

Research on the Financial Performance of Digital Transformation of Physical Retailers: An Exploratory Case Study Based on Tianhong Shares

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Abstract

With the advent of the digital wave, the transformation and upgrading of physical retailers has become an urgent need, and the impact of digital transformation on enterprise performance is also increasing. Faced with the impact of digitization, Tianhong Co., Ltd., as a typical representative of digital transformation for physical retailers in China, has been exploring the path of digital transformation since 2010 to adapt to the development of the digital age. This article conducts an in-depth analysis of the driving forces and paths behind Tianhong Corporation's digital transformation, and explores the impact of digital transformation on the financial performance of physical retailers from three levels: cost efficiency, profitability, and operational capability. The research results indicate that digital transformation can help reduce business operating costs and improve profitability, but the effect on enhancing operational capabilities is not significant. The article further elaborates that digital transformation can affect enterprise performance through smart retail, optimizing supply chains, and enhancing "resource integration" capabilities. Corresponding suggestions are proposed to expand traditional sales channels, introduce digital talents, and build a suitable supply chain system. These provide useful references for physical retailers to achieve sustainable development in the process of digital transformation.

Keywords: digital transformation, Tianhong Corporation, financial performance

1. Introduction

Nowadays, with the explosive popularity of live streaming sales and the comprehensive development of mobile payments, the digital age has quietly entered our lives. The term 'digital economy' has also appeared multiple times in government reports. The 20th National Congress of the Communist Party of China pointed out the need to accelerate the high-quality development of the digital economy, promote the integration of digitalization and the real economy, accelerate the digitalization process, and build China into a digital economy industry cluster with international influence. Of course, the retail industry has also been greatly impacted. Traditional retail is no longer able to meet the diverse needs of consumers, and digital transformation will become an inevitable trend for the development of physical retailers (Lorenzo et al., 2021). A few years ago, due to the impact of the COVID-19, most of the retail enterprises were difficult to carry out offline sales, so they had to change the original sales model (Heiko et al., 2020). Many enterprises began to move towards digital transformation. Through online and offline combination, supply chain upgrading, precision marketing, personalized recommendation and other ways to improve business efficiency, improve customer experience, optimize supply chain management, etc., to meet the new requirements of contemporary consumers for shopping methods (Chen et al., 2023). Due to insufficient understanding of digital transformation, some enterprises have not been very successful in their digital transformation (Liu and Tang, 2018). Obviously, enterprises need to choose a digital transformation path that suits their actual situation, make reasonable use of resources, and achieve the goal of maximizing enterprise value (Seclen-Luna et al., 2022). Therefore, it has become particularly important to explore a digital transformation approach that is suitable for the development of one's own enterprise.

2. Introduction to the Digital Transformation Case of Tianhong Corporation

2.1 The Current Situation of Digital Transformation of Tianhong Corporation

Tianhong Corporation (also known as Tianhong Shuke Industrial Co., Ltd.) was established in 1984 and went public in 2010. Its controlling shareholder is China Aerospace Science and Technology Shenzhen Co., Ltd. After more than 30 years of steady development, from traditional retail to digital retail, its digitalization has achieved full store, full format, and full process coverage, forming a combination of "in store+home" retail and becoming a leader in technology retail (Hu et al., 2023). It also owns four major brands: 'Tianhong', 'Junshang', 'sp@ce', and 'Weio'. In 2019, the company has entered 29 cities in 8 provinces/cities including Jiangxi, Guangdong, Hunan, Fujian, Jiangsu, Zhejiang, Beijing, and Sichuan, with a total of 24 shopping centers, 68 comprehensive department stores, 17 independent supermarkets, and 171 convenience stores. It ranked 24th on the list of China's top 100 chain stores in the same year. As of 2023, its operating revenue for the first half of the year was 6.232 billion yuan, a year-on-year increase of 0.01%; Net profit was 215 million yuan, a year-on-year increase of 34.06%; The GMV of online product sales and digital service revenue is approximately 2.76 billion yuan.

