

The role and best practices of digital governance in the digital transformation of enterprises

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ABSTRACT

In the digital age, digital governance has become an important force to promote the modernization of national governance and the green transformation of enterprises. Using IPO model (a strategic planning and evaluation tool) and social technology system theory, this paper innovatively design a practical framework of enterprise digital transformation. This framework clearly points to the foundations of the transformation: data, technology, and talent. It explains how these elements interact and develop, driving the transformation process in changing markets. More importantly, this framework focuses on the actual results of the transformation, such as efficiency improvement, business model innovation, and enhanced market competitiveness. It provides a clear and easy transformation path for Chinese enterprises, and helps enterprises to move forward rapidly in the wave of digital and achieve leap development.

KEYWORDS

digital governance; digital transformation; function and practice

In the era of digital economy, digital transformation has become the only way for enterprises to survive and develop. Digital transformation refers to the use of digital technology to carry out all-round and deep changes in the business model, organizational structure and management mode, so as to realize business process reengineering, efficiency and quality improvement and value creation, and digital governance is the key force to promote the digital transformation of enterprises. Digital governance refers to the use of digital technology and data resources, optimize the enterprise management and decision-making process, improve the organization's agility, intelligent level and risk prevention and control ability, digital governance by building data-driven organization operation mechanism, promote enterprise from experience decision to data decision, from passive response to active anticipation, from extensive management to fine management.

This paper aims to systematically analyze the action mechanism and practice path of digital governance in the digital transformation of enterprises. Specifically, the paper discusses from three aspects: the first is constructing the systematic analysis framework of enterprise digital transformation to reveal the driving role of digital governance; the second is to analyze the three paths of digital governance, namely digital infrastructure construction, urban and industrial digital transformation and integrated digital strategy; the third is to summarize the practical experience of digital governance to provide decision-making reference for enterprise digital transformation.

Compared with the existing research, the innovation of this paper is reflected in the following aspects: First, based on the social technology system theory and IPO model, this paper puts forward a systematic framework to analyze the digital transformation of enterprises, which helps to clarify the role of digital governance in the whole process of transformation. Secondly, this paper puts

digital governance in a broader social background, analyzes the important impact of the digitalization process of cities and industries on the transformation of enterprises, and breaks through the limitations of the internal perspective of enterprises. Finally, this paper focuses on the Chinese situation, analyzes the stage characteristics of the development of China's digital economy, and extracts a series of localized practical strategies, which has strong pertinence and guiding significance.

This paper to "enterprise digital transformation", "digital governance" and "digital strategy" for keywords, such as in CNKI, Web of Science, Google Scholar database literature retrieval, collected the management, information science, public management discipline published English literature, by reading literature title and abstract, eliminate the unrelated research, finally included in several literature in-depth analysis. When sorting out the literature, this paper adopts the thematic analysis method, which focuses on the themes of the motivation, process and effect of digital transformation, and then summarizes and extracts the action mechanism and practical strategy of digital governance.

In the key track of digital economy, actively promoting the digital transformation of enterprises has become a strategic choice for China to achieve high-quality development and shape new competitive advantages in the future, and digital governance is the key variable. It is meaningful to clarify the mechanism of digital governance and summarize and refine the practical practice path to accelerate the process of digital transformation of enterprises and enhance the resilience and vitality of development, which is also the important significance of the research in this paper.

1 The definition and connotation of digital governance

Digital governance refers to the institutional arrangement and continuous process in which the platform, enterprises, social organizations, network communities, individual citizens and other multiple subjects take the digital enabling governance system, the digital enabling governance capacity and the building of a new governance system under the leadership of the government or enterprises. At the enterprise level, digital governance covers the data architecture management, data model management, data standard management, data quality management, metadata management, data security management, master data management, data life cycle management, and other aspects, through scientific management methods and technical means, ensure the accuracy of the data, security, compliance and availability, provide strong support for enterprise decision-making. Based on this, based on the IPO model and social technology system theory, this paper constructs the system framework of enterprise digital transformation, emphasizing that the change of digital governance at the strategic, social, organizational and technical levels is the core driving force of the transformation. Its dynamic process is simplified to the efficiency improvement in the initial stage, the medium-stage decision-making optimization and innovation drive, and finally contributes to the digital integration, synergy, sharing and innovative governance mechanism [1].

