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Digital Transformation Strategies and Practices for Corporates

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Abstract: Under the wave of global digital transformation, enterprises are facing great challenges and opportunities. Digital transformation is not only a technological innovation, but also an all-round upgrade of business model and organizational structure. This thesis studies the core value of enterprise digital transformation and redefines the connotation of digital transformation. It analyzes the reasons for enterprise digital transformation and points out the core strategy and path of enterprise digital transformation. Taking the automobile manufacturing industry as an example to analyze the practice and thinking of the digital transformation process, it is concluded that digital transformation also helps multi-factory collaboration, supply chain information opening, global transparent management, cost reduction, improving the order delivery satisfaction rate, and supporting the complex production requirements and diversified production modes. However, digital transformation also faces challenges such as data security, technology risks, and organizational changes. Enterprises need to strengthen security measures and build a digital ecosystem to adapt to the development needs of the digital economy and achieve sustainable development.

Keywords: Digitalization, Implementation, Core Values.

1. Introduction

Currently, the global society is undergoing profound transformations characterized by digitization, networking, and intelligence. New technologies, industries, models, and formats have emerged on a large scale. Digitization has become the leading force driving the new round of technological revolution, reshaping the global industrial ecological pattern, and pushing the world economy towards digital transformation. Between 2019 and 2022, the COVID-19 pandemic, a "black swan" event, completely changed the social and economic development trends of countries around the world. Enterprises have shifted from being initially forced into partial scenarios of "having to work from home" to actively embracing comprehensive, profound, three-dimensional digital transformation and upgrading of the entire socio-economic structure [1]. Figure 1 shows McKinsey's research results in 2020, indicating that the global digitization process advanced by seven years overall during the pandemic from 2019 to 2020. With the accelerated application of AI and the comprehensive rollout of innovative 5G applications, over 170 countries have successively released digital national strategies, shaping the future of humanity. North America's share of digital products and services reached 60% in 2020. The Asia-Pacific region has seen the most significant growth, increasing from 33% to 54%. Digital transformation, intelligent upgrading, and integrative innovation have jointly

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driven changes in economic and social forms and their operational models [2]. In this era, digital transformation for enterprises is no longer a choice but an essential path for survival and development. The digital economy has become a key driver of global economic growth. According to a 2020 research report from CAICT and Roland Berger, digitization serves as an engine for economic growth, with the digital economy growing at more than twice the rate of GDP. High-income countries' digital economy accounts for 46.5% of their GDP. The digital economy growth rate in various countries is significantly higher than their respective GDP growth rates during the same period (refer to Figure 2).

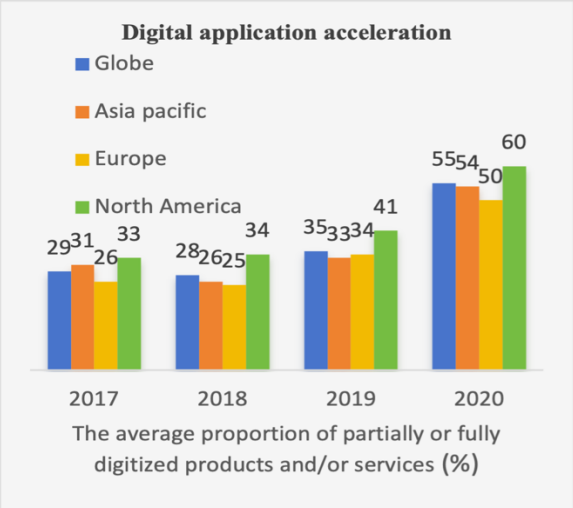

Figure 1: Accelerating digitalization process of the epidemic (Photo/Picture credit: Original).

