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Toward Effective Information Resource Governance in the Context of Enterprise Digital Transformation

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Abstract: ***Amid the accelerated advancement of global digital technologies, enterprises—particularly small and medium-sized enterprises (SMEs)—are under substantial pressure to undergo digital transformation. This transformation extends beyond technological adoption to encompass organizational culture, strategic orientation, and operational models. Within this context, information resource management (IRM) serves as a critical enabler, playing a pivotal role in enhancing innovation capacity, operational efficiency, and market adaptability. Findings indicate that by strengthening IRM practices, enterprises can more effectively respond to market dynamics, improve managerial efficiency, reduce operational costs, and establish a solid foundation for future digital development.***

Keywords: Enterprise Digitization; Information Resource Management; Digital Transformation; Data-Driven; Digital Elements.

1. INTRODUCTION

With the rapid development of global digital technologies, enterprises, especially small and medium-sized ones, are facing enormous pressure for digital transformation. Digital transformation not only involves the application of technology but also affects an enterprise's culture, strategy, and operational model. As a key link in digital transformation, information resource management plays an important role in enhancing enterprises' innovation capability, efficiency, and market adaptability. [Results/Conclusion] By strengthening the construction of information resource management, enterprises can better adapt to market changes, improve management efficiency, reduce operational costs, and lay a foundation for future digital development.

1.1 Research Background

With the rapid development of digital technologies, many enterprises worldwide are facing pressure for digital transformation, especially small and medium-sized enterprises [1]. Digital transformation not only involves the application of technology but also concerns profound changes in corporate culture, strategy, and operational models. In the process of enterprise digital transformation, effectively managing and utilizing information resources plays an important role in enabling enterprises to achieve innovation, improve efficiency, and adapt to market changes. Therefore, researching optimization strategies for information resource management has become a crucial part of promoting the success of enterprise digital transformation.

1.2 Research Significance

Studying the optimization strategies of information resource management in enterprise digital transformation has important theoretical and practical significance. Firstly, at the theoretical level, this research can enrich and develop the theoretical system in the field of information resource management, providing new perspectives and methodologies for information management in the digital era. Secondly, at the practical level, the research results can guide enterprises on how to more efficiently integrate and allocate information resources during digital transformation, thereby improving decision-making quality and the efficiency of business processes.

2. RELATED RESEARCH ON ENTERPRISE DIGITAL TRANSFORMATION

2.1 Concept of Enterprise Digital Transformation

Enterprise digital transformation originally stemmed from the application of traditional information technology in the production process (Peppard, 2007) [2]. The concept of enterprise digital transformation was first proposed by

Patel and McCarthy, and it was not clearly defined at that time (Patel and McCarthy, 2000) [3]. However, over time, scholars have gradually realized that digital transformation is not merely an impact on the backend processes of traditional information technology but a process that exerts a profound influence on the entire enterprise [4].

In digital transformation, the core of traditional enterprises lies in leveraging digital technologies to innovate business models and other aspects (Liu Yang and Li Liang, 2022) [5]. For enterprises, the fundamental goal of digital transformation is not merely to introduce new technologies, but to reshape business models, optimize management structures, and achieve an all-round upgrade from strategy to execution through the deep integration of digital technologies with key business processes (Fitzgerald and Kruschwitz, 2013) [6]. In short, digital transformation is about changing traditional businesses, enhancing competitiveness, and upgrading strategic management through the application of digital technologies.

In summary, enterprise digital transformation is a complex and long-term process. Initially focusing on technology application, it has gradually evolved to exert a comprehensive impact on the entire mode of production. By adopting advanced digital tools and technologies, enterprises reshape their business models, processes, and services to adapt to the ever-changing market environment. In this process, enterprises strive to integrate data and establish robust information networks to improve operational efficiency and accelerate decision-making. The ultimate goal is to pursue a flexible, agile, and innovative business model, optimize customer experience, enhance production efficiency, reduce costs, and thereby gain more opportunities in the digital economy.

3. DRIVING FACTORS OF DIGITAL TRANSFORMATION

The internal driving factors of enterprise digital transformation mainly include two aspects: data elements and technological innovation.

3.1 Data Elements

As a new production factor, data not only endows laborers and production tools with brand-new development directions but also fundamentally transforms traditional production models, promoting the continuous improvement and innovation of productivity (Wang Shouyi and Liang Qianqian, 2021) [7]. Driven by data elements, changes have occurred in productive forces and production relations, and labor processes and relations have also tended to be digitized (Wang Shouyi, 2023 [8].

Compared with traditional production factors (such as land, labor, and capital), data has unique characteristics. Data is not depleted with use; instead, it can increase in value through analysis, integration, and reuse during use. At the same time, data can be shared and used by multiple entities without the competitive consumption that occurs with traditional resources. These characteristics make data elements one of the factors driving enterprise digital transformation (Lü Tie and Li Ran, 2022) [9].

As data becomes a key production factor, strengthening data management and unlocking the value of data factors has become an essential path for digital transformation (Wei Daisen, 2023) [10]. The integration and application of data are driving the transformation of the labor market from manual labor to mental labor, endowing workers with new digital skills. At the same time, data has driven the digitization and virtualization of production tools, changing production methods and production relations. Therefore, for enterprises to successfully complete digital transformation and improve total factor productivity, an important step is to strengthen data management and effectively utilize data resources.

