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Research on Value Chain Cost Management under Digital Transformation of Midea Group

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Abstract

With the emergence and development of digital technologies such as the Internet, cloud computing, artificial intelligence, and big data, the digital economy has become an important tool for leading industrial transformation and economic growth, and digital transformation is gradually becoming a key entry point for enterprises to innovate and enhance competitiveness. In the "14th Five-Year Plan," China sets "accelerating digital development and building a Digital China" as a long-term goal, while also prioritizing the digital transformation of enterprises as one of its key tasks. To respond to the national call and the call of the times, various enterprises have accelerated their digital transformation efforts, treating it as a crucial strategic priority. Through digital transformation, enterprises can achieve real-time decision-making, precise forecasting, improve cost management effectiveness, reduce costs across all links in the value chain, and enhance overall corporate competitiveness. This article takes Midea Group, which has achieved certain success in digital transformation, as a case study to examine the impact of digital transformation on its value chain cost management, providing some reference for enterprises that are currently undergoing or will undergo digital transformation.

Keywords:digital transformation; value chain; cost management

Introduction

With the rapid development of digital technology, the wave of digitalization has swept through all industries, becoming a new engine driving industrial development. To seize the new opportunities brought by the digital wave, our country has continuously introduced new policies related to digital technology in recent years. The State Council emphasized in the Notice on Issuing the "14th Five-Year Plan for Digital Economy Development" that it is necessary to strengthen the construction of digital infrastructure, improve the governance system of the digital economy, and promote the coordinated advancement of digital industrialization and industrial digitalization, empowering traditional industries to transform and upgrade, cultivating new industries, new business forms, and new models, continuously strengthening, expanding, and optimizing Chinas digital economy, and promoting national economic growth. Digital transformation can bring new development opportunities to enterprises, and manufacturing enterprises can enhance their overall value chain

digital utilization through digital transformation, manage costs more precisely, deeply explore the value of various business links, and achieve the maximization of corporate value. This article takes —— Midea Group, a benchmark company in the home appliance manufacturing industry, as the research object, placing digital transformation and value chain cost management theory under a unified research framework, studying the impact pathways and effects of digital transformation on value chain cost management.

Literature review

Digital transformation

In recent years, with the widespread application of digital technology and the vigorous development of the digital economy, various industries have begun to undergo digital transformation in order to seek new developments. Since digital transformation is a relatively new wave in recent years, there is no consensus among academia on the concept of digital transformation. Fitzgerald, M.,and Kruschwitz, N., and Bonnet, D., and Welch, M. (2014) believes that digital transformation drives business change by leveraging digital technologies such as social media, mobile, analytics, and embedded devices to enhance customer satisfaction, optimize corporate operational processes, and create new business models. Vial, G. (2021)defines digital transformation as: Digital transformation is the strategic effect of using digital technology to drive organizational change and thereby achieve value creation. Verhoef, P. C.,and Broekhuizen, T., and Bart, Y.,and Bhattacharya, A., and Dong, J. Q.,and Fabian, N., and Haenlein, M. (2021) argue that the digital transformation of enterprises can be achieved in three stages: the first stage is information digitalization, the second stage is business process digitalization, and the third stage is comprehensive digitalization.

When discussing the paths of corporate digital transformation, many scholars have put forward their views and suggestions. These suggestions are mainly divided into macro and micro levels. At the micro level, scholars tend to emphasize the application of digital technology in enterprises under digital transformation.on Leipzig, T., and Gamp, M.,and Manz, D., and Schöttle, K.,and Ohlhausen, P., and Oosthuizen, G.,and von Leipzig, K. (2017) believes that when enterprises undergo digital transformation, utilizing digital technology can help analyze and predict customer needs, thereby meeting customers personalized and customized demands.Margiono, A. (2021) proposes that enterprises can achieve digital transformation through two approaches: one is enhancing digital capabilities by acquiring digitalized companies, and the other is improving digital R&D capabilities.Fathi, M., and Ghobakhloo, M. (2020), based on the fact that manufacturers primarily maintain competitiveness through product differentiation strategies, argues that the digital transformation of manufacturing enterprises is achieved by reshaping the business model.

