

Research on Innovative Management Strategy and High-quality Development Path of China State-owned Enterprises in the Digital Economy Era

Changyin Huang

Guangdong Eshore Technology Co., Ltd., Guangzhou, 530000, China

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Abstract: Under the background of digital economy, China state-owned enterprises are facing unprecedented opportunities and challenges. This paper deeply discusses the innovative management strategy and high-quality development path of state-owned enterprises in the digital economy era. It is found that state-owned enterprises are undergoing management concept renewal, organizational structure adjustment and talent team construction in innovation management. At the same time, they are actively promoting digital transformation, building basic digital technology platforms and strengthening the construction of big data platforms to promote business innovation. However, in the process of innovation management, state-owned enterprises still face challenges such as institutional obstacles, insufficient innovation ability and market competition pressure. In response to these challenges, this paper puts forward innovative management strategies such as building a digital management model, strengthening the construction of talent teams, and promoting technological innovation and transformation. On the path of high-quality development, it is suggested to optimize industrial layout and structure, improve operational efficiency and quality, and expand international market and cooperation. These strategies and paths are aimed at helping state-owned enterprises to enhance their international competitiveness and achieve sustainable development, and providing decision-making reference for the government to formulate relevant policies. Through these measures, state-owned enterprises can better adapt to the needs of the digital economy era and promote the optimization and upgrading of the country's overall economic structure.

1. Introduction

The digital economy has become an important force leading the world economic growth. Under this background, China's state-owned enterprises, as the backbone and backbone of national economic development, are facing unprecedented opportunities and challenges. How to seize the opportunity in the era of digital economy and achieve high-quality development through innovative management strategies has become an important issue to be solved urgently by state-owned enterprises.

The purpose of this study is to explore the innovative management strategies and high-quality development paths of state-owned enterprises in China in the digital economy era. By combing and analyzing the relevant literature at home and abroad, combined with the actual situation of state-owned enterprises, this study will reveal the new requirements of digital economy for innovative management of state-owned enterprises, and explore effective management strategies and development paths, with a view to providing theoretical support and practical guidance for China state-owned enterprises to gain a dominant position in global competition.

This study also has important practical significance. On the one hand, through in-depth study of the innovation practice of state-owned enterprises in the digital economy era, it will help to promote the optimization and upgrading of the country's overall economic structure and enhance its international competitiveness. On the other hand, this study will provide decision-making reference for the government to formulate relevant policies and guide the innovation and development of state-owned enterprises, and also provide reference and enlightenment for the transformation and upgrading of other types of enterprises in the digital economy era.

2. Analysis on the present situation of innovation management of state-owned enterprises in the era of digital economy

2.1. Present situation of innovative management in state-owned enterprises

State-owned enterprises are undergoing a profound change, including the renewal of management concepts, the adjustment of organizational structure and the construction of talent teams. In terms of management concepts, state-owned enterprises actively embrace digital transformation, regard data as a new factor of production, and adopt concepts such as data-driven, integrated innovation and win-win cooperation to improve internal management efficiency, and at the same time promote industrial digital development through open cooperation [1-2]. In order to better adapt to this transformation, the organizational structure has been adjusted, and an inter-departmental joint implementation team has been established, so as to accelerate the change of enterprise organization and management, so as to respond to market changes faster and improve decision-making efficiency and execution. In addition, in the face of the mismatch between the scale, quality and structure of digital talents and the needs of digital economy, state-owned enterprises are also strengthening the training and introduction of talents, and building a team of digital talents needed to support digital transformation through the combination of internal training and external recruitment.

State-owned enterprises are promoting digital transformation in an all-round way, enhancing their technical capabilities by building basic digital technology platforms including 5G, cloud computing, blockchain and artificial intelligence, and promoting the construction of big data platforms to promote data fusion analysis and sharing and empower business innovation [3-4]. At the same time, accelerate the pace of industrial digital innovation, realize digital product innovation, intelligent production operation, agile user service and ecological industrial system, and enhance the value of products and services. State-owned enterprises are also committed to new infrastructure construction and key core technology research, and create digital transformation demonstration models for different industries to enhance international competitiveness. These efforts have been supported by national policies, such as the Notice on Accelerating the Digital Transformation of State-owned Enterprises, and combined with specific strategies such as top-level planning, coordinated promotion and resource guarantee to ensure the smooth transition.