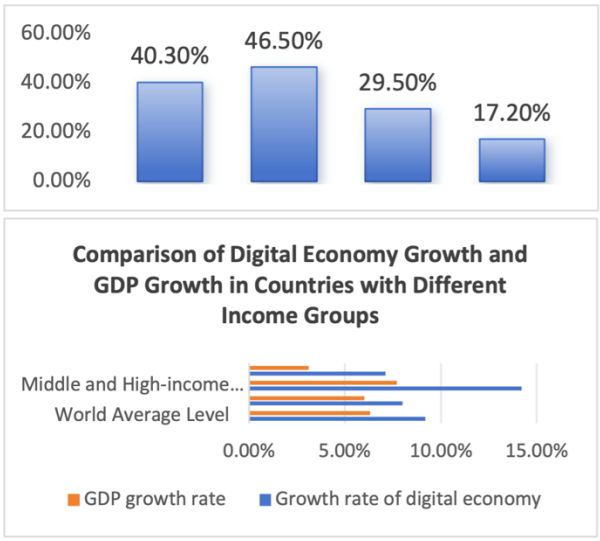

Figure 2: The proportion of digital economy to GDP in different income countries. (Photo/Picture credit: Original)

2. The Core Value of Corporate Digital Transformation

2.1. Definition of Digital Transformation

With the rapid development of information technology, digital transformation of enterprises has become an indispensable trend for the development of various industries globally. In recent years,

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this topic has attracted a lot of scholars and business practitioners for in-depth exploration. Regarding the connotation of digital transformation, research mainly focuses on multiple dimensions such as technological innovation, organizational change, business models, and collaborative development. Although there is still debate among academics and industry professionals about the precise definition of digital transformation [3]. This study attempts to elaborate on its connotation from a certain perspective: the deep integration of digital technology and mathematical algorithms into the business processes of enterprises, driven by data to promote comprehensive business innovation, thereby giving rise to new business forms and operating models aimed at achieving an all-round reshaping and digital upgrading of the enterprise as a whole [4]. In this process, the entire production and operation of the enterprise are measurable, traceable, predictable, and inheritable. The specific manifestations include digital transformation of enterprise strategy, marketing, products and production, business models, and management.

2.2. Reasons for Corporate Digital Transformation

Digitalization has shifted from being an auxiliary tool for enterprise operations to being an indispensable force supporting the core strategy of enterprises. Digital transformation is no longer an optional choice but an essential path for enterprise development. It plays a pivotal role in shaping the future competitive landscape of enterprises and has a profound impact on formulating new competitive strategies and winning future markets [5].

Table 1: Reasons for corporate digital transformation.

Enterprise dilemma	Breakthrough methods	The role of digitization
Overcapacity, serious homogenization, and crowded competition channels	Enterprises need differentiation	Digitization provides enterprises with tools and means to generate innovative products and services.
The market is changing rapidly.	Enterprises need to improve agility in manufacturing, supply chain, and other aspects.	Digitization makes flexible manufacturing and flexible supply chain possible.
Customers are becoming more personalized and diversified, leading to severe customer churn.	Enterprises need to shift their focus from being product-centered to being customer-centered.	Digitization provides enterprises with many new media to engage with customers more frequently.
Impact of the internet	Enterprises need to consider new digital, marketing, and channel approaches.	Digitization brings changes in marketing channels.
The influence of capital and outdated business models.	Enterprises need to learn from the Internet business model.	Business model innovation in the context of digitization.
Extensive management	Enterprises need to study management science more.	Practice of digital operation

From Table 1, it can be analyzed that traditional enterprises are facing an imperative need for digital transformation due to the lack of core competitiveness. Enterprise digital transformation will digitally optimize business operations and/or processes, enhancing the level of process automation. Through digital product upgrades or the development of new products/services, revenue growth can be achieved. The global flow of data and information enables the movement of goods, services, finance, and people. Data collection and analysis are utilized to understand customer needs and

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enhance customer experience. Additionally, the availability and visibility of data facilitate better management of business performance.