2 The system framework of enterprise digital transformation and the driving role of digital governance

Based on the perspective of I-P-O model (i. e., input-process-output) and social technology system theory, we deeply analyze the theoretical architecture of enterprise digital transformation, and deconstruct it into three core dimensions: input factor (I), transformation process (P) and output result (O). This framework aims to clarify which factors drive the digital transformation of enterprises,

the specific implementation path of the transformation, and the effectiveness of the transformation.

2.1 Input factors of enterprise digital transformation (I) analysis

From the perspective of social technology system theory, the four key input factors affecting the digital transformation of enterprises include: Strategic system: enterprise, as a deep into the economic, political, social, cultural and ecological dimensions of complex system, the digital transformation strategy to closely docking "five one" overall development strategy, to ensure that the digital governance become the core of enterprise strategic upgrade engine, all-round can assign enterprise economic prosperity, political stability, social harmony, cultural prosperity and ecological sustainable development.

Social system: Under the wave of digital transformation, the cooperation among multiple governance subjects such as the government, the market, society and the public becomes particularly critical. Through optimizing resource allocation, deepening data analysis, strengthening information sharing and other strategies, digital transformation promotes the close interaction and efficient cooperation among various subjects, and jointly weaves a new picture of multiple co-governance and coordinated development.

Organizational system: At the organizational system level, digital transformation calls for the forward-looking vision and transformative leadership of leaders, and requires employees to master the core skills of the digital age, such as data analysis and processing capabilities. This change has promoted the profound change of organizational culture, created an organizational atmosphere that encourages innovation, embraces change and continues learning, and laid a solid talent and cultural foundation for the long-term development of the enterprise.

Technology system: The cutting-edge technologies, represented by 5G, Internet of Things, cloud computing, big data and artificial intelligence, constitute a solid technology base for digital transformation. The extensive application and deep integration of these technologies have not only reshaped the operation mode of enterprises, but also stimulated the booming of emerging business forms, providing infinite possibilities for enterprises to explore unknown areas and open up new space for development.

2.2 Dynamic evolution path of enterprise digital transformation (P)

Driven by strategic, social, organizational and technology systems, enterprise digital transformation has experienced a gradual process from primary to advanced, which can be summarized into three stages:

Primary stage: initial efficiency — The start of digital transformation. In this initial stage, technological systems are like an engine, driving the ship of digital transformation through the waves. Enterprises have built a big data platform, which realizes the centralized management, seamless sharing and intuitive visualization of data, and greatly improves the breadth and accuracy of governance. At the same time, digital technology has given enterprises keen insight and forward-looking early warning ability, enabling enterprises to quickly intervene when the problem starts, effectively reducing operational risks. In addition, the power of digitalization also breaks down the barriers of traditional organizations, accelerates the flow speed of decision-making and execution, and presses the fast forward button for the improvement of enterprise efficiency.

Medium-range stage: decision-making intelligence — the deepening and improvement of the transformation. With the gradual deepening of digital transformation, the strategic system gradually emerged and becomes the helmsman leading the decision-making process. Enterprises have built a set of perfect data ecosystem, covering data collection, analysis, application and management and

other links, providing a solid data support for scientific decision-making. Data analysis has become the right-hand man for enterprises to gain insight into the market, diagnose problems and formulate countermeasures, while the security sharing and efficient coordination of data ensure the effective implementation and implementation of decisions. At this stage, the decision-making process of the enterprise is more accurate and efficient, laying a solid foundation for the subsequent in-depth transformation [2]. Higher-order stage: innovation leads the leap of —— all-round transformation. When the digital transformation enters the palace of innovation and change, the strategy, technology, organization and social system have realized the comprehensive integration and coordination, and jointly promote the enterprise towards a new era of all-round transformation. At the strategic level, the enterprise closely follows the market and technological trend, and flexibly adjusts the strategic blueprint to ensure the advantageous position in the future competition; the enterprise deeply explores the application boundary of digital technology, innovates the management mode and business process, and continuously enhances the enterprise value and core competitiveness; at the organizational level, the enterprise is committed to creating an open and innovative cultural atmosphere, stimulate the creativity and potential of employees, and inject inexhaustible power into the sustainable development of the enterprise; at the social level, the enterprise actively embraces the external forces such as digital government and digital economy, broaden its development space and vision, and achieve win-win development with the society.