Regarding the impact of digital transformation on business development, most people believe that digital transformation promotes business growth. For cost management, Westerman, G.,and Calméjane, C., and Bonnet, D.,and Ferraris, P., and McAfee, A. (2011)found through research that digital transformation integrates digital technology into all aspects of a company, saving costs in both R&D and production stages.Loebbecke, C., and Picot, A. (2015) discovered through their study that digital transformation optimizes operational models and enhances operational efficiency.

Value chain cost management related research

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Value Chain Cost Management Theory integrates Value Chain theory and Cost Management theory within the same research framework combining both approaches.In 1987, foreign scholars Johnson and Kaplan first proposed the concept of Value Chain Cost Management arguing that in cost management it is essential to comprehensively analyze and apply multiple factors such as strategy resources cooperation etc. to ensure that a company gains a greater competitive advantage.

Most scholars have found through research that compared to traditional cost management models, value chain-based cost management can effectively control costs at every stage and offers better cost management outcomes for enterprises. Foreign scholars Hergert, M., and Morris, D. (1989) argue that value chain cost management not only considers the costs generated by internal value activities within the company but also fully takes into account factors affecting corporate costs on external chains, thus offering more advantages in cost control for enterprises compared to traditional cost management methods. Dekker, H. (2009) believes that value chain cost management focuses not only on production costs but extends its perspective to the entire value chain, including procurement, R&D, production, sales, and after-sales service. Qingge, Z. (2012)Qingge (2012) points out that the value chain cost management model differs from traditional cost management models, encompassing a broader and more comprehensive scope, which helps companies obtain more accurate and comprehensive cost information during accounting calculations.

Value Chain Cost Management Method, as an advanced cost management approach, has received widespread attention from scholars.Elsayed, M.,and Wickramainghe, A., and Razik, M. A. (2011) believes that under the framework of strategic cost management, integrating corporate risk management into value chain management can enable companies to effectively prevent risks and reduce costs.Prieto-Carolino, A., and Siason, I. M., and Sumagaysay, M. B.,and Gelvezon, R. P. L.,and Monteclaro, H. M., and Asong, R. H. (2021) argues that in applying the Value Chain Cost Management Method, companies need to conduct in-depth analysis of each link in the value chain to identify existing issues and optimize them, which helps companies continuously discover potential cost reduction opportunities and innovation points. This continuous innovative spirit is conducive to maintaining a leading position in intense market competition.

Analysis and discussion

Company profile

Midea Group was founded in 1968 and began producing electric fans in 1980, entering the home appliance industry. In 1981, it officially registered and began using the Midea Group trademark. In 1993, Midea Group established itself internally and underwent shareholding system reform, setting up a motor company and a rice cooker company, which were listed on the Shenzhen Stock Exchange. In 2013, Midea Group achieved its overall listing on the Shenzhen Stock Exchange.

Since its establishment, Midea Group has actively expanded the market and always adhered to the corporate vision of "Striving for Excellence in Technology, Perfecting Life," focusing on research and development, and taking "Connecting People and Everything, Inspiring a Beautiful World" as its mission. Leading industry standards, it has developed well and provides satisfactory products and services to over 300 million users globally and key customers and strategic partners across various fields every year. Today, Midea Group comprises three listed companies, with sixteen manufacturing bases domestically and internationally, over sixty overseas branches in China,

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and its products are exported to more than two hundred countries and regions. It possesses the most comprehensive production lines for central air conditioners, refrigerators, washing machines, and microwaves in China, as well as the most complete small appliance industry cluster and kitchen appliance product group. In recent years, through strategic planning of its business structure, Midea Group has updated its original four major sectors to five business sectors, establishing four main strategic axes: technology leadership, user reach, digital intelligence drive, and global breakthrough, successfully achieving digital transformation and business model innovation.