2.3. Core Values of Corporate Digital Transformation

The core mission of digital transformation focuses on optimizing, innovating, and reshaping the value system. It will delve into critical issues such as "what aspects are encompassed by the core values," "how core values are generated and transmitted," and "how to effectively capture these core values" regarding the value-add brought about by digital transformation. To this end, it has identified the essential values inherent in enterprise digitization, constructed core strategies to facilitate digital transformation, and established methodological mechanisms that integrate these core values throughout the entire digital transformation process. This ensures stable and effective results from the digital transformation, enabling sustainable and innovative enterprise development [6].

The core orientation of the value benefit classification system, as shown in Figure 3, is to guide organizations to tap into the innovation-driving potential of data and strengthen the development and asset operation of data value through the application of new-generation information technology. The core values of digital transformation include, but are not limited to:

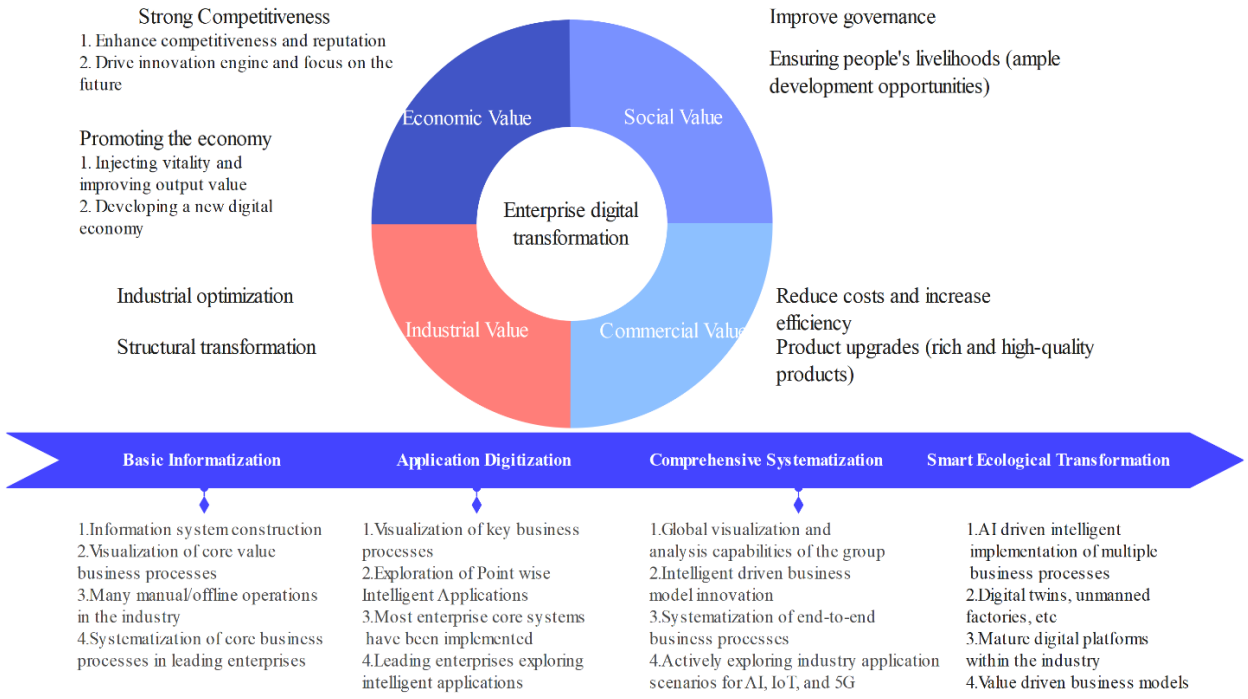

Figure 3: Core value map of enterprise digital transformation (Photo/Picture credit: Original).