2.2 The Process of Digital Transformation of Tianhong Corporation

2.2.1 Smart Retail

Tianhong Corporation's digital transformation has gone through three stages of transformation, from multi-channel retail to omni channel retail and then to smart retail. From 2010 to 2012, Tianhong was mainly engaged in multi-channel retail with online sales, expanding from traditional physical retail to online sales. The market undoubtedly became broader, so Tianhong began to create a professional e-commerce team, independently carry out online sales, and achieve multi-channel operation. From 2013 to 2015, Tianhong began to make a leap from PC to mobile and launched the 'home to home' service to achieve omnichannel retail. Through cooperation with Tencent, Tianhong has developed the first enterprise WeChat official account, and cooperated with third-party companies to achieve cross-border purchase and sales business, which has enabled Tianhong to gradually establish its own e-commerce business, so it has become more committed to digital transformation. Since 2016, Tianhong has implemented a smart retail strategy. Tianhong has started launching projects such as smart parking and mobile self-service payment to attract more consumers.

2.2.2 Introduce Digital Technology

As the name suggests, digital transformation requires the support of digital technology (Zhang et al., 2023). Tianhong's introduction of digital technology in digital transformation is manifested in the following aspects: firstly, retail digital research and development technology. Tianhong Corporation has invested a significant amount of resources in the research and development of leading retail digital technology nationwide. The implementation of this technology has improved the operational efficiency of the enterprise and also enhanced the shopping experience for customers. Secondly, service technology. With thirty years of service experience, Tianhong has further elevated its digital capabilities, enhancing the customer experience and gaining support and recognition from the public. Thirdly, digital collaboration. Tianhong collaborated with Tencent in 2018 to explore innovation in the physical retail industry through big data, digitization, and intelligence, promoting the application of technology in the retail industry. Fourth, technical output. Tianhong established its subsidiary 'Lingzhi Numerical Technology' in 2019 to export its digital technology, which has led to certain development and progress in the entire industry. Fifth, open up the digital ecosystem. Tianhong Group has achieved a qualitative leap in sales data during the epidemic period by opening up its digital ecosystem and sharing its own traffic in various fields with many brand merchants, enhancing its digital management capabilities. These specific manifestations have enabled Tianhong Corporation to go further and further on the path of digital transformation.

2.2.3 Improve the Ability to Integrate Resources

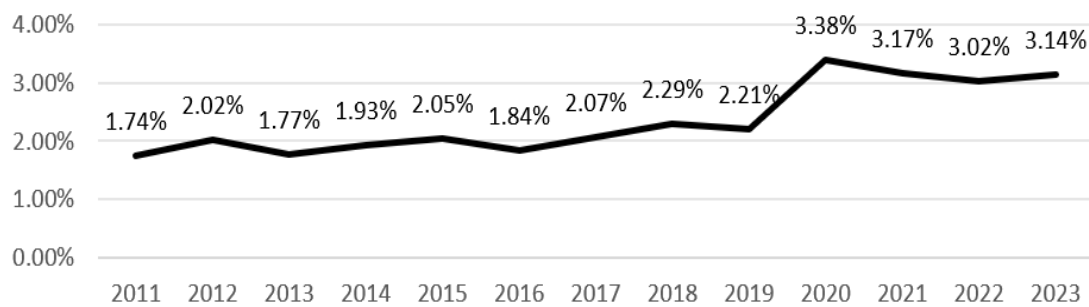
Tianhong's digital transformation is also reflected in the improvement of its ability to integrate resources. Firstly, it promotes the integration of online and offline sales, actively integrates online and offline resources, achieves comprehensive integration of products, services, and personnel, improves the utilization rate of enterprise resources, and enhances the shopping experience of customers. Secondly, Tianhong has also strengthened the construction of logistics and distribution. By building a main warehouse and regional warehouses, it optimizes the logistics and distribution network, improves the speed and efficiency of product distribution, and also reduces logistics costs. Once again, Tianhong places great emphasis on talent cultivation and introduction in the later stage. By creating specialized teams and enhancing employees' digital abilities, it provides certain support for resource integration (Bongsug et al., 2014). Finally, Tianhong attaches great importance to establishing cooperative relationships and has established strategic partnerships with partner companies to maximize profits through