Drivers of digital transformation

1. Enhance product competitiveness and break through the bottleneck of enterprise development

The national subsidy policies for home appliances are gradually decreasing, and the growth momentum of the real estate market is also gradually slowing down, leading to a gradual decline in the sales growth trend of home appliance products. At the same time, consumer demand in the home appliance industry has undergone significant changes, with consumers increasingly pursuing product quality. However, at that time, the home appliance industry suffered from severe product homogenization and intense competition, forcing merchants to stabilize their market share through price wars. Many companies, including Midea Group, realized that to enhance the competitiveness of their products, they could not rely solely on price differentiation but must increase innovation efforts and improve product quality, achieving differentiation in product quality to form a core competitive advantage. Therefore, more and more companies are exploring digital transformation to seek new opportunities for development. Midea Group leverages digital transformation to improve product performance, enhance product quality, and orient towards consumer needs, innovating a variety of intelligent products that meet consumer demands, thereby enhancing product competitiveness.

2. Reduce product cost and improve operation efficiency

With the rapid development of the times, the traditional production and sales model of home appliance enterprises is facing unprecedented challenges. These challenges mainly stem from changes in the market environment and consumer demand, among other factors, the shortcomings of the traditional production and sales model are gradually becoming apparent, hindering the further development of enterprises. On one hand, the traditional production and sales model tends to accumulate inventory, leading to higher raw material and storage costs for enterprises; on the other hand, product development may not necessarily align with market demand, easily causing waste in the R&D process, which is detrimental to cost management.

Midea Group has always attached great importance to corporate cost management, but before 2012, Midea Groups costs remained high, encountering a bottleneck in cost management as shown in Table 3-1. From 2007 to 2011, Midea Groups total operating cost ratio remained consistently above 95%, with the sales expense ratio fluctuating less than 1% from 9.81% in 2007 to 9.23% in 2011. The administrative expense ratio not only failed to decrease but instead increased annually, indicating limited cost control capabilities within the company. Issues need to be addressed from both the production end and internal management conditions. Midea Group needs to optimize its cost management through relevant measures. Through digital transformation, Midea Group has improved every link in the value chain, enhancing cost control capabilities across all links, reducing product costs, and improving operational efficiency.

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3. Adapt to the trend of digital era and enhance market competitiveness

In recent years, with the continuous development of the digital economy, there has been increasing policy support for its growth, and the role of the digital economy is continuously penetrating various industries. Against this backdrop, the digital economy in the industry has developed rapidly, bringing about new changes to traditional industrial models, including production methods, commodity circulation systems, and consumer purchasing behaviors with the advent of the digital age. For Midea Group, to maintain competitiveness in a complex market environment, it must seize the opportunities brought by the digital economy, making digital transformation an urgent necessity. Through digital transformation, Midea Group has changed its original business model, reshaped the corporate value chain, optimized internal management processes, and enhanced its ability to control consumer market demand, not only improving overall corporate efficiency but also boosting Midea Groups market competitiveness, ensuring its significant position in the highly competitive market.

4. Meet consumer needs and provide accurate services

With the continuous development of the times, consumer demand has also changed. The improvement in material and cultural standards has led peoples requirements for life to enter a higher level. For consumer products, consumer needs are no longer solely focused on the price and function of goods but increasingly consider performance, quality, comfort, etc. For home appliance companies, young consumers are gradually becoming the main consumer group for home appliances. On one hand, young consumers tend to use intelligent home appliances to improve the convenience of appliance usage; on the other hand, they hope that detailed product categories can provide them with more precise services. Based on this premise, personalization and customization have become one of the new important development directions for the home appliance industry. Through digital technology, Midea Group can promptly obtain consumer needs from the end of the value chain and then convert these complex and diverse information into data transmitted internally within the company. By analyzing this data, the company can quickly understand changes in market demand, develop and produce according to consumer needs, and then bring products to market, effectively meeting consumers personalized and customized consumption needs and providing precise services to consumers.