2.2. Challenges and problems faced

2.2.1. Institutional and institutional obstacles

In the process of innovation management, state-owned enterprises are often limited by traditional institutional mechanisms, which may not be flexible enough to respond quickly to market changes and technological progress. For example, the decision-making process is complicated and there are many levels of approval, which makes it difficult to implement innovative projects quickly. [5-6] In addition, the mechanism of state-owned enterprises in talent incentive, R&D investment, achievement transformation and other aspects may not be perfect enough, which affects the enthusiasm and efficiency of innovation.

2.2.2. Insufficient innovation ability

The ability of state-owned enterprises in technological innovation and management innovation needs to be improved (see Table 1). Some enterprises may have problems such as insufficient investment in R&D funds, lack of innovative talents and weak innovation culture [7]. These problems limit the development and application of state-owned enterprises in new technologies, new products and new services, and it is difficult to meet the needs of the digital economy era.

Table 1: Changes of innovation ability indicators of state-owned enterprises from 2015 to 2022
(source: based on online public data)

Indicator name	2015	2016	2017	2018	2019	2020	2021	2022
Innovation environment index (100 in 2015)	100	103.9	109.9	123.1	132.4	138.9	151.8	160.4
Innovation input index (100 in 2015)	100	103.8	111.1	119.6	124.3	131.9	137.1	146.7
Innovation output index (100 in 2015)	100	108.4	117.5	137.0	150.3	161.2	171.6	187.5
Innovation effectiveness index (100 in 2015)	100	105.2	110.7	115.5	118.0	123.6	127.2	128.2
Proportion index of enterprise R&D funds to operating income (100 in 2015)	100	104.7	117.5	135.8	145.1	156.2	147.7	161.0

2.2.3. Market competition pressure

With the intensification of market competition at home and abroad, state-owned enterprises are facing fierce competition from private enterprises and foreign-funded enterprises. These competitors may be more flexible, innovative and able to adapt to market changes more quickly. State-owned enterprises may be at a disadvantage in market competition if they can't effectively

carry out innovation management.

Table 2: Market competition pressure faced by state-owned enterprises from January to August, 2024 (source: based on online public data)

index	data	explain
Total operating income of state-owned enterprises	53,812.23 billion yuan	Year-on-year growth of 1.4%
Total profit of state-owned enterprises	2,883.68 billion yuan	Down 2.1% year-on-year
Taxes payable by state-owned enterprises	3,922.56 billion yuan	Year-on-year growth of 0.7%
Asset-liability ratio of state-owned enterprises	64.9%	It rose by 0.1 percentage points year on year.
Investment in fixed assets (excluding farmers)	378.978 billion yuan	Year-on-year growth of 3.4%, of which state-owned holdings increased by 6.1%.
Private investment in fixed assets	19.1 trillion yuan	Down 0.2% year-on-year
Investment in fixed assets of foreign enterprises	-	Down by 19.1%

Table 2 reflects the operating conditions and market competition pressure of state-owned enterprises from January to August 2024. The total operating income and tax payable of state-owned enterprises have increased, but the total profit has decreased, and the asset-liability ratio has increased slightly. At the same time, the growth rate of state-controlled fixed assets investment exceeds the national average, which shows the important role of state-owned economy in fixed assets investment. In contrast, both private investment in fixed assets and investment in fixed assets of foreign enterprises have declined. These data show that state-owned enterprises are facing certain pressure in market competition and need to improve their competitiveness through reform and innovation.

2.2.4. Digital transformation challenge

The era of digital economy requires enterprises to accelerate the pace of digital transformation, but state-owned enterprises may face many challenges in this regard [8]. Including how to effectively integrate internal and external data resources, how to use emerging technologies to improve operational efficiency, and how to build an organizational structure and management system that adapts to digitalization.