2.3 Output results of the digital transformation of enterprises (O)

After an in-depth discussion of the input factors and dynamic process of digital transformation, we can summarize the output results from the four mechanisms of digital integration, sharing, collaboration and innovation:

2.3.1 Effectiveness of the digital integration mechanism

Digital transformation promotes a high degree of integration within the enterprise, and realizes the four unification of goals, governance, responsibility and management. This means that enterprises take digital technology as the core, integrate long-term goals into every link of daily management, promote the standardization and rule of governance, and ensure that responsibility belongs to people and management is efficient. The application of big data breaks the information island, promotes the seamless collaboration between departments, and accelerates the modernization process of corporate governance.

2.3.2 Achievements of the digital sharing mechanism

The digital transformation of enterprises has built a perfect data sharing system, including support, exchange, service and guarantee system. This system takes the big data management center as the hub, realizes the convenient, safe and efficient sharing of data, and provides strong support for the cross-departmental, cross-level and cross-regional data exchange of enterprises.

At the same time, the establishment of the data sharing mechanism also promotes the maximum utilization of the data value, and provides a strong data support for the digital transformation of enterprises.

2.3.3 The embodiment of the digital synergy mechanism

Digital transformation has strengthened the integrity, systematization and synergy of corporate governance. With the joint participation of the government, the market and the society, the digital

transformation of enterprises has formed a collaborative governance mode of multiple subjects. The unification and standardization construction of digital market has brought new growth points for enterprises, while the coordination of digital ecology has promoted the harmonious coexistence of green development and economy and society. In addition, the strengthening of digital supervision also improves the democratic and scientific nature of corporate governance, and provides a strong guarantee for the sustainable development of enterprises.

2.3.4 Promotion of digital innovation mechanism

Digital transformation has stimulated the innovation vitality of enterprises, and promoted the continuous emergence of new business forms, new models and digital platforms. Enterprises use digital technology to extend the service field, explore the path of green development, and realize the transformation from traditional management to intelligent and fine management. At the same time, digital transformation has also promoted the transformation and upgrading of traditional industries, promoted the development of strategic emerging industries such as new energy, high-end equipment and digital creativity, and injected new impetus into the high-quality development of enterprises.

3 The best practice path for digital governance to boost enterprise digital transformation

3.1 Digital cornerstone: technology empowerment and empowerment to build a new ecology of enterprise digital governance

First, the technology empowerment mechanism greatly promotes the diversification and cooperation of governance subjects. With the help of the wide application of digital infrastructure such as big data and the Internet, the efficiency of information circulation and acquisition has been significantly improved, which not only strengthens the status and voice ability of individuals in the information age, but also promotes the balanced distribution of information resources. With the support of more transparent, accurate and comprehensive data resources, the government, market, society and citizens can have free and in-depth exchanges, which greatly expands the channels for citizens to participate in social governance and enhances the overall participation and unity of society.

Moreover, technology empowerment has become the core driving force for the modernization of corporate governance capacity. Through the construction of the innovative mode of digital twin enterprise, corporate governance has successfully crossed the boundary of digital space, physical space and social space, realized the seamless docking and comprehensive expansion of the three, and built a three-dimensional and comprehensive governance ecosystem. In this system, digital technology is deeply integrated into the monitoring, processing, optimization and other links of the enterprise, which not only significantly improves the operation efficiency and response speed of the enterprise, but also accelerates the comprehensive digital transformation process of the enterprise. This enables enterprises to adapt to the market changes more quickly, grasp the development opportunities, and achieve long-term, stable and sustainable development.

3.2 Digital pulse: urban and industrial transformation jointly promote the digital upgrading of enterprises

First of all, enterprises should dig deeply and make use of the unique resources and conditions

given by the region, and thus create a distinct regional characteristics of the regional economic system. This means that enterprises need to examine their own core advantages such as human resources, physical geographical environment, material reserves and financial support, clarify the development direction, and implement differentiation strategies. For example, we can focus on the development of characteristic tourism, modern agriculture, cutting-edge manufacturing or modern services, while actively embracing the wave of digital transformation in cities, and using the power of science and technology to promote the green and sustainable growth of regional economy.