resource sharing and mutual achievement. By enhancing its ability to integrate resources, Tianhong has strengthened its core competitiveness and also enabled the company to grow stronger.

3. The Impact of Digital Transformation on the Financial Performance of Tianhong Corporation

3.1 Cost Efficiency Analysis

For cost control, Tianhong Co., Ltd. mainly optimizes its supply chain through digital transformation to achieve an integrated online and offline business model, saving costs in cost negotiation and other aspects. At the same time, it also uses digital technology to monitor the rise and fall of product costs, and more efficiently understand the specific expenditure situation of enterprise costs. The specific analysis is as follows:

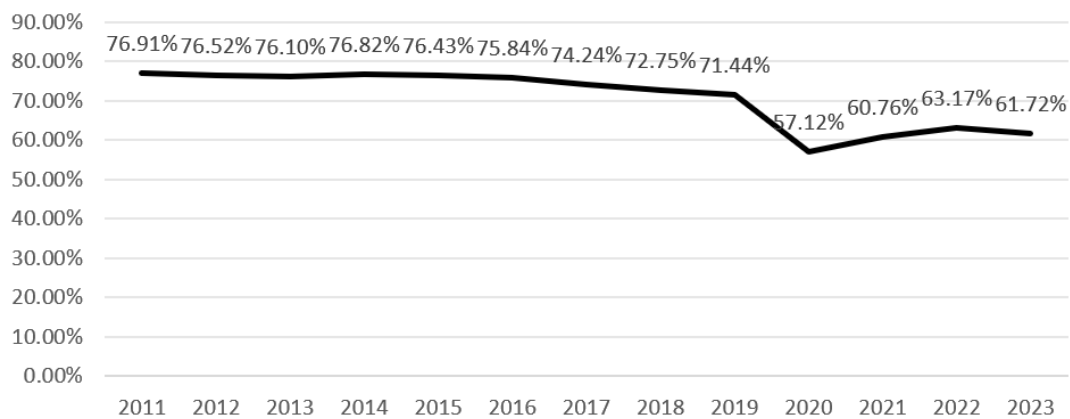


— Management Expense Ratio

Figure 1. Management expense ratio of Tianhong Corporation

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

The management expense ratio is used to measure the percentage of administrative expenses in a company’s operating revenue. From Figure 1, it can be seen that from 2011 to 2019, the management expense ratio of the enterprise did not change significantly, fluctuating around 2%. However, there was a decrease in both 2013 and 2016, as Tianhong Group began its formal digital transformation in 2013 and began a combination of online and offline sales in 2016. Digital transformation saved a lot of manpower and material resources, which allowed management expenses to be controlled to a certain extent. Starting from 2020, the management expense ratio has risen to around 3%, which may be due to the busy online business during this period leading to some negligence of the management department in organizing and managing the business activities of the enterprise. Alternatively, the digital transformation of the enterprise has recruited and introduced a large number of talents, which has increased the salary level of employees. At the same time, training employees in digital technology will also incur certain costs.



