Design of Haining Home Textile Supply Chain Cloud Service Platform in Era of Intelligent

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Abstract. Based on the opportunity of the era of Smart Logistics, this paper has proposed the development direction to develop the cloud service platform of the home textile industry supply chain by analyzing the development status of Haining home textile industry. Starting from the perspective of new strategy, new format, new model and new opportunities, this paper has proposed the development ideas and design function modules of Haining home textile Supply Chain Cloud Service Platform, which provides the construction ideas for the design of supply chain service platform of home textile industry.

1. Era of Intelligent Logistics has Arrived

1.1. Technology Applications Such as Big Data Artificial Intelligence Open the Era of Technology-driven Smart Logistics

In recent years, thanks to the continuous promotion of industry policies and the maturity of technology, the logistics industry has moved from informationization to smart and intelligence; expert systems, artificial intelligence, simulation, operations research, business intelligence, data mining, robotics and the other technologies have already had the relative mature research results, the artificial intelligence has accelerated the industry's empowerment, a number of international leading technologies such as unmanned warehouses, drones, unmanned vehicles and logistics robots have been tested and applied, 5G technology related facilities have been continuously developed, the modern logistics pace of development from informatization to smarterization will be further accelerated, and the intelligent logistics will enter into an “Upgraded Version”. In 2016, the scale of the smart logistics market has exceeded RMB 200 billion. It is estimated that the domestic smart logistics market will exceed one trillion by 2025.

1.2. Resource & Environment Constraints, Policy-driven, and Green Logistics have Become a New Development Trend

Since the "13th Five-Year Plan", the conditions for the development of modern logistics industry, technical supply, system, and resource & environmental constraints etc. have undergone the major changes, and the resource elements have entered a high-cost stage. The year-on-year increase in the volume of road freight and the over-packaging of goods have placed a heavy burden on the environment. The increasing number of logistics vehicles has further increased the traffic pressure. The transformation of government policy orientation, the gradual improvement of the market management system, and the development of social environmental protection etc. require the modern logistics to develop in a green direction. Zhejiang Province has intensively promoted the “Thousand Villages Demonstration & Ten Thousand Villages Renovation” project, and it has been awarded with...
the “Incentive & Action Award” in the “Earth Guardian Award” by the United Nations in September 2018, which means that the province’s greater environmental protection policy will continue, it will also force the traditional warehousing, transportation and logistics platform enterprises to undergo the fundamental changes to meet the requirements of environmental protection and green, and the inefficient non-green logistics enterprises and logistics methods will be eliminated gradually.

The development trend of the home textile supply chain cloud service platform must conform to the requirements of social development and environmental protection, and develop towards the intensive and green. China Haining Home Textile