3.2 Technological Innovation

Academic research generally believes that technological innovation is the core driving force for promoting enterprises' digital transformation. The advancement of technology and equipment plays a crucial role in enterprises' digital strategic decision-making. In addition to technical factors, the personality and innovation ability of leadership, as well as the capability level of senior executives, are all considered to have a positive impact on enterprises' digital transformation. The digital self-efficacy of small and medium-sized enterprise (SME) entrepreneurs significantly affects the digital transformation process of enterprises, and SMEs managed by professional leaders score higher in the digital transformation process. With the popularization of digital technology, enterprise management structures have transformed from the traditional pyramid model to a more flat

one, which places higher requirements on employees' technical capabilities and professional literacy. The market demand for digital technology talents exceeds supply, and this talent shortage poses a challenge to enterprises' digital transformation.

Technological innovation has promoted the digitization of production tools and processes, enabling enterprises to respond to market changes more efficiently and flexibly. Through technological innovation, enterprises can better utilize data resources, improve the accuracy of decision-making, optimize customer experience, and enhance the quality of products and services. In conclusion, technological innovation provides the necessary tools and platforms for enterprises' digital transformation and plays a core driving role in enterprises' digital transformation.

4. ENTERPRISE INFORMATION RESOURCE MANAGEMENT STRATEGIES

4.1 The Meaning of Enterprise Information Resource Management

Enterprise information resource management refers to a series of management activities and strategies adopted by enterprises in the operation process for the effective acquisition, organization, storage, sharing, and utilization of information resources. Its main purpose is to improve enterprises' decision-making efficiency, operational efficiency, and competitiveness by optimizing the use of information resources. After years of development, enterprise information management has formed some widely accepted basic theories.

Key aspects include:

(1) Information acquisition

This involves collecting, screening, and integrating internal and external information resources to meet various business needs of the enterprise.

(2) Information storage

Ensuring the security and availability of information resources in storage systems such as data warehouses and databases for easy access at any time.

(3) Information organization

Classifying and standardizing information resources to improve the efficiency of information retrieval and use.

(4) Information sharing

Promoting information exchange between different departments and teams through establishing effective communication channels and collaboration platforms to enhance information flow.

(5) Information analysis and utilization

Using data analysis tools and technologies to excavate the potential value of information resources to support the enterprise's strategic decision-making and operational optimization.

(6) Information security and compliance

Ensuring the security of information resources, preventing information leakage and abuse, while complying with relevant laws and regulations.

4.2 Dilemmas in Enterprise Information Resource Management

The implementation of information resource management has brought development opportunities to enterprises and has become an important means to enhance the comprehensive competitiveness of enterprises. With the adjustment and transformation of the economic structure, if enterprises still adopt traditional management methods and market development approaches, they will face greater difficulties and increased costs. Therefore, promoting the construction of information resource management has become particularly important, which can help

enterprises better adapt to economic changes, improve management efficiency, reduce costs, and thus gain more development opportunities.

However, enterprise information resource management faces multiple challenges. Although in the information age, enterprises have gradually increased their attention to information resources and their management models have become more proactive, there is a problem of relatively lagging information awareness. In addition, factors such as insufficient investment in personnel and materials, unreasonable setup of management institutions, low-level information data environment, backward processing methods, and lack of information resource exchange platforms all affect the effective management of information resources by enterprises. With changes in economic momentum, operational management risks are rising. In the context of fierce competition, imperfect management, and limited development, enterprises can use digital technology to quickly understand market conditions, predict risks, improve production efficiency by optimizing information resource management, ensure the stability of the capital chain, and ultimately maximize resource efficiency. Enterprises need to pay attention to risk issues and take practical reform measures to promote continuous innovation and optimization of information resource management work.

5. THE ROLE OF INFORMATION RESOURCE MANAGEMENT IN ENTERPRISE DIGITAL TRANSFORMATION

Through digital transformation, information resource management has brought an information transmission effect to enterprises, which not only reduces information asymmetry but also strengthens the connection between enterprises and the external world, laying a foundation for the long-term development and competitiveness improvement of enterprises. Information resource management not only increases the quantity of information but also improves the quality of information through data analysis and processing. This means that enterprises can provide more accurate and timely information, making the information more credible and valuable.

The role of information resources in enterprise digital transformation not only lies in improving internal management efficiency but also in enhancing communication and interaction with external stakeholders, thereby comprehensively boosting the enterprise's dynamic capabilities. In digital transformation, attention should be paid to data security to reduce leakage risks, identify innovation opportunities, meet customer needs personalized to enhance experience, and promote the continuous optimization of digital transformation. Information resource management assists enterprises in successful transformation at multiple levels and enhances their competitiveness.

6. CONCLUSION

This study explores the optimization strategies of enterprise information resource management, aiming to promote the successful realization of enterprise digital transformation. In enterprise digital transformation, the effective management and utilization of information resources are crucial for achieving innovation, improving efficiency, and adapting to market changes. Digital transformation is not just a matter of technology application but also involves changes in the entire production mode and industrial chain. Among the driving factors of digital transformation, data elements and technological innovation are considered the core of internal drivers. The in-depth integration of data and technological innovation have promoted changes in production relations and production tools, providing the necessary impetus and platform for digital transformation. By promoting the construction of information resource management, enterprises can better adapt to economic changes, improve management efficiency, and reduce costs. Information resource management is an important driver for the success of enterprise digital transformation and is of great significance for enterprises to enhance competitiveness and adapt to market changes.

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