— Operating cost ratio

Figure 2. Operating cost ratio of Tianhong Corporation

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

The operating cost ratio is an important financial indicator that measures the operating costs that a company needs to incur per unit of revenue during a certain period of time. From Figure 2, it can be seen that before 2016, the operating cost ratio of the enterprise remained stable at around 76%. However, from 2016 onwards, the operating cost ratio of the enterprise began to decline and reached a minimum value of 57.12% in 2020. This is because since 2016, Tianhong Group has implemented a smart retail strategy and has basically completed the construction of online channels. It has also launched the use of mobile self-service payment and other functions, resulting in a significant decrease in operating costs. However, in 2020, due to the impact of the epidemic, physical retail was difficult to develop, and online retail became the main sales method, reducing the operating costs of a large number of stores and lowering cost expenses. From 2021 to 2023, the changes have remained relatively stable, at around 60%, indicating that the strategy of smart retail has played a certain positive role.

3.2 Profitability Analysis

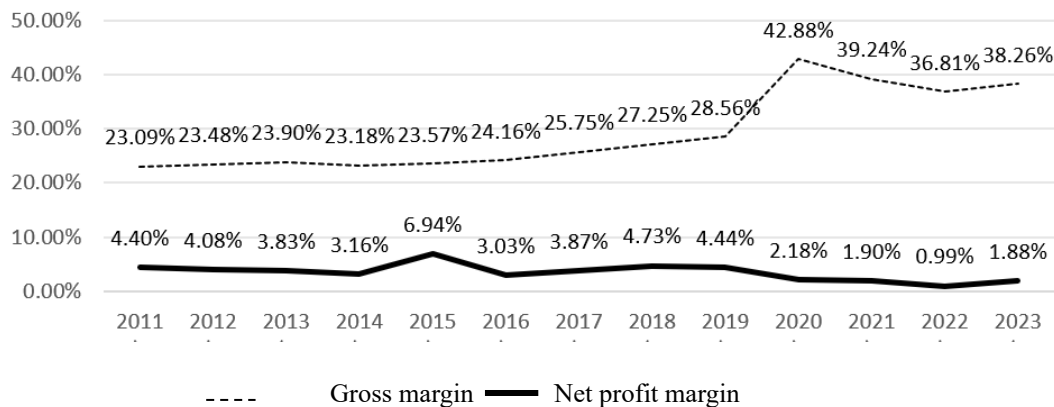


Figure 3. Analysis of gross profit margin and net profit margin of Tianhong Stock

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

According to the analysis of gross profit margin and net profit margin from 2011 to 2023, it can be seen from Figure 3 that before the transformation in 2013, the gross profit margin and net profit margin of Hong Stock had not changed much. However, when the digital transformation began in 2013, the gross profit margin of the enterprise had been on the rise, and it increased significantly from 2016 to 2020, reaching a maximum value of 42.88%, which is about twice as much as before the digital transformation. This is because the enterprise had already formed a technical team in 2016, and at this time, the digital transformation of the enterprise was relatively complete. In 2020, due to the factors of the epidemic, a good online sales platform was created for the enterprise. The enterprise began to actively market and promote the comprehensive development of online sales. Through big data analysis, it provided suitable and high-quality products for consumers, making it possible for the enterprise to... Customers can also experience the thrill of shopping while under home quarantine, until 2023, the gross profit margin of the enterprise has remained above 35%, indicating that the effectiveness of digital transformation is very good. However, at the same time, the net profit margin of enterprises decreased in 2013, mainly because it was the early stage of digital transformation, and enterprises spent a lot of money exploring the path of digital transformation. Moreover, consumers did not have much understanding and trust in online sales at that time, resulting in low sales volume and a natural decline in profit margins. In 2015, the net profit margin was as high as 6.94%, which was due to the transfer of 100% equity of Shenzhen Shencheng Property Management Co., Ltd. held by the company to China Merchants Securities Asset Management Co., Ltd. in 2015, resulting in a certain profit. In recent years, especially in 2022, the net profit of enterprises has been at a historical low of 0.99%. It is understood that during this period, the investment in digital research and development of enterprises has increased, and there have been huge personnel changes, resulting in insufficient business performance.

