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Research on the Impact and Strategy of Digitalisation on Apparel Industry of China

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Abstract: With the development of the digital economy and technology, the digital transformation of the clothing industry has become an inevitable trend for the industry to keep up with the tide of the times. As a major producer and exporter of clothing in China, this article studies the impact and strategic recommendations of digital transformation on the Chinese clothing industry, with the aim of helping the industry smoothly undergo digital transformation and achieve healthy and green development while creating greater value. This article refers to the example of digital transformation of Yida Group, one of the leaders in the Chinese clothing industry, and identifies three important issues that the Chinese clothing industry should pay attention to - clarifying the industry's own foundation for transformation, strategic issues, and data privacy and security issues. And provide answers to three important questions by referring to a large number of literature and examples, as well as conducting a SWOT analysis on the Chinese clothing industry. In summary, strengthening the integration of digital technology and clothing enterprises is related to the strategic transformation of the industry's future development, and clarifying the impact of digital transformation on the industry and the transformation measures that enterprises should take is the key to China's clothing industry's digital transformation.

Keywords: Digitization, Clothing Industry, Strategy, Impact, Transformation.

1. Introduction

1.1. Research Background

With the rapid development of information technology, digitization has become an important force driving global industrial transformation. According to the "Research Report on the Development of China's Digital Economy Industry (2023)", the proportion of new digital industries has reached 22.4%, and industries with high levels of digitalization continue to play an increasingly important role in driving the Chinese economy. Between 2012 and 2022, the proportion of highly digitized industries dominated by productive service industries such as finance and scientific research increased from 16.8% to 22.4%, with a relative increase of 10.9% in driving force [1]. This indicates that with the continuous development and application of digital technology, the proportion of highly digitized industries in the Chinese economy is gradually increasing, and their contribution to economic growth is also constantly improving. Digital transformation is one of the main driving forces of the digital

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economy. Therefore, conducting digital transformation is an inevitable trend for enterprises to keep up with the tide of the times [2]. As a well-established industry in China, the clothing industry is also influenced by digitalization. As one of the world's largest producers and consumers of clothing, China's clothing industry is facing unprecedented opportunities and challenges. The widespread application of digital technology has not only greatly changed various aspects of the clothing industry, such as production, design, and sales, but also brought consumers a new shopping experience. Digital technology is bringing many new possibilities to the traditional clothing industry. Exploring the impact and strategic research of digitalization on China's clothing industry is not only related to the future development direction of the clothing industry but also the key to promoting industrial transformation and upgrading and enhancing enterprise competitiveness. Firstly, from a business perspective, the widespread application of digital technology in the clothing industry is beneficial not only for enterprises to quickly respond to market changes and meet the diverse needs of consumers but also for enhancing their brand influence and market competitiveness. Secondly, from the perspective of social value, the promotion of digital technology is not only of great significance for promoting the sustainable development of China's clothing industry but also for promoting the integration and innovation of the traditional clothing industry and emerging digital technology industry, making contributions to China's socio-economic development.

1.2. Literature Review

Xu Changjie believes that accelerating the integration of the clothing industry with digital technology and building a smart industry chain and supply chain are inevitable choices for creating new development models and competitive advantages in the digital economy era and are strategic changes that affect the future development of enterprises [3]. This viewpoint leads this article to recognize the importance of digital transformation in the clothing industry. Liu Le believes that with the integration of digital technology and the clothing customization industry, many emerging digital technologies have emerged to empower clothing customization design and production practices, but at the same time, problems such as poor compatibility between technology and design have also arisen. This viewpoint has inspired a more comprehensive study of the impact and strategies of digital transformation in the clothing industry in this article. Bai Rui believes that it is necessary to actively promote the digital transformation of enterprises, strengthen their digital thinking, improve employees' digital skills and data management capabilities, and guide enterprises to improve overall operational efficiency. This viewpoint has inspired the study of strategies for enterprises to cope with digital transformation in this article.