The digital transformation process

1. Digital Transformation 1.0: Information Integration

Midea Group faced significant external and internal pressures in 2012. Externally, intensified market competition and rising consumer demand forced the home appliance industry to consider the path of transformation and upgrading. Internally, Midea Group had numerous and relatively independent departments, leading to issues such as data incompatibility and non-unified corporate processes, which severely constrained the companys development. Against this backdrop of internal and external challenges, Midea Group decisively decided to integrate the information systems of all business units, breaking down the isolated and fragmented situation between departments. To achieve this, Midea Group set the transformation goal of "one system, one standard" and referred to this initiative as the "632 Project." The "632 Project" is a crucial milestone in Midea Groups digital transformation, establishing six unified operational systems, three management platforms, and two technical platforms. Through these efforts, Midea Group maintained high consistency across

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departments in terms of processes, data, and systems, effectively enhancing internal information flow efficiency and strengthening unified corporate management

2. Digital transformation 2.0: intelligent manufacturing

After achieving basic process interconnection and system interoperability in Midea Group, the digital transformation of Midea Group has shifted from rectifying internal management to promoting the digital operation of the entire value chain. During this stage, Midea Group mainly advanced two core tasks:

（1） Proposing the "Dual Intelligence" strategy, which refers to smart home and intelligent manufacturing. In terms of smart home, Midea Group actively applies advanced artificial intelligence technologies such as image recognition, voice recognition, and facial recognition, deeply integrating them with mobile internet technology to enable home appliances to connect with mobile devices, achieving a higher level of intelligence. In terms of intelligent manufacturing, Midea Group has established an intelligent manufacturing plant, comprehensively upgrading production equipment in aspects such as automation, standardization, and digitalization. At the same time, it has built a big data platform that aggregates data from various stages including R&D, production, sales, and procurement, achieving full-chain data connectivity. By making all systems mobile, employees, partners, and others can access the system conveniently through apps and other convenient methods at any time.

（2） Second is to establish a C2M model, reconstruct the manufacturing process and supply chain, achieving flexible manufacturing. On one hand, leveraging a big data platform to analyze customer needs and then transmit these needs to the R&D and production departments, enabling the R&D department to conduct product development and production, building a flexible customization platform, while Midea Group utilizes digital marketing and other means to achieve a "production based on sales" flexible production and sales model; on the other hand, utilizing digital warehousing and other management platforms to monitor and analyze data in real-time, promptly identifying and addressing potential issues, achieving a data-driven management model. At this stage, the classic "T+3" production model proposed by Midea Group is a concrete manifestation of its flexible manufacturing capability.

3. Digital Transformation 3.0: integration of hardware and software

In the Digitalization 3.0 phase, the main measures taken by Midea Group are to introduce industrial internet, achieving interconnectivity of industrial production equipment through the IoT of devices, extending and covering digitalization from software to hardware, connecting the business value chain from the consumer end to the production end. In 2018, Midea Groups Nansha Smart Factory took the lead in initiating industrial internet construction, connecting 189 devices of 41 types through intelligent gateway technology. This initiative not only completed the digital transformation of major production equipment and elements but also achieved the interconnection of everything in the production system, thereby building the hardware system of the factorys industrial internet.

4. Digital Transformation 4.0: Comprehensive digital intelligence

To fully address the challenges of the digital economy era, from the end of 2020 to the present, Midea Group has undergone a strategic transformation and upgrade, upgrading its original three strategic main axes to four strategic main axes. In terms of business segments, Midea Group has demonstrated foresight and innovation, adjusting the four business segments to five business

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segments. This strategic upgrade is the second major transformation and upgrade of Midea Group, and at the same time, Midea Group has clearly proposed the new strategic development goal of "comprehensive digitalization and comprehensive intelligence," which will inevitably transform the company into a technology-driven enterprise based on data.

The impact path of Midea Groups digitalization on value chain cost management

1. The impact path of digital transformation on internal value chain cost management

(1) Research and development phase

As a benchmark company in the home appliance manufacturing industry, Midea Group has always adhered to a customer-centric approach, prioritizing the fulfillment of personalized customer needs as its core development strategy. To this end, Midea Group continuously implements various measures to enhance user participation in product design and R&D processes. Since 2012, Midea Group has initiated the development of a big data platform called —— Kepler System, which comprises five components: the Observatory, Crystal Ball, Seismograph, Gyroscope, and Service Platform. Among these, the Observatory is a system designed to help Midea Group grasp comprehensive market information. By extracting and analyzing user review data, it aims to understand customer needs, identify market patterns, and provide feedback to the R&D department. Based on this feedback, the R&D department can improve products or develop new ones, effectively enhancing customer satisfaction with the products.