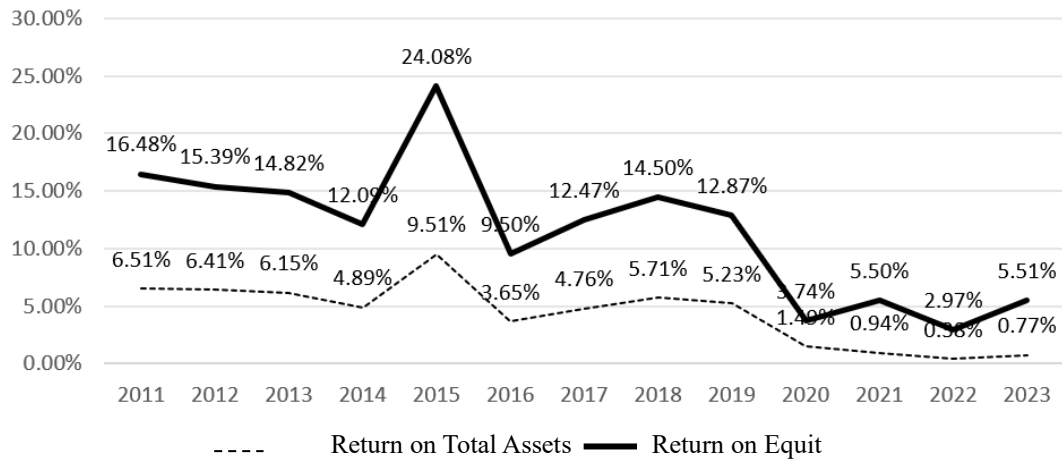


Figure 4. Return on Total Assets and Return on Equity of Tianhong Corporation

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

Figure 4 reflects the changes in the total asset return rate and net asset return rate of Tianhong Stock from 2011 to 2023. The return on total assets is the ratio of net profit margin to the average total assets of a company, which can reflect a company's market competitiveness and growth ability. Return on equity is the ratio of net profit to average shareholder equity, which measures the level of return on shareholder equity. Both of these indicators can reflect a company's profitability. From Figure 4, it can be seen that before digital transformation, the total asset return rate and net asset return rate of enterprises showed a significant downward trend, making it difficult for traditional sales models to survive in the market. During the period from 2011 to 2019, it tended to develop steadily. In 2015, due to the transfer of all equity of its subsidiaries, Tianhong Corporation's total asset return rate and net asset return rate rapidly increased. However, since the outbreak of the pandemic in 2020, there has been a downward trend, largely due to the impact of the pandemic. At this time, similar phenomena have also emerged among companies in the same industry.