The core value of enterprise transformation is mainly embodied in four aspects: economic value, social value, industrial value and business value. In terms of the economic value of the enterprise digital transformation process, people, processes, and assets are closely linked, and the synergistic and integrative effects brought about by the adoption of digital tools such as Advanced Planning and Scheduling System (APS), Manufacturing Execution System (MES), and Enterprise Resource Planning (ERP) are used to improve the digitization, scientificity, and efficiency of the production and operation management decision-making. It establishes new digital competitive advantages through customer relationship management (CRM), sharing economy, platform economy, etc., cultivates new business based on digital solutions as well as ecosystems and incubation, and enhances the level of innovation capability of enterprises. The development of digital transformation also

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brings value creation and disruption to industrial development. The delivery and digitization of value across the entire industrial chain, from the supply of product elements, product development, manufacturing and packaging, marketing or sales and distribution, and consumer retailing, is constantly being strengthened. Open innovation through digital transformation has emerged e.g. smart packaging, 3D printing, personalized communication smart supply chain, virtual inventory. A new supply chain model has been built with digitalization at its core, realizing digital development, smart supply, smart factories, connected customers, synchronized planning and dynamic execution. From the traditional offline mode to the online Internet mode, and then to the online and offline plus AI future mode to achieve the innovation of the channel mode. From the traditional mode of what enterprises produce and what users buy to the emergence of the product mode in which users are fully involved in product design and so on. Through some of the above innovations, it has achieved the reconstruction of the business value of the enterprise, to promote employment and create employment opportunities, improve social labor productivity, and improve the quality of life and happiness of the public. Ultimately, the social mission value of the enterprise is realized.

3. Core Strategies and Paths for Corporate Digital Transformation

3.1. The Difficulties of Corporate Digital Transformation

Harvard Business Review, McKinsey and CIO Magazine and many other authorities have conducted an in-depth discussion of the "reasons why digital transformation fails". A key reason is that many enterprises do not have a good understanding of the challenges of digital transformation. The challenges of digital transformation can be attributed to two major dimensions: hard power and soft power. As far as hard power is concerned, it covers the three major elements of technology, business and data; while soft power mainly involves the three aspects of corporate culture, organizational structure and talent pool. It is this neglect of the all-encompassing requirements of transformation that has led to the failure of digital transformation. It is based on the understanding of the above difficulties, the core strategy and path of enterprise digital transformation can be divided into: investigation and analysis, goals and vision, strategic planning, organizational structure and team, transformation process wave and implementation of the implementation of five stages (see Figure 4 for an illustration) [7].

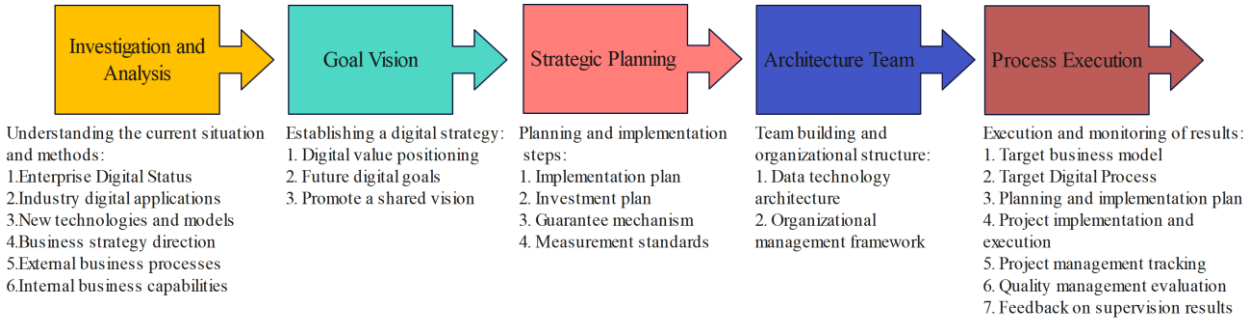

Figure 4: Core strategies and pathways for corporate digital transformation.
(Photo/Picture credit: Original)

3.2. Investigation and Analysis of Digital Transformation

When undertaking digital transformation, enterprises first need to clarify the purpose and objectives of the investigation. For instance, understanding the current status of the enterprise's digital transformation, the challenges it faces, successful cases, and future trends. It is also crucial to comprehend the digital measures already taken by the enterprise, the difficulties and challenges

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encountered, and the support and assistance they expect to receive. Based on the collected data, an analysis of the current status, issues, and challenges of digital transformation is conducted, and a survey report on digital transformation is prepared.