3. Innovative management strategy of state-owned enterprises in the era of digital economy

3.1. Constructing digital management mode

In the era of digital economy, state-owned enterprises need to actively embrace digital transformation to adapt to the rapidly changing market environment and consumer demand. To this end, we should build a management model with digitalization as the core, covering digital decision support system and digital operation management system (see Figure 1). By collecting and analyzing internal and external data, the former provides accurate information for enterprises, supports strategic planning and daily decision-making, and enables enterprises to grasp market and customer needs more accurately. The latter, by introducing advanced production management information systems and technologies, such as ERP, SCM, CRM and the Internet of Things, optimizes resource allocation, improves the level of automation and intelligence of production

processes, and then improves operational efficiency and response speed [9].

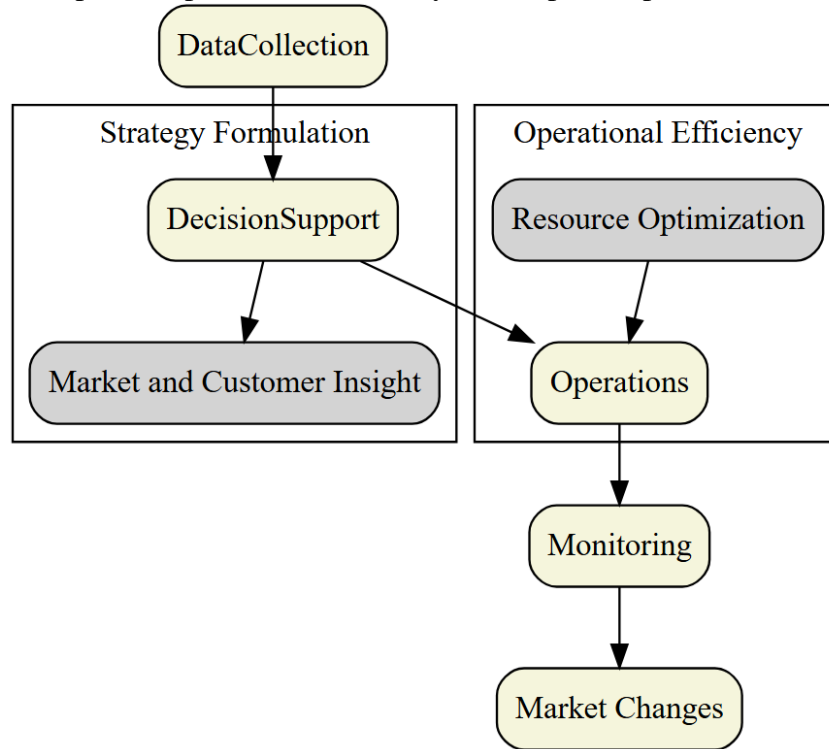


Figure 1: Digital management mode

The implementation of this digital management model needs to go through several stages: first, establish a reliable data collection and analysis system; Secondly, build a digital decision support system for forecasting and planning; Thirdly, integrate the digital operation management system and optimize the business process; Finally, continuously monitor the effect of digital transformation and adjust the strategy according to market changes. Through such a digital management model, state-owned enterprises can improve the scientific decision-making and operational efficiency, maintain market competitiveness, and achieve sustainable innovation and development.

3.2. Strengthen the construction of talent team

The key to the innovation management of state-owned enterprises is to give full play to the role of talents, and to enhance the core competitiveness through talent-driven innovation. The primary task is to strengthen the construction of talent teams. This includes carrying out multi-level digital training and building an online and offline learning platform to improve employees' digital literacy; Stimulate employees' innovation consciousness through innovation competitions and funds, and provide an innovation platform to support internal innovation activities; Introduce outstanding talents with digital background, improve the incentive mechanism and the salary system that matches the contribution of talents; And implement the talent training and selection plan to reserve high-quality talents for the development of enterprises.