1.3. Research Gap

Regarding the research on digitalization in the clothing industry, most scholars have studied the trends of digital clothing design and development, the full process digital application of the clothing industry, the challenges and opportunities of digitalization for the clothing industry, and solutions. Few scholars have studied the impact of digital transformation on the clothing industry and what measures clothing enterprises should take in the face of industry digital transformation.

1.4. Research Framework

Firstly, this article will select a real case for description and analysis in order to understand the current development status and basic situation of digital transformation in the Chinese clothing industry through each case. Secondly, this article will provide a more detailed introduction to this case, studying the impact of digital technology on this case, analyzing the response strategies for digital transformation in this case, and identifying the existing problems and their solutions. Finally, future

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development recommendations will be provided. Then, based on the case study and the current development status of the Chinese clothing industry, this article will propose feasible strategies for various aspects of the clothing industry, including production, design, and sales, to help enterprises undergo digital transformation. Finally, this article will summarize the impact and strategic research of digitalization on the Chinese clothing industry, analyze the limitations of this study, and provide suggestions for future research on the digital transformation of the clothing industry.

2. Case Description

This article will use Yida Group, one of the leaders in the Chinese clothing industry, as a real case for research and analysis in order to understand the current development status of digital transformation in the Chinese clothing industry, the advantages and foundations of digital transformation, the difficulties encountered in digital transformation, and the strategies formulated by the Chinese clothing industry to promote the digital transformation of traditional industries. Established in 1978, Yida Group is a vertically integrated cotton clothing conglomerate. Their business areas include cotton planting, spinning, weaving, dyeing and finishing, clothing manufacturing, accessories, packaging, and retail. It provides one-stop shirt services and is currently the world's largest manufacturer and exporter of pure cotton shirts. The group supplies over 100 million shirts annually to world-renowned fashion brands such as Ralph Lauren, Hugo Boss, Anta, and Muji. In addition, Eslite is committed to the development and maintenance of fashion brands "Pye" and "DETERMINANT" in China. In terms of supply chain operations, Yida has achieved water conservation and energy reduction through continuous investment in technological innovation and lean management. It has taken the lead in developing environmentally friendly washing technology and achieved zero discharge of garment wastewater [4]. As a leading global textile and clothing manufacturer and retailer with its own fashion brand, Eslite Group has a corporate vision of continuously approaching green, environmentally friendly, efficient, intelligent, innovative, and sustainable development. In recent years, it has also actively responded to the industry trend of digital transformation, clearly making digital transformation the core part of its corporate strategy and deeply promoting digital transformation [5]. The digital transformation of Yida Group is a comprehensive, typical, successful, referential, and multi-level practical case that can help this article study the integration of digital technology in various aspects such as raw material planting, clothing design, clothing production, retail, brand promotion, and the Chinese clothing industry. This article will analyze and study the background, motivation, process, strategy, achievements, problems, and future prospects of digital transformation in the Chinese clothing industry based on the case of Eslite Group's digital transformation.

3. Analysis on the Problem

3.1. Yida's Digital Transformation

3.1.1. The Driving Force Behind Yida's Digital Transformation

The driving forces behind Eslite Group's digital transformation are external and internal factors. Internal motivation is, first and foremost, the issue of efficiency improvement and cost control. In order to improve production efficiency, optimize resource allocation, and reduce costs, Yida Group has effectively improved the overall operational efficiency of its production lines by introducing automated and intelligent production systems through digital transformation. Next is the demand for innovation. Eslite Group always adheres to the spirit of innovation, and digital transformation is an important component of its innovation strategy. By introducing new technologies such as big data and artificial intelligence, product innovation and service upgrades have been promoted, meeting the

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diverse needs of the market and consumers. The external drivers are the enormous pressure of market competition, the driving force of technological progress, and the transformation of consumer demand. With the intensification of market competition, Yida needs to. Digital transformation has helped Yida improve its response speed and shorten its lifecycle, thereby better responding to market competition. The continuous emergence of new technologies provides strong technical support for Yida's digital transformation. Yida seized the opportunity of technological progress and improved the efficiency and effectiveness of enterprise operations through digital transformation. With the continuous evolution of consumer shopping habits and preferences, Eslite needs to meet consumers' personalized needs and improve customer satisfaction through digital transformation.