3.3 Operational Capability Analysis

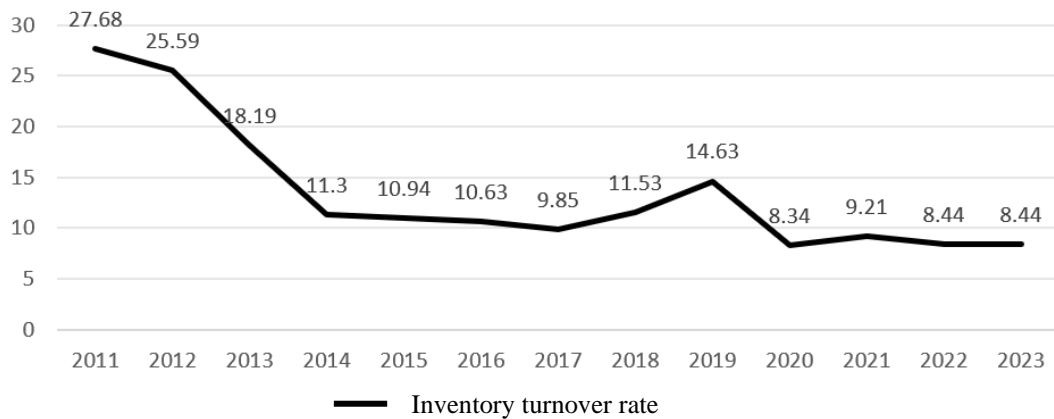


Figure 5. Inventory turnover rate of Tianhong Co., Ltd

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

Inventory turnover rate refers to the ratio of the cost of goods sold to the average inventory balance of an enterprise over a certain period of time. It can reflect the liquidity of inventory and whether the proportion of inventory funds is reasonable. The higher the turnover rate, the shorter the inventory realization time and the higher the operational efficiency of the enterprise. From Figure 5, it can be seen that the average inventory turnover rate of the enterprise before digital transformation from 2011 to 2012 was about 28.32, and it has been showing a downward trend. From 2013 to 2017, the inventory turnover rate still decreased due to the insignificant effect of digital transformation in the early stage. However, from 2017 to 2019, the inventory turnover rate showed an upward trend. This is because in 2017, Tianhong Co., Ltd. achieved omni channel transformation and established three

major business strategies of digitization, experiential, and supply chain. After 2020, the inventory turnover rate tended to stabilize, and overall, digital transformation still played a certain role, but it was not significant for the overall operational efficiency of the enterprise.

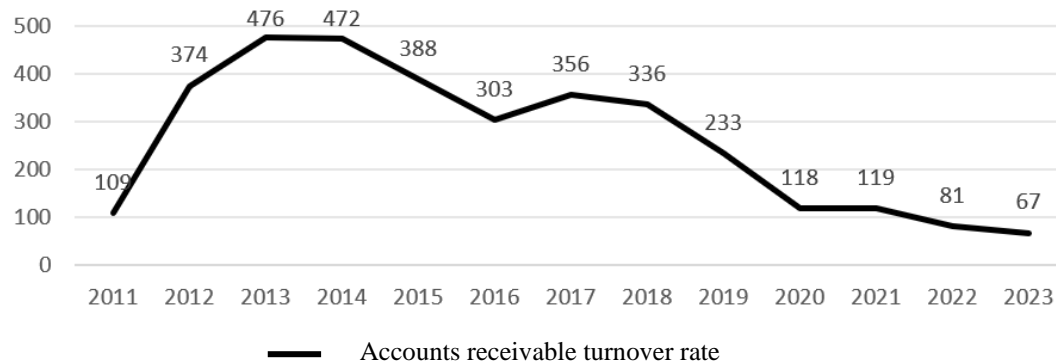


Figure 6. Accounts receivable turnover rate of Tianhong Co., Ltd

Data source: Annual report of Oriental Fortune Tianhong Co., Ltd

As shown in Figure 6, the accounts receivable turnover rate of Tianhong Co., Ltd. had been on the rise before the digital transformation in 2013. However, from 2013 to 2015, its inventory turnover rate began to decline during the digital transformation period. This is because in the early stage of digital transformation, enterprises need to invest heavily in building digital systems, optimizing supply chains, etc. These investments may not be immediately reflected in the collection of accounts receivable in the short term, resulting in a decrease in turnover rate. But since 2016, the accounts receivable turnover rate has increased, thanks to the construction of digital platforms and the use of big data for precise marketing, which enables consumers to find suitable products in a short period of time. Online services and payments have also improved transaction efficiency, accelerated enterprise capital turnover, and enhanced short-term debt repayment ability. After 2018, the accounts receivable turnover rate of enterprises has been on a downward trend. This is due to the impact of the epidemic and the rise of online shopping, which has led to an increase in online sales orders. Online sales require customers to automatically confirm receipt or the system to automatically confirm receipt before accounts receivable can be displayed as received, resulting in an increase in accounts receivable turnover rate. Based on the fact that Tianhong belongs to a commercial supermarket, the introduction of new business models, such as adding prepaid membership and point redemption services, will prolong the collection period of accounts receivable and reduce turnover. This does not mean that digital transformation has a restraining effect on Tianhong's operational efficiency, because the higher the accounts receivable turnover rate, the better. An excessively high turnover rate indicates that the company's credit policies and payment conditions are too strict, which can actually inhibit the expansion of sales volume, especially when the cost of such restrictions is greater than the cost of credit sales, and may also affect the company's profitability.