In the R&D phase, Midea Group utilizes digital technology to establish a big data platform, enhancing the companys capability in acquiring and analyzing customer data, transmitting the analyzed data to the R&D department to help it quickly understand market demands and develop products that meet market needs and consumer satisfaction, thereby maximizing the improvement of R&D efficiency and enhancing the companys core competitiveness.

(2) Procurement link

To control procurement costs and improve procurement efficiency, Midea Group has undergone digital transformation in the procurement process and established a digital ERP procurement platform. This platform provides enterprises with comprehensive digital supply chain management and automated procurement process tools, enabling centralized and standardized procurement. By leveraging internet technology and intelligent algorithms, Midea Group can gain a detailed understanding of every aspect of the procurement process on its digital procurement platform, allowing for real-time monitoring. As a result, companies can better grasp procurement information, promptly adjust procurement strategies, thereby reducing procurement risks and lowering procurement costs. The digital procurement platform manages the entire procurement process from bidding to calculation, achieving paperless, fast, transparent, and intelligent operations at each stage. During the procurement process, procurement personnel need only fill out a detailed procurement request, which is automatically pushed to suppliers with relevant procurement materials and supply capabilities. Procurement personnel can also select suitable suppliers based on historical procurement records and cost-effectiveness, effectively facilitating rapid matching between enterprises and suppliers, improving raw material procurement efficiency, and significantly reducing labor costs and communication costs with suppliers.

(3) Production link

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In 2015, Midea Group began to implement its smart manufacturing strategy. In the early stage of the strategy, Midea Group chose to purchase intelligent robots for use in production processes. As Midea Groups digital transformation progressed, it acquired a robotics manufacturing company and embarked on its own journey of robot research and development. Following this, Midea Group introduced the developed robots into factories, establishing intelligent digital factories. In these intelligent digital factories, robotic arms replaced human labor on production lines, achieving full automation from product assembly in the production stage to quality inspection in the testing stage, and then to automatic bagging, boxing, and sealing in the packaging stage. This not only effectively increased production capacity but also reduced labor costs and manufacturing expenses.

(4) Logistics link

In 2015, Midea Group began to implement the "One Warehouse" strategy. Before the implementation of the "One Warehouse" strategy, Midea Groups product distributors and operators had to find their own warehouses to store products and also had to seek logistics companies for logistics distribution. This model resulted in higher costs for logistics units. The so-called "One Warehouse" strategy refers to consolidating all inventory and logistics needs into one warehouse, implementing unified visibility, control, and allocation, and managing decentralized and extensive logistics through centralized management. Under this model, products can be directly delivered from the warehouse to stores or directly to consumers, reducing channel levels, avoiding long-term accumulation of funds and products, significantly decreasing the number of warehouses owned by Midea Group, and effectively lowering the companys logistics costs.

2. The impact path of digital transformation on external value chain cost management

(1) Supplier procurement process

To simplify the procurement process, Midea Group has established a comprehensive evaluation model for supplier performance, classifying and ranking suppliers for standardized application, ensuring the fairness and efficiency of the selection process. This method improves communication efficiency with suppliers and effectively reduces transaction costs. During the procurement process, through the full lifecycle management of this system, companies can gain a detailed understanding of suppliers entire lifecycle situations, combining current production needs and inventory conditions to formulate more precise procurement plans, thereby shortening the procurement cycle and saving procurement costs. After procurement is completed, both parties can view order information in real-time, ensuring transparency and traceability of transactions. Additionally, this system optimizes the delivery process, enhancing the companys management efficiency over suppliers, enabling the management team to achieve precise control over suppliers, effectively reducing information asymmetry risks during transactions, narrowing the distance between supply and demand, significantly reducing transaction times and costs for both parties, and improving procurement efficiency.

