

Reconstruction of Operation Mode and Evaluation of Transformation Effect: The Road to Digitalization of Traditional Enterprises

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Abstract: With the rapid advancement of information technology, digital transformation has become a pivotal strategy for traditional enterprises. By deeply integrating digital technologies, these organizations can enhance operational efficiency, optimize customer experiences, and drive innovation. However, digital transformation transcends mere technological adoption—it requires a comprehensive overhaul of business models, management processes, and corporate culture. This paper examines the restructuring of operational frameworks during digital transformation, analyzes implementation challenges and effectiveness evaluation, and provides actionable insights for traditional enterprises through real-world case studies.

Keywords: Traditional enterprises; Digital transformation; Operation mode; Reconstruction; Effect evaluation.

1. Introduction

As the global economy accelerates its digital transformation, traditional enterprises face unprecedented challenges and opportunities. Digital transformation

It is not merely about technological upgrades, but a profound transformation of business operation models. Confronted with intense market competition and rapidly evolving consumer demands, traditional enterprises must enhance their competitiveness through digital transformation. This process requires comprehensive optimization across technology, organizational structure, and business processes. Therefore, studying the restructuring of operational models and evaluating their effectiveness in digital transformation holds significant practical value.

2. Reconstruction of the Operation Mode of Digital Transformation of Traditional Enterprises

2.1. The Impact of Digital Transformation on Traditional Enterprise Operation Model

Digital transformation has revolutionized corporate operations, shifting from rigid, linear processes to agile, interactive digital models. By leveraging information technology, businesses overcome time and space constraints, enabling faster responses to market shifts. Integrating technologies like big data, cloud computing, and AI across operational management now allows for smarter decision-making and optimized resource allocation.

2.2. Key Technologies in the Reconstruction of Operation Model

In the process of digital transformation, the application of core technologies serves as a key driver for restructuring traditional enterprise operational models. Big data technology enables companies to gain deep insights into market demands, consumer behaviors, and operational bottlenecks through massive data analysis, thereby enabling more precise decision-making. Cloud computing provides flexible

resource allocation and data storage solutions, allowing enterprises to scale technical infrastructure on demand while reducing IT hardware investments. The introduction of artificial intelligence has revolutionized corporate decision-making processes. Through machine learning and automated decision systems, businesses can achieve accurate demand forecasting, personalized recommendations, and automated production. For instance, AI can adjust production parameters in real-time based on data during manufacturing, minimizing resource waste and increasing output. The application of IoT technology in smart manufacturing and supply chain management enables real-time interconnection, remote monitoring, and maintenance of equipment and products, thereby enhancing production efficiency and equipment utilization. In summary, the integration and application of technologies have made traditional enterprise operations more efficient, intelligent, and agile [1].

2.3. Organizational and Cultural Changes in the Reconstruction of Operation Model

Digital transformation is not merely a technological shift, but a profound overhaul of organizational structures and corporate culture. Traditional enterprises often operate under rigid hierarchical and bureaucratic management systems, which can lead to sluggish decision-making and delayed responses in fast-changing markets. During digital transformation, companies must redesign their organizational frameworks to adopt flatter management structures that enhance decision flexibility and efficiency. Cross-functional collaboration enables faster project execution and problem-solving. Equally crucial is cultural transformation – transitioning from traditional management practices to an innovation-driven, open culture that encourages employees to propose new ideas, take risks, and provide timely feedback. Management should lead by example through innovation support and failure tolerance to boost employee engagement. Strengthening digital skills training is essential to improve workforce proficiency in emerging technologies, ensuring smooth transition. Ultimately, these organizational and cultural shifts will empower businesses to better adapt to digital-era challenges, ultimately enhancing innovation

capabilities and market competitiveness [2].