4. Conclusion and Suggestions

4.1 Research Conclusion

With the rapid development of big data, Internet and other technologies, digitalization has gradually been implemented into people's living habits, bringing great convenience to people's access to information, shopping, transportation and so on. Of course, traditional brick and mortar retail enterprises are also affected to some extent. The original business model requires greater costs, and face-to-face shopping methods are also difficult for enterprises to continue operating due to the impact of the epidemic. Therefore, enterprises must adapt to the development of the times, find opportunities, and find entry and exit through digital transformation. This article takes Tianhong Corporation as an example to explore the impact of digital transformation on financial performance by analyzing its cost efficiency and profitability. The following conclusions are drawn:

Firstly, digital transformation can help reduce the operating costs of enterprises

Tianhong Corporation has integrated digitalization into various aspects such as procurement, sales, and management through smart retail, saving a lot of bargaining costs. Simultaneously using big data to manage various expenses will be more efficient and reduce certain labor costs. Digitization enables enterprises to collect and analyze large amounts of data, helping them make more accurate market predictions and decisions, reduce

inventory costs, and mitigate operational risks. Overall, digital transformation can achieve refined internal management and personalized external services, thereby reducing operating costs, minimizing unnecessary resource waste, and enhancing competitiveness in all aspects.

Secondly, digital transformation can enhance the profitability of enterprises

From a long-term strategic perspective, the digital transformation initiated by Tianhong Corporation since 2010 has laid a solid foundation for the company's sustained growth. The company continuously optimizes its online and offline integrated sales network, expands consumer choices, and creates multi-dimensional network platforms including Tianhong WeChat, Weipin, Honglingjin, etc. It has also expanded to multiple formats such as department stores, supermarkets, and convenience stores in the physical field, arousing the shopping desire of a large number of consumers. Especially in the early stage of the outbreak of the epidemic in 2020, sales orders continued to rise, and the company's gross profit margin reached as high as 42.88%, surpassing most retail enterprises at that time and improving the company's profitability. At the same time, the business has also ventured into multiple fields such as maternal and child care, finance, and logistics, and has established a comprehensive management system. These measures not only expand the scale of the enterprise, increase market share, but also enhance the company's value. After in-depth analysis of the financial data and comprehensive performance of Tianhong Corporation, it shows the firm determination of the enterprise in the process of transformation. Despite facing financial challenges in the early stages, Tianhong Corporation remains steadfast in promoting digital transformation, successfully occupying the consumer market, and achieving significant results in exploration. In addition, the company has increased its investment in the research and development of intelligent products, achieving a dual increase in scale and market share, and promoting the steady development of the enterprise.

Thirdly, the improvement of operational capabilities through digital transformation is not significant