In the era of digital economy, state-owned enterprises must strengthen the construction of talent team in order to realize innovative management. By cultivating talents with digital literacy and innovation ability, state-owned enterprises will better cope with market competition and contribute to China's economic development. Therefore, state-owned enterprises should constantly innovate talent management strategies to provide a good environment for talent growth and help enterprises to develop continuously.

3.3. Promote technological innovation and transformation

In order to build a digital innovation system, enterprises need to set up a special digital technology research and development center to cooperate with universities, research institutions and leading enterprises in the industry to jointly promote technological innovation. At the same time, enterprises should increase the cultivation and introduction of digital talents, establish high-quality innovative teams, improve the incentive mechanism, strengthen the protection of intellectual property rights, and promote the rapid transformation of scientific research results.

In optimizing the digital management process, enterprises should use big data analysis technology to drive decision-making and improve the scientificity and accuracy of decision-making. Introduce artificial intelligence, Internet of Things and other technologies to realize production automation and intelligence, and build a cloud computing platform to improve resource utilization efficiency and business flexibility [10]. In addition, enterprises need to establish a comprehensive risk assessment system, strengthen compliance management and network security protection to ensure that potential risks can be effectively identified and dealt with in the process of digital transformation, and ensure the security of enterprise data assets.

In the era of digital economy, if state-owned enterprises want to maintain their competitive advantage, they must keep up with the times and actively embrace digital transformation. By building a digital innovation system, promoting the transformation of technological achievements, optimizing digital management processes and strengthening risk management and compliance, state-owned enterprises can occupy a favorable position in the fierce market competition and realize sustainable development.

4. High-quality development path of state-owned enterprises in the era of digital economy

4.1. Optimize industrial layout and structure

In the era of digital economy, state-owned enterprises are facing the urgent need of digital transformation to enhance their competitiveness in the global market. Digital transformation enables enterprises to use technologies such as big data and cloud computing to accurately capture market demand, optimize product strategy and industrial layout, and concentrate resources on high value-added and high demand areas.

In addition, digital transformation has promoted the intelligentization of the industrial chain of state-owned enterprises, realized production automation and informatization through industrial Internet and Internet of Things technology, improved efficiency, reduced costs, improved product quality and customization ability, and enhanced the competitiveness of the industrial chain.

Digital transformation also helps state-owned enterprises to establish a more flexible and efficient supply chain system. Through real-time monitoring and dynamic adjustment, inventory backlog can be reduced, capital turnover can be accelerated, and market response speed can be improved. At the same time, state-owned enterprises can use digital technology to explore emerging industries, such as e-commerce and intelligent manufacturing, cultivate new growth points, and provide impetus for industrial upgrading and sustainable development. State-owned enterprises should seize the opportunity of digital economy, accelerate digital transformation and promote high-quality development through innovation.

4.2. Improve operational efficiency and quality

For state-owned enterprises, it is not only the inherent requirement to realize their own high-quality development, but also the responsibility to serve the national strategy and promote

economic and social development by grasping the opportunity of the digital economy era and improving the operational efficiency and product quality through the application of digital technology.

The development path of state-owned enterprises includes strengthening top-level design and formulating digital transformation planning consistent with national strategy; Deepen data governance, use big data and artificial intelligence technologies to release data value, and optimize decision-making and product services; Promote business innovation, use digital technology to transform traditional processes, explore new business models to cultivate new growth points; Strengthen technological innovation, increase R&D investment and cooperate with universities and scientific research institutions to build core competitiveness and protect intellectual property rights; Cultivate digital talents, establish incentive mechanism through school-enterprise cooperation and other ways to ensure talent support; Ensure network security, strengthen system construction to ensure data security and system stability, and improve the ability to deal with network risks.

The era of digital economy has brought unprecedented development opportunities for state-owned enterprises. State-owned enterprises should actively embrace digital transformation, and continuously improve operational efficiency and product quality to achieve high-quality development by strengthening top-level design, deepening data governance, promoting business innovation, strengthening technological innovation, cultivating digital talents and ensuring network security. The government and all walks of life should also give strong support and jointly create a good environment conducive to the digital transformation of state-owned enterprises.