Secondly, in order to achieve the "double" carbon goal, we must accelerate the optimization and upgrading of the industrial structure, to the high-end, intelligent direction. In view of the current situation, traditional industries such as coal, energy and chemical industry still occupy a large proportion, we need to adopt a strategy of both economic development and environmental protection, use digital technology to carry out deep transformation of traditional industries, and promote their deep integration with strategic emerging industries. This transformation process will lead to the restructuring of the industrial value chain, make simultaneous efforts from both the demand side and the supply side, stimulate the self-innovation power within the industry, deepen the integration degree of digital technology and industry, and finally form a virtuous cycle in which industrial digitalization and digital industrialization promote and complement each other.

Finally, as the core engine of regional economic development, the construction of the green and low-carbon development mode of urban agglomeration has inestimable value for the realization of the "double-carbon" goal. We can draw inspiration from the experience of successful urban agglomerations at home and abroad, such as the Yangtze River Delta, the middle reaches of the Yangtze River and Chengdu-Chongqing region, and actively promote the formation and development of the Shandong Peninsula, the middle reaches of the Yellow River and Lanxi. By strengthening the leading role of central cities in urban agglomeration, optimizing the efficiency of resource allocation, and promoting the close economic cooperation and coordinated development between regions [4]. At the same time, we will make use of the linkage effect between cities to promote urban agglomerations to a more integrated, green and low-carbon direction, and jointly draw a new blueprint of green and low-carbon for sustainable development.

3.3 Digital vision: The integration strategy leads the modernization of corporate governance

In order to actively respond to the strategic call of the Third Plenary Session of the 18th CPC Central Committee and accelerate the process of the modernization of national governance, the modernization of governance at the enterprise level has also become an indispensable link. In this context, enterprises should put the digital strategy in the core position, comprehensively plan and deeply implement the modernization reform of the governance system. The specific strategy is as follows:

The first priority is to build a clear responsibility system, which requires us to weave a meticulous responsibility network and support a standardized operation process. The move is to ensure that every governance task can be accurately implemented to specific positions and individuals, forming a interlinked and efficient responsibility chain, so as to effectively improve the efficiency and execution of governance. Secondly, enterprises should increase their investment in digital technology and strengthen the core driving role of scientific and technological innovation in the governance system. This includes the establishment of a sound financial guarantee mechanism to provide continuous and stable financial support for scientific research and innovation projects; at the same time, emphasize the construction of talent team, introduce high quality, professional talents, and establish a strong research and development team for the digital transformation and

governance modernization of enterprises. Finally, enterprises need to establish the global concept, break their own boundaries, and actively build a cross-enterprise governance coordination mechanism [5]. To this end, a special coordination and regulatory agency can be set up to coordinate the internal resource integration and external cooperation of enterprises, so as to promote the deep integration of enterprise development and the overall economic and social situation. This kind of cross-enterprise collaborative governance will not only help to improve the governance efficiency of a single enterprise, but also promote the overall improvement of the governance efficiency of the whole industry and even the country, and contribute to the construction of a modern national governance system.

4 Epilogue

On the basis of sorting out the literature of digital governance and enterprise digital transformation, this paper constructs a systematic analysis framework of "input-transformation process-output", and reveals the driving role of digital governance in the whole process of enterprise transformation. Consolidating digital infrastructure, integrating into the digital process of regional industries and formulating integrated digital strategies are the three effective ways for digital governance to boost the enterprise transformation. In the future, enterprises should continue to strengthen the construction of digital governance capacity, embed digital technology in every link of organization and operation, and improve data-driven insights, process reengineering and efficiency, and value-added model innovation. Compared with the existing research, the theoretical contribution of this paper is to put forward an analytical framework from the perspective of system theory, which is helpful to clarify the function mechanism of digital governance and lay a foundation for the subsequent empirical research. The practical contribution lies in the analysis of the digital development situation of China, and provides targeted countermeasures and suggestions for enterprises to grasp the opportunities of transformation and cope with the challenges of transformation. The future research can carry out quantitative empirical test around the framework, in order to deepen the cognition of the practical effectiveness of digital governance.

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