3.1.2. Yida's Digital Transformation Strategy

Firstly, in terms of intelligent manufacturing, Yida has achieved digitalization and intelligence of the production flow process by introducing advanced automation equipment and intelligent systems, greatly improving production efficiency while reducing production costs. The fully intelligent new cotton spinning factory located in Changji, Xinjiang, has 30,000 spindles and is controlled by only 45 employees. It can produce eight shirts per second. Suppose such a large-scale cotton mill is operated in a traditional way. In that case, it usually requires about 150 workers to operate, greatly reducing the cost of shirt production and greatly improving the core competitiveness of the product in the market. Yida also uses visual recognition technology to automatically inspect defects in accessories and fabrics, thereby improving inspection efficiency and accuracy. This automated defect detection method not only avoids the impact of human negligence on product quality and maintains high product standards stably but also greatly improves detection speed, striving for a time advantage in the market for the product. The production line developed by Yida integrates employees and technology. The production line is operated by skilled technicians and is coordinated with robotic arms, visual recognition technology, and Yida's self-developed automation modules. This production line has high production efficiency, stable product quality, low production costs, and strong market competitiveness. Secondly, in terms of supply chain management, Yida has established a digital platform to integrate information and data from various links in the supply chain, achieving the same name and fairy tale of the supply chain, improving response speed, reducing inventory costs, and enhancing the stability and flexibility of the supply chain. Yida actively seeks cooperation with digital technology companies and IoT Solutions, and Yida combines innovative thinking with radio frequency identification technology (RFID) to bring the best IoT solutions to Yida. From factories and warehouses to retail, Yida continuously improves supply chain efficiency while reducing human errors, creating new advantages in the digital economy. In addition, Guilin Yida is committed to building an intelligent and eco-friendly sustainable production workshop - Ten Ru. Shiru has introduced advanced automation equipment and intelligent systems, advanced digital supply chain management technology, and gathered digital technology talents from Yida Group. Adhering to digital innovation, it has integrated digital technology with the traditional clothing industry to achieve the goal of sustainable development. The lifelong learning journey project and management trainee program of Yida focus on improving employees' awareness and ability to apply digital technology, providing strong talent support for Yida's digital transformation. Yida also collaborates with online sales platforms to promote its brand and Shirushi through online platforms and social media in order to increase product sales and promote brand awareness.

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3.2. Problem-Identified Analysis

3.2.1. The Foundation of Digital Transformation in the Clothing Industry

The advantages and disadvantages of digital transformation in the Chinese clothing industry are one of the important issues that need to be addressed in the industry's digital transformation. Firstly, clarifying the advantages and disadvantages of transformation can help clothing companies more accurately determine the direction and focus of digital transformation, thereby formulating more reasonable and effective corporate strategies. Understanding the advantages can help companies better utilize digital means to improve efficiency, and identifying disadvantages can help companies identify and solve potential problems and challenges during the transformation process. At the same time, for the entire industry, clarifying the pros and cons of transformation helps to grasp the industry's development trends, jointly address challenges, and promote the healthy and sustainable development of the industry. Therefore, a deep understanding of the advantages and disadvantages of transformation has profound significance for guiding corporate strategy, optimizing resource allocation, enhancing competitiveness, and promoting industry development.