(2) Customer management link

To better understand customer needs and preferences and provide personalized services and products, Midea Group has established an intelligent CRM system and a dedicated customer relationship management team responsible for maintaining and serving customers. The customer relationship management team consists of professional technical personnel, customer service staff,

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and after-sales service personnel who handle customer issues and needs, providing satisfactory solutions to enhance customer satisfaction. The CRM system can create a customer database for collecting, organizing, updating, and storing customer information, achieving comprehensive management and utilization of customer data. It also sets up customer categories and labels to analyze and categorize customers. By classifying and locking target customers, it helps understand customer characteristics and needs, thereby formulating more precise sales and service strategies, simplifying communication processes with customers, reducing communication barriers, lowering communication costs, shortening customer payment cycles, and accelerating the flow of funds and inventory.

Analysis of the effectiveness of value chain cost management in digital transformation

1. Analysis of the effect of digital transformation on the cost management of internal value chain

(1) Research and development phase

Since the digital transformation, Midea Group has always attached great importance to the companys investment in the R&D phase. Midea Group has consistently upheld the core strategy of "technology leadership" and is committed to mastering core technologies. During the digital transformation process, Midea Group continuously increased its investment in the R&D phase, with R&D investment showing an upward trend from 2012 to 2022. In the year when it first embarked on digital transformation, Midea Groups R&D investment was only 1.7 billion yuan; by 2022, Midea Groups R&D investment was approximately 7.5 times that of 2012, reaching 12.6 billion yuan, and in 2023 it grew to around 14.6 billion yuan. In 2012, R&D investment accounted for only 1.77% of the annual operating cost, but as the companys digital transformation began, the company placed increasing emphasis on the R&D phase, leading to a continuous increase in investment. By 2016, the companys R&D investment had already exceeded 4% of operating costs. As the digital transformation progressed, the companys financial investment in the R&D phase gradually slowed down, with the ratio of R&D investment to operating costs remaining below 4% between 2017 and 2021, before rebounding to above 4% in 2022 and 2023. Since the start of its digital transformation, Midea Group has continuously increased its investment in R&D expenses, demonstrating the companys strong emphasis on the R&D phase.

(2) Procurement link

At the beginning of its digital transformation, Midea Group established a digital procurement platform to help the company implement centralized and standardized procurement. Meanwhile, the new production model strengthened cooperation between the company and suppliers, effectively reducing procurement costs. From 2012 to 2023, Midea Groups raw material costs showed an overall upward trend, with slight decreases in 2015 and 2023, but a significant increase compared to 2012. The increase in procurement costs was mainly due to increased production volumes and rising prices of copper, steel, aluminum, and other raw materials in the market. From 2012 to 2023, the ratio of raw materials to operating costs for Midea Group generally decreased, dropping from 87.96% in 2012 to 83.39% in 2023. This indicates that building a digital procurement platform has a positive impact on cost management in the procurement process, and centralized and standardized procurement have effectively reduced the companys procurement costs.

(3) Production link

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Although the number of production personnel in Midea Group has maintained an overall growth trend, the proportion of production personnel in the total workforce has been declining year by year. Meanwhile, the companys revenue has achieved a 130% increase, indicating that intelligent manufacturing has played a significant role in improving production efficiency. AI quality inspection technology has enabled intelligent robot technology to replace traditional manual quality inspection, not only effectively enhancing the efficiency of the companys production quality inspection process but also reducing the unit production cost of products. Midea Groups unit product production cost was 364.41 yuan per unit in 2012, which decreased to 299.7 yuan per unit in 2016, reaching its lowest point. From 2017 to 2018, due to the impact of rising raw material prices, there was a slight increase in unit product production costs, and from 2021 to 2022, there was also a slight increase, but compared to 2012, it has significantly decreased. Overall, Midea Groups unit product costs have noticeably decreased, demonstrating that the companys digital transformation has indeed achieved the goal of reducing costs in the production process.