3.3. Goals and Vision of Digital Transformation

When undertaking digital transformation, enterprises need to clarify the goals and vision of the process. The goals should be specific, measurable, and aligned with the enterprise's existing business development direction, taking into account changes in market demand and the competitive environment. The vision, on the other hand, describes the desired state of the enterprise after digital transformation, which can motivate active participation and engagement from enterprise members. Having clear goals and a vision provides a definitive direction for the enterprise, ensuring that all decisions and actions during the transformation process revolve around these goals and vision.

3.4. Strategic Planning for Digital Transformation

Developing a strategic plan for digital transformation is a crucial step to ensure its success. The strategic plan should include specific goals, timelines, resource allocation, risk assessment, and performance evaluation. Enterprises can divide digital transformation into short-term, medium-term, and long-term phases based on their actual situations and set clear goals for each phase. Additionally, the strategic plan needs to consider resource and budget arrangements to ensure the feasibility and sustainable development of the digital transformation initiative.

3.5. Organizational Structure and Team for Digital Transformation

The organizational structure and team are critical factors for the success of an enterprise's digital transformation. Enterprises need to establish an organizational structure adapted to digital development. This may involve creating a dedicated digital transformation team led by senior leadership, with various subgroups responsible for digital strategy formulation, technology selection, data analysis, and application. Simultaneously, enterprises need to be equipped with talents possessing digital expertise and qualities, and strengthen the training and selection of management personnel. Supporting the realization of digital transformation is achieved by establishing a good corporate culture and innovative team.

3.6. Waves and Implementation of Corporate Digital Transformation

Enterprise digital transformation is a gradual process that needs to be implemented in stages. Firstly, enterprises can start with the most critical business scenarios, such as customer interaction, product design, supply chain optimization, and gradually promote digital transformation. Secondly, enterprises need to set specific goals and timelines for each stage to ensure the controllability and sustainability of the transformation process. Finally, enterprises need to evaluate and provide feedback on the transformation achievements of each stage, and adjust transformation strategies and directions in a timely manner to ensure the ultimate success of digital transformation.

4. Practical Case Analysis of Corporate Digital Transformation

This section will analyze the practice and reflections on the digital transformation process using the automotive manufacturing industry as an example. The current automotive manufacturing industry has basically adopted ERP software, but its application is not yet in-depth, and quite a few enterprises have not achieved integrated applications. PLM/PDM has been used or is beginning to be used in enterprise design management. Technologies such as barcodes or RFID are widely used in logistics

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management or process tracing in automobile manufacturing enterprises. Some enterprises use CRM software to manage the marketing process. The degree of automation in enterprise production management and process control has increased, and some enterprises have begun to promote digital workshops or unmanned workshops. The information technology content of products has increased, such as the addition of online intelligent diagnosis to products. Due to the complexity and difficulty involved in the digitization process, to focus the issue more narrowly, it has chosen the production and manufacturing link in the key business plan of automobile manufacturing as a case to illustrate the application of digital transformation in enterprises.