3. Indicator System for Evaluating the Effect of Digital Transformation

3.1. Improving Operational Efficiency

Digital transformation significantly enhances corporate operational efficiency, particularly in process automation, data intelligence, and decision optimization. First, by adopting intelligent tools like Robotic Process Automation (RPA) and Artificial Intelligence (AI), companies can reduce manual operations and minimize human error rates. RPA automates repetitive, rule-based tasks such as order processing, inventory management, and financial audits, dramatically improving processing speed and accuracy while cutting HR costs. Moreover, AI enables businesses to rely on precise data analysis for decision-making, moving beyond experience-based judgments. Through machine learning algorithms, companies can conduct in-depth historical data analysis to predict future trends and make more informed decisions. This data-driven approach not only boosts operational efficiency but also reduces subjectivity and errors in decision-making, optimizing resource allocation [3]. Second, digital transformation enhances information sharing and real-time updates through cloud computing and big data technologies, optimizing supply chain management. For instance, cloud platforms allow real-time sharing of inventory, production, and logistics data across departments, eliminating information delays and data silos while improving supply chain responsiveness. Real-time data acquisition and analysis enable companies to quickly adjust production plans, avoiding overstocking or overproduction and reducing operational costs. Finally, the application of intelligent devices like Internet of Things (IoT) technology also plays a crucial role in enhancing operational efficiency. By monitoring equipment status in real time, enterprises can detect potential failures or performance declines early, reducing downtime and boosting production line utilization. In summary, digital transformation—through technologies like automation, smart systems, and real-time data sharing—significantly enhances operational efficiency, cuts costs, and strengthens competitiveness.

3.2. Optimization of Customer Experience

Digital transformation plays a vital role in corporate operations, with one of its most significant impacts being the enhancement of customer experience. This optimization is driven by digital technologies such as big data, artificial intelligence, and personalized services. First, big data technology enables businesses to collect vast amounts of customer interaction data, including purchase histories, browsing behaviors, and feedback. Through in-depth analysis of this data, companies gain comprehensive insights into customer needs, preferences, and latent demands, allowing them to provide more personalized products and services. For instance, e-commerce platforms like Amazon use customers' purchase histories and browsing records to recommend potentially relevant products, significantly improving shopping experiences and satisfaction. Second, artificial intelligence (AI) has revolutionized customer service, particularly in support operations. AI technologies leverage natural language processing (NLP) and machine learning algorithms to automatically answer common questions, handle complaints, and even make personalized

recommendations. In industries like e-commerce, banking, and telecommunications, AI-powered customer service bots have become mainstream, enabling 24/7 availability for instant responses to customer inquiries and enhanced satisfaction. Additionally, the widespread use of social media and mobile apps has created more direct and efficient communication channels between businesses and customers. Companies can maintain real-time interactions through social platforms, gather customer feedback, and promptly adjust service offerings. By leveraging digital solutions, businesses can not only enhance customer satisfaction but also strengthen customer loyalty, thereby fostering long-term customer value. In the digital age, customer experience has evolved beyond mere service quality to become a cross-channel, all-encompassing service ecosystem. Only through digitalization can seamless integration and personalized services be achieved, ultimately elevating both customer experience and corporate brand image [4].

3.3. Improving Innovation Ability

Digital transformation has significantly enhanced corporate innovation capabilities, particularly in product development, business model innovation, and market expansion. Firstly, it enables companies to accelerate R&D processes through emerging technologies. For instance, 3D printing technology allows rapid prototyping and testing, shortening the product development cycle from design to production and dramatically improving innovation efficiency. Meanwhile, digital platform-based Product Lifecycle Management (PLM) systems provide comprehensive data support throughout the entire product lifecycle—from R&D and production to market feedback—ensuring continuous optimization and enhanced market adaptability. Secondly, AI and machine learning empower businesses with robust decision-making support. By analyzing vast historical data, companies can identify emerging market demands and technological trends, enabling proactive innovation strategies. For example, data analysis might reveal shifting consumer preferences in specific product categories, prompting timely product redesigns or upgrades. This innovation-driven approach helps businesses gain a competitive edge in highly competitive markets. Furthermore, digital transformation drives business model innovation. Digital technologies empower traditional industries to adopt hybrid online-offline models through new platforms, such as the sharing economy and platform economy. These innovative business models not only diversify revenue streams but also boost market penetration and user retention. For instance, traditional retailers have enhanced both the diversity of their sales channels and customer engagement by integrating online platforms with physical stores. These innovative strategies not only drive breakthroughs in products and services but also open up new market opportunities, ultimately boosting their competitiveness in the industry.