3.2.2. Strategies for the Clothing Industry in Response to Transformation

How old clothing companies cope with technological changes is the key to whether the Chinese clothing industry can undergo digital transformation. Only by clarifying the direction of transformation and formulating reasonable strategies can enterprises effectively optimize resource allocation and improve resource utilization efficiency. In the process of digital transformation, how can enterprises cope with new problems? For example, with digital transformation, multi-variety, small batch, and fast renovation have become new characteristics of orders. However, the equipment, processes, techniques, and concepts of traditional factories are all suitable for large-scale production, and their flexibility is seriously insufficient [6]. In the wave of technological change, what strategies should companies adopt to build a digital ecosystem? How does this paper introduce and cultivate professional digital technology talents to provide a talent foundation for the digital transformation of enterprises? How can digital technology optimize resource allocation and enhance market competitiveness, injecting new vitality into enterprises? How can digital technology be used for enterprise risk management to avoid potential risks? Only by clarifying the answers to these questions can enterprises better carry out digital transformation.

3.2.3. Data Privacy and Security Issues

With the deepening of digital transformation, enterprises are collecting and storing more sensitive data. Once the data is leaked, it will pose a serious threat to consumer privacy. If a comprehensive data security management system is not established, it may lead to illegal access and abuse of data, affecting the reputation of the enterprise and consumer trust. In terms of data processing and privacy protection, enterprises need to strictly comply with relevant laws and regulations, such as GDPR; otherwise, they will face serious legal risks and penalties. So, how should enterprises balance consumer data privacy and security issues in the process of digital transformation?

4. Suggestions

4.1. SWOT Analysis of Digital Transformation in China's Clothing Industry

This article will use SWOT analysis to study the advantages, disadvantages, opportunities, and risks of digital transformation in the Chinese clothing industry.

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Advantages: From the perspective of the industry, the Chinese clothing industry has mature development, a complete industrial chain, a huge market share, stable market demand, sufficient funds, sound infrastructure, high-quality talents, and other foundations to support the digital transformation of the industry. The digital transformation of China's clothing industry can receive support from policies such as funding subsidies and tax incentives.

Disadvantage: Firstly, the digital transformation of China's clothing industry will face the disadvantage of a dual shortage of technology and talent. In terms of technology, the industry generally faces the challenge of outdated digital equipment and difficulty in rapidly developing technological updates. Moreover, many technologies require high initial investment, which is a very high threshold for many small and medium-sized enterprises. Ensuring the return on investment in technology is also a challenge [7]. In terms of talent, there is a serious shortage of compound talents who have both professional digital technology knowledge and rich experience in the clothing industry, as well as the long cycle and high cost of training from scratch. Secondly, traditional clothing companies often have conservative organizational structures and cultures, lacking the flexibility and innovation to undergo digital transformation quickly.

Opportunity: With the continuous innovation and application of technology, the clothing industry will emerge with more digital solutions and products. These innovations will bring more business opportunities and growth points to enterprises. The growing demand for personalization and customization among consumers has provided a vast market space for the clothing industry. E-commerce online channel: the rise of short video and live broadcast platforms such as TikTok and Kwai has brought new opportunities to the sales channels of China's clothing industry [8]. Enterprises can meet these needs and enhance their market competitiveness through digital transformation.

Threat: Digital technology is rapidly evolving, and enterprises need to constantly follow up and invest in order to maintain their technological leadership. The integration of digital technology will further accelerate the pace of trend change, and if companies cannot respond quickly to changes in consumer demand, they will lose market share.

4.2. Strategy for Digital Transformation of Clothing Enterprises

Strengthen cooperation with digital technology enterprises, upgrade their information systems, and ensure support for large-scale data processing and analysis. Introduce new technologies such as big data and the Internet of Things to provide technical support for digital transformation. By utilizing intelligent manufacturing technology, production automation and intelligence can be achieved, reducing production costs and improving production efficiency and quality. Artificial intelligence technology and 3D printing technology for clothing style design, color matching, etc., can be used to improve design efficiency and creativity. Through digital platforms, suppliers, factories, logistics, and other links can achieve digital collaboration and management and establish a digital supply chain management system to improve collaboration efficiency and flexibility [9]. Utilize e-commerce platforms and social media to diversify sales channels, such as Taobao, Facebook, etc. They are utilizing big data to analyze consumers' shopping habits and preferences, providing personalized products and services, and enhancing customer satisfaction. Strengthen digital skills training for existing employees and actively introduce professional talents with digital skills and management experience. Build a digital ecosystem and data sharing mechanism, establish close cooperative relationships with upstream and downstream enterprises, achieve resource sharing and complementary advantages, and promote data exchange and system operation between upstream and downstream enterprises in the industrial chain. Establish an effective digital transformation evaluation system, regularly collect and analyze feedback, and adjust and optimize transformation strategies in a timely manner. Pay attention to the latest developments and technological trends in the