The production and manufacturing link of automobiles needs to ensure accurate task arrangement, time and process control, with precision errors guaranteed within 1ms; the entire production area ensures wireless coverage, the production line can be rapidly reconfigured with flexibility, and machines are interconnected and mobile; equipment operation can achieve remote maintenance and control, using technical means such as AR/VR, real-time video, etc.; information sources such as production environment, materials, PLC, personnel, equipment, production systems, etc., are fully integrated; communication is free within the area for personnel, machines, control centers, and broadcasts. How to achieve digital transformation and upgrading? Adopt a factory + edge cloud + industry cloud solution. The factory end completes the upgrading of sensors, equipment, raw materials/components, manufacturing/assembly, etc.; the edge cloud application adopts 5G technology to achieve high reliability, low latency, and massive connectivity for digital transmission. At the same time, edge computing has low latency, saves bandwidth, and achieves network security and high reliability through large computing power + edge cloud collaboration; the smart manufacturing industry cloud has three levels: decision-making layer, equipment layer, and big data layer. Decision-making layer: AI + big data enables equipment management, product management, and service management. The equipment layer has the following functions: 1. 5G + edge computing connects the factory; 2. Product craft, manufacturing, logistics, sales, research and development, etc.; 3. Services: supply chain, customization, tracking, etc. The big data layer centralizes equipment data, product data, service data, and management data from the management layer. It is used for quality control, manufacturing processes, logistics, and monitoring of the core capabilities of edge computing applications in scenes. Figure 5 visually demonstrates that with the help of digital tools such as 5G, AR/VR, edge clouds, and central clouds, customized, multi-scene, and intelligent production solutions can be achieved, ensuring that plans are executable while reducing various production costs, and providing high-quality functions and rich scene support. It helps enterprises to achieve multi-factory collaboration, open up supply chain information, achieve global transparent management; integrate planning and scheduling, fully grasp daily/weekly/long-term plans; achieve minimum total cost, ensure order delivery satisfaction rate (average improvement of 15%); achieve complex production requirements; support more diversified production modes; more intelligently handle urgent orders and insertions (response speed increased by 3 times); support multi-scene simulation, providing a variety of decision-making suggestions, etc.

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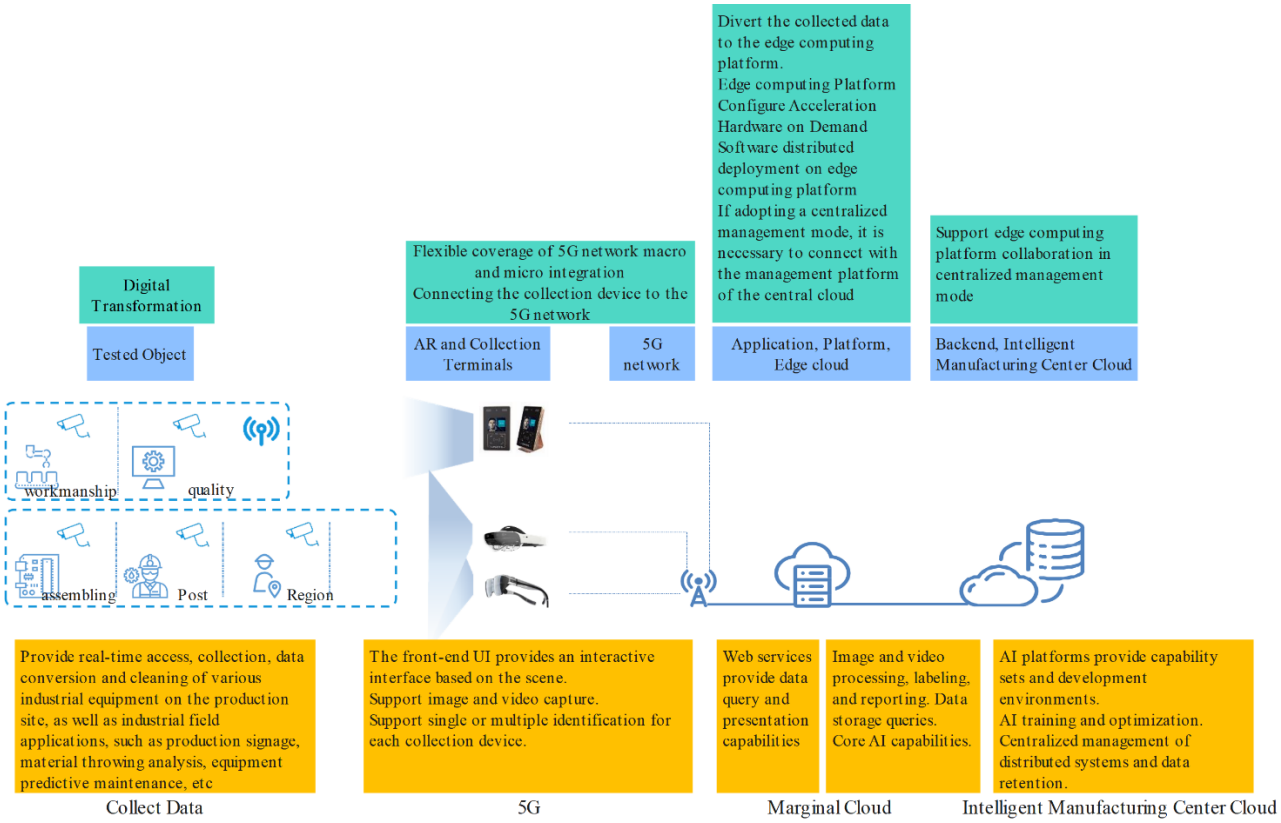