Through digital transformation, Tianhong Corporation has broken the previous data isolation state, and years of transformation efforts have enabled the company to successfully integrate business data systems, achieve full chain digitization, and explore the collaborative value between data, thereby improving certain operational efficiency. Tianhong Corporation is not only promoting digital reform in the sales field, but also committed to integrating various business processes after digitization, from retail to branding, supply, logistics, production and other aspects, promoting intelligent production, transparent channels and visualized logistics, and improving the efficiency of the supply chain through full chain digitization. In addition, Tianhong Corporation has built an online procurement platform for supermarkets, allowing suppliers to directly connect with company data. In the traditional mode, suppliers face problems such as low efficiency and cumbersome communication and inspection when providing goods. The launch of the procurement platform enables suppliers to quickly connect with the company and also improves operational efficiency to a certain extent. Tianhong Corporation has integrated the practice of digital transformation into every aspect of supply chain management, improving operational efficiency and enhancing financial performance. However, these effects are not particularly significant. According to the analysis of inventory turnover and accounts receivable turnover before and after Tianhong Group's digital transformation, it can be seen that their inventory turnover and accounts receivable turnover have not improved much, and have even decreased. This is due to a system problem in the online sales model, which requires customers to automatically confirm receipt or the system to automatically confirm receipt before accounts receivable can be displayed as received, resulting in an increase in accounts receivable turnover. Moreover, Tianhong Corporation has introduced new business models, such as adding prepaid membership and point redemption services, which will prolong the collection period of accounts receivable and reduce turnover. However, in the process of embracing the era of e-commerce, Tianhong Corporation has closely grasped the pulse of the times, been brave in exploration, and constantly innovated. This kind of adaptation and adjustment is a challenge that all enterprises must experience during the transformation period. The temporary suspension during this period does not mean the failure of the transformation efforts. In fact, after a period of adjustment, Tianhong Corporation's counter trend growth is a reflection of its digital transformation achievements.

4.2 Experience Enlightenment

Overall, Tianhong Corporation's digital transformation has been relatively successful, as it has improved the company's financial performance and provided some reference value for other retail enterprises. Therefore, in the face of the constantly changing times, retail enterprises can help their long-term development through digital transformation. However, enterprises cannot blindly imitate and must find the most suitable development method for their own enterprises to develop specific digital transformation plans. Retail enterprises of different scales can adopt different digital implementation strategies based on their own conditions. Medium to large enterprises with certain resources can establish their own technical teams to develop digital solutions that are in line with their

corporate strategy and culture. As for growing small retailers, they may consider collaborating with external professional retail digital service providers such as Tencent, Lingzhi Digital Technology, Alibaba, etc. to customize transformation plans. Digital transformation can be achieved through the following methods:

Firstly, Expand traditional sales channels

A large part of the reason why traditional retail enterprises find it difficult to develop is due to their extremely low market share, which makes it difficult to sell goods and make ends meet. Therefore, the first step is to expand their existing market share, which requires expanding sales channels. For example, developing an online sales model requires a certain cost because building an online sales platform requires a certain marketing strategy. Therefore, companies also need to measure the cost range they can afford. They can try online sales on a platform first, and then refine specific sales plans based on business results.

Secondly, introduce digital talents

Research shows that under the challenge of the Internet, the traditional retail industry needs to make continuous progress to enhance its competitiveness. The essence of competition lies in talent, and it is crucial to enhance innovation capabilities and adopt innovative business models. Digital transformation is also closely related to the introduction of digital talents, as the integration of most operational processes requires advanced digital technology, which requires relevant personnel to operate this process. Therefore, enterprises need to spend a certain amount of funds to introduce and cultivate talents. When undergoing digital transformation, enterprises should recruit professional talents with comprehensive abilities. The company establishes a team of high-quality talents in key areas to ensure the effective operation of digital transformation work.

Thirdly, establish a suitable supply chain system

The success of Tianhong Corporation's digital transformation is attributed to its finding a suitable supply chain system, which maximizes the utilization of resources and profits through the control and integration of various links. You can first determine the supply chain goals and needs of the enterprise, including cost control, response speed, quality control, and service level, and analyze the weak CE management software (such as SPA, ERP, etc.) of the existing supply chain to ensure that the selected platform can support the entire supply chain process, from procurement sourcing to delivery settlement. Integrating internal and external data resources, achieving information sharing and process collaboration, standardizing and simplifying processes can reduce unnecessary steps and tedious operations. Strengthen communication and collaboration with suppliers through online collaboration platforms to achieve transparency in the supply chain. Reuse big data analysis and IoT technology to monitor the status of the supply chain in real-time and improve its visibility. Explore the application of new technologies such as artificial intelligence and blockchain in supply chain management to maintain competitiveness.

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