(4) Logistics link

From 2012 to 2023, the inventory amount of Midea Group increased year by year, mainly due to the continuous expansion of the companys scale, with more and more factories being established, leading to an increase in inventory levels. Along with the rise in inventory amounts, Midea Groups inventory turnover ratio also increased continuously, showing an overall upward trend from 2012 to 2017, reaching its peak in 2017, and experiencing slight declines in 2018 and 2022, but still showing a significant increase compared to 2012, indicating that Midea Group performed well in inventory forecasting management, with the speed of inventory conversion continuously accelerating. The digital transformation has had a noticeable effect on cost management in the logistics process, reducing costs associated with logistics.

2. Analysis of the effect of digital transformation on external value chain cost management

(1) Supplier cooperation link

Midea Group has achieved scientific and effective procurement management through a digital procurement platform. Since Midea Group embarked on its digital transformation in 2012, the amount spent on the top five suppliers continuously decreased from 2012 to 2016. From 2017 to 2023, while there were fluctuations in the top five suppliers procurement amounts, the proportion of these top five suppliers in the annual procurement value generally showed a downward trend, decreasing from 13.46% in 2012 to just 6.19% in 2023. This indicates that the digital transformation has provided the company with more choices for suppliers, enabling cooperation with multiple suppliers and gradually reducing reliance on a single supplier.

The accounts payable turnover ratio can reflect the situation of a companys use of suppliers funds During 2012-2022, Midea Groups accounts payable turnover ratio continuously declined, dropping to 3.99 in 2023, indicating that the companys bargaining power and credit management capabilities have been continuously improving The digital transformation of the company has reduced the issue of information asymmetry between the company and suppliers, lowered communication costs between both parties, and optimized cost management in the supplier segment.

(2) Customer management link

Midea Group serves and maintains customers by establishing an intelligent CRM system and a dedicated customer relationship management team. During the process of customers purchasing

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products, through the collaborative effect of digital technology, the company can meet various customer needs, significantly shortening the delivery cycle. From 2012 to 2023, although there were some fluctuations in Midea Groups accounts receivable turnover days, it generally showed a downward trend. The accounts receivable turnover days in 2012 was 34.68, which decreased to 29.57 by 2023. This change indicates that Midea Group has implemented relatively strict policies in customer relationship management, achieving certain results, and further confirms the reduction in customer delivery cycles and the acceleration of capital turnover.

From 2012 to 2023, the total purchase amount from Midea Groups top five customers continued to rise, with the sales revenue from these top five customers accounting for 12.07% of the annual sales total in 2012, decreasing to 7.05% by 2014, and then rising again to 13.89% in 2020, showing a fluctuating trend. This indicates that in the early stages of digital transformation, companies lacked sufficient control over key accounts, but as digital transformation progressed, their ability to maintain relationships with key accounts gradually improved. During the process of digital transformation, Midea Group fully integrated and utilized various system platforms, significantly enhancing customer relationship management and reducing transaction costs such as communication and coordination with customers.

Conclusion

The digital transformation of Midea Group has reshaped the companys value chain and optimized all links in the corporate value chain. In terms of internal processes, Midea Group leverages digital platforms and software-hardware technologies to digitally upgrade core links such as R&D, production, sales, and logistics within the internal value chain, thereby improving operational efficiency. In the R&D phase, the company utilizes a digital R&D platform to break through time and space constraints, enabling creative interaction and significantly shortening the R&D cycle while reducing R&D costs. In the production phase, digital equipment is used for intelligent scheduling and flexible production, allowing smart machines to replace some human labor, not only reducing labor costs but also enhancing production efficiency. The optimization of internal links in Midea Groups value chain has strengthened collaboration among various departments within the company, effectively addressing the time lags present in traditional manufacturing across different links in the value chain, achieving cost reduction and efficiency improvement.

In terms of the external value chain of enterprises, digital transformation has strengthened the connection between enterprises and their upstream and downstream partners, changing the one-way relationship between traditional suppliers and customers. Enterprises have established an order-centric procurement model through digital technology, forming a community of interests among suppliers, core enterprises, and customers, thereby reducing transaction costs.

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