Figure 5: Digital process diagram of automobile manufacturing (Photo/Picture credit: Original)

5. Risks and Challenges of Digital Transformation for Corporates

5.1. Data Security and Privacy Protection

In the process of digital transformation, data has become the core asset of enterprises, but this also means that the risks of data security and privacy protection have increased accordingly. Firstly, with the growth of business data volume, hackers and cyber attackers may target these data, leading to data breaches or tampering. In addition, when processing personal data, enterprises need to comply with relevant privacy protection laws and regulations, otherwise they may face legal risks and reputation damage. To address these risks, enterprises need to adopt a series of security measures, such as encryption technology, secure transmission protocols, firewalls, antivirus software, etc., and regularly conduct website security vulnerability checks [8].

5.2. Technical Risks and System Integration

Digital transformation often requires upgrading or replacing existing technical systems, which may bring technical risks and challenges in system integration. New technologies may have instability or incompatibility with old systems, leading to technical issues or system interruptions during the transformation process. Additionally, data exchange and information sharing between different systems may face obstacles, requiring complex system integration efforts. To reduce these risks, enterprises need to conduct sufficient technical research and risk assessment before the transformation, select appropriate technical solutions, and formulate detailed system integration plans [9].

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5.3. Challenges and Resistance in Organizational Change

Digital transformation involves not only technological changes but also requires organizations to undergo structural and cultural changes. During this process, resistance and challenges may arise from internal employees. Some employees may feel uneasy or concerned about new technologies and working methods, worrying that their skills and knowledge may not meet the new requirements. Furthermore, digital transformation may result in the elimination or modification of certain positions, causing employee resistance. To address these challenges, enterprises need to develop detailed change management plans that include measures such as employee training, communication, and incentives to ensure that employees understand and support the digital transformation efforts [10].

6. Conclusion

Digital transformation will become a key driver for enterprise development. Based on the results of this study, it proposes the following prospects and recommendations for future digital transformation in enterprises: (1)Continuous deepening of technology application: Enterprises should continue to focus on and apply the latest information technologies, such as artificial intelligence, big data, cloud computing, etc., to enhance data processing and analytical capabilities, and further tap into the potential value of data. (2)Strengthening data asset management: Establish a comprehensive data asset management system to ensure data quality, security, and compliance. (3)Maximize the value of data through data asset operation. Innovating business models: Based on digital transformation, actively explore and experiment with new business models, such as smart manufacturing, sharing economy, platform economy, etc., to adapt to the development needs of the digital economy era. (4)Building a digital ecology: Work with upstream and downstream enterprises in the industry chain to jointly build a digital ecosystem, realizing information sharing, resource sharing, and value creation, and promoting the coordinated development of enterprise digital transformation.

In conclusion, digital transformation holds significant potential for enterprises in the future. By continuously deepening technology application, strengthening data asset management, innovating business models, and building a digital ecology, enterprises can effectively leverage digital transformation to drive sustainable growth and competitiveness in the rapidly evolving digital economy.

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