4. Challenges and Coping Strategies in Digital Transformation

4.1. Challenges in Technology Integration

Technical integration stands as one of the most critical challenges for traditional enterprises undergoing digital transformation. The key issues involve ensuring compatibility between legacy and new technologies within existing IT infrastructure and application systems, while maintaining

seamless integration. Many organizations still rely on outdated IT systems, where poor data flow and inconsistencies between platforms create significant barriers during digitalization. To address this, companies should adopt a phased approach to technological upgrades rather than implementing large-scale overhauls. This strategy helps mitigate risks and ensures business continuity. First, adopting modular architectures allows enterprises to implement new technologies separately from existing systems, gradually introducing new features and platforms to minimize conflicts. For example, migrating core business processes to cloud-based ERP systems while integrating them with cloud platforms enables flexible scalability. Second, effective data integration is crucial. By leveraging middleware or data integration platforms, organizations can synchronize and share data across systems in real-time, eliminating information silos. Finally, successful integration requires dedicated technical teams. Enterprises must invest in developing skilled teams or establishing strong partnerships with technology vendors to ensure smooth implementation of technical integration [5].

4.2. Talent Shortage Issue

Talent shortage remains one of the most prominent challenges in corporate digital transformation. With the rapid advancement of digital technologies, demand for professionals in key sectors like big data, artificial intelligence, and cloud computing has surged, creating growing gaps in specialized talent. However, traditional enterprises often lack skilled personnel proficient in cutting-edge digital technologies, leading to operational bottlenecks during their transformation. The solution hinges on talent cultivation and recruitment. First, companies should enhance internal training programs to improve employees' digital literacy and skills, ensuring their adaptability to new workflows and technological applications. For instance, implementing regular digital training courses and technical skill-building initiatives can boost workforce capabilities. Additionally, partnering with universities and research institutions to establish talent development centers can attract digital specialists. Second, flexible compensation and incentive mechanisms are crucial for attracting and retaining top digital talent. Establishing innovation reward systems that recognize and reward employees' technical proposals proves particularly effective. Finally, external collaboration and resource sharing—such as partnering with digital consulting firms to bring in external experts for technical support and strategic guidance—can help bridge talent gaps. Through coordinated efforts, organizations can effectively address talent shortages and drive successful digital transformation.

4.3. Management and Cultural Adaptation Issues

Digital transformation is not merely a shift in technology and processes, but a profound reshaping of corporate management and culture. Traditional enterprises often grapple with outdated management models and organizational cultures that create barriers when navigating the fast-evolving digital landscape. For instance, conventional hierarchical structures with centralized

decision-making and inefficient information flow often stifle employee autonomy and innovation, failing to meet the demands of agile adaptation and creative thinking in digital transformation. To address this, companies must restructure their organizations by adopting flatter management hierarchies. Such organizational flattening reduces administrative layers, enhances decision-making efficiency, and ensures smoother information flow. Furthermore, cultivating a culture that embraces innovation and tolerates failure is crucial. Given the inherent uncertainties in technological experimentation and business model exploration during digital transformation, organizations should encourage employees to boldly experiment with new ideas and methodologies, foster cross-departmental collaboration, and embrace rapid iteration through trial-and-error processes. The cultural leadership of management plays a pivotal role—only when top executives establish a clear vision for digital transformation can corporate culture truly evolve. Finally, companies must strengthen digital training programs that go beyond technical skill development to nurture digital thinking, enabling employees to better understand the significance and objectives of digital transformation and boost their engagement. Through innovative management approaches and cultural transformation, enterprises can successfully navigate the challenges of digital transformation and enhance their competitiveness in the digital economy.

5. Conclusion

The digital transformation of traditional enterprises is a complex and long-term process requiring systematic restructuring across technology, organization, and culture. Through digital transformation, companies can not only enhance operational efficiency and optimize customer experience but also strengthen innovation capabilities, laying a solid foundation for sustainable development. However, the transformation process also faces multiple challenges such as technology integration, talent shortages, and management culture adaptation. To address these issues, enterprises should adopt flexible strategies and continuously drive synchronized updates in technology, talent, and management to ensure successful implementation of digital transformation.

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