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industry, continuously innovate in technology and models, and maintain the competitiveness and innovation of the enterprise.

4.3. Strategies for Enterprises to Protect Data Privacy and Security

Enterprises should establish and improve data security management systems, clarify security requirements for various links such as data collection, storage, processing, transmission, and destruction, and develop emergency plans to respond to unexpected events such as data breaches. Data encryption is the foundation for protecting data privacy, and enterprises should adopt advanced encryption technologies and implement strict data access controls to avoid data leakage. Technologies such as differential privacy and federated learning can effectively utilize and analyze data while protecting consumer privacy. When collecting consumer data, enterprises should clearly inform consumers of the purpose of data collection, usage methods, and protection measures and obtain consumers' consent. When collecting consumer data, enterprises should clearly inform consumers of the purpose of data collection, usage methods, and protection measures and obtain consumers' consent. Enterprises need to conduct regular risk assessments to promptly identify and respond to potential data security threats [10]. Enterprises should regularly provide training to employees on data security and privacy protection and establish a sound accountability mechanism. Enterprises need to establish clear cooperation agreements with third parties for data processing or sharing and strictly supervise them to prevent the illegal use of data. Enterprises should regularly evaluate the effectiveness and adaptability of existing security measures and make continuous adjustments and improvements based on the evaluation results.

5. Conclusion

Clarifying the advantages and disadvantages of transformation helps companies to more accurately determine the direction and focus of digital transformation, thereby formulating effective corporate strategies more reasonably. The Chinese clothing industry has developed maturely, with a complete industrial chain, a huge market share, stable market demand, sufficient funds, perfect infrastructure, high-quality talents, and other foundations, as well as policies to support the digital transformation of the industry. The integration of the clothing industry and digital technology will also bring more opportunities and growth points for enterprises. However, the Chinese clothing industry will face a dual shortage of technology and talent, as well as the need to quickly keep up with the short iteration cycle of digital technology. Established clothing companies should adopt strategies such as strengthening cooperation with digital technology enterprises, introducing new technologies, digitizing supply chain management systems, attracting digital technology professionals, employee training, and utilizing online social platforms to enhance brand awareness in response to digital transformation. Enterprises should also establish and improve data security management systems, adopt advanced encryption technologies, and implement strict data access controls to ensure the security of consumer data privacy. In short, enterprises should pay attention to the latest trends and technological developments in the industry, continue to innovate in technology and models, adjust and optimize their transformation strategies in a timely manner, and maintain their competitiveness and innovation.

This article provides a macro analysis of the entire clothing industry in China and focuses on the research of Yida Group, addressing the basic conditions, strategic issues, and data protection problems that Chinese clothing enterprises face in response to digital transformation. The SWOT analysis conducted in this article is helpful for the industry to grasp development trends, jointly address challenges, and promote healthy and sustainable development of the industry. This article provides many constructive suggestions on how Chinese clothing companies can respond to digital

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transformation, which can help companies enhance competitiveness, promote innovative development, optimize supply chain management, expand sales channels, improve user experience, and achieve sustainable development. The research on data privacy and security in this article can help enterprises avoid potential new problems and risks in the process of developing digitalization.

Due to the fact that the data, literature, and specific examples analyzed in this study can be traced back to 2024 and earlier, the data used for analysis and the conclusions related to the data in this study are somewhat limited in terms of time.

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