4.3. Expand the international market and cooperation

In the wave of global digital economy, state-owned enterprises enhance their competitiveness through digital transformation and technology application, such as building a global cloud service platform to expand overseas markets; Strengthen brand internationalization, participate in the formulation of international standards and sponsor activities to enhance image and social responsibility; Deepen transnational cooperation and build an ecosystem of R&D and technology sharing with international partners; Enhance the understanding and adaptability of international rules, improve the level of compliance management to deal with trade risks; And attach importance to the introduction and training of international talents, and improve the team's cross-cultural communication ability and business level through overseas study and internal training.

In the era of digital economy, it is not only a challenge but also an opportunity for state-owned enterprises to expand the international market and deepen international cooperation. Through technological innovation, brand building, cross-border cooperation, risk management and talent training, state-owned enterprises can occupy a favorable position in global competition, achieve high-quality development and enhance their international influence.

5. Conclusion

In the era of digital economy, state-owned enterprises in China need to seize the opportunity to formulate digital transformation plans by strengthening top-level design, deepen data governance and optimize decision-making and services by using big data and artificial intelligence; Promote business innovation, transform traditional processes and explore new business models; Strengthen technological innovation and cooperation to protect intellectual property rights; Cultivate digital talents and ensure network security to support high-quality development. In addition, state-owned enterprises need to expand the international market, deepen international cooperation, strengthen brand building and risk management, so as to enhance their competitiveness and international influence in global competition.

References

- [1] Shen Keyin, Zeng Yulan, Dong Qiqin, Mou Linlin, & Lü Wangang. (2021). *Theoretical Exposition and Practical Path of Digital Economy Driving High-quality Development of Sports Industry*. *Journal of Wuhan Institute of Physical Education*, 55(10), 8.
- [2] Xie Dan, & Wang Lei. (2023). *Empowering Scientific Decision-making and Innovative Development of State-owned Enterprises with Digital Technology*. *Administrative Forum*, 30(5), 156-160.
- [3] Li Lanbing, & Zhao Jiawei. (2023). *Digital Economy Policy and Enterprise Total Factor Productivity: Effects and Mechanisms*. *Journal of Lanzhou University (Social Sciences Edition)*, 51(6), 29-41.
- [4] Qi Yudong, Du Bo, & Wen Xin. (2021). *Digital Strategic Transformation of State-owned Enterprises: Mission Embedding and Model Selection - A Case Study Based on the Digital Typical Practices of 3 Central Enterprises*. *Management World*, 37(11), 137-158.
- [5] Xia Ming, Zhou Wenyong, & Xie Zhimin. (2023). *Research on Collaborative Path of High-quality Development of Urban Digital Economy - Based on Qualitative Comparative Analysis of Technological and Economic Paradigms*. *Science and Technology Management*, 44(3), 65-74.
- [6] Yan Ying, & Wang Xiayu. (2024). *The Impact of Digital Economy on Regional Green High-quality Development from the Perspective of Ambidextrous Innovation*. *Science and Technology Management Research*, 44(9), 1-9.
- [7] Zhao Xinyu, & Zhang Shuai. (2024). *Can Digital Transformation Improve the Capital Allocation Efficiency of State-owned Enterprises?* *Journal of Lanzhou University (Social Sciences Edition)*, 52(2), 40-53.
- [8] Zheng Jiyun, & Chen Zongyuan. (2021). *Research on the Path of Digital Transformation of State-owned Enterprises under the Standardization Perspective*. *Journal of China Academy of Electronics and Information Technology*, 16(11), 7.
- [9] Zhao Jing, & Luan Fugui. (2024). *Digital Economy, R&D Element Flow and Corporate Innovation Boundary*. *Statistics and Decision*, 40(2), 183-188.
- [10] You Lei. (2022). *Innovation Mode and Evolutionary Path of Platform Economy in the Digital Age - A Longitudinal Case Study of JD.com*. *Enterprise Economics*, 41(12), 118-128.