises. In order to adapt to the changes in the competitive market and economic environment, many enterprises have to undertake digital transformation. Digital transformation enables high-quality development of enterprises, which can not only improve the production efficiency and core competitiveness of enterprises, but also create a solid basis for the future, high-caliber growth of businesses.

Opportunity

(1) Improve operational efficiency

Through digital transformation, enterprises can optimize processes, rationally allocate resources, reduce labor costs, logistics costs and storage costs, thereby improving production efficiency and service quality, reducing repetitive work and manual intervention, improving operational efficiency, and making enterprise production processes more intelligent and refined. For example, to achieve remote monitoring and management of equipment, you can establish the Internet of Things system, but also improve the stability and reliability of equipment; Through the use of cloud computing technology to achieve data sharing, break the data barriers and information asymmetry; Artificial intelligence technology can also be introduced to improve the production efficiency and quality of products by achieving full automation and intelligence of the production process. (2) Improve market competitiveness

Digital transformation can help enterprises realize the needs of the market and consumers, optimize and update products to meet the market demand, enhance market competitiveness, improve market share and corporate profitability, and at the same time, digital transformation can also reduce costs and improve efficiency, enhance the market competitiveness of enterprises. For example, IKEA launched the IKEA online platform, consumers can choose through the IKEA online App, buy products that meet their needs, IKEA is also responsible for home delivery and installation services, the launch of IKEA App provides convenience for consumers.

Challenge

(1) Digital technology barriers

Digital transformation requires many advanced technological means, such as cloud computing, artificial intelligence, etc., and these technologies are not popular in China, and there are technical barriers. Therefore, enterprises need a large number of digital talents to carry out enterprise digital transformation, and the cultivation of talents requires a lot of money and time to smoothly proceed. In addition, the construction of digital platforms needs to be updated and upgraded on the basis of existing platforms, which also requires a lot of time and money.

(2) Data leakage risk

Digital transformation is accompanied by the use of a large amount of enterprise data in digital platforms, and these data are generally the core financial data and customer information of enterprises. Once the information is leaked, or the digital platform is attacked by hackers due to system instability in the early stage, it will bring huge impact and loss to enterprises. Therefore, data security management should be strengthened through the establishment of data security protection mechanism during digital transformation

7. CONCLUSION AND IMPLICATIONS

Digital transformation is not only an inevitable trend for enterprises to achieve high-quality transformation and development, but also one of the indispensable contents of national economic development. Through research and analysis, we come to the conclusion that the manufacturing industry can significantly improve its operational capabilities and market competitiveness through digital transformation. In recent years, the relevant policies promulgated by various countries in the world have also stimulated the digital transformation of enterprises. Through the promotion of the digital economy, enterprises can achieve digital transformation, which can improve the operation efficiency of enterprises and enhance the core competitiveness of the market, but at the same time, there are some challenges, such as the technical barriers and data security problems they have to face in the process of digital transformation. Therefore, enterprises should strengthen the study and application of digital transformation, cultivate digital talent team, establish an efficient digital management system, successfully achieve digital transformation, adapt to the development trend of the future digital era, and achieve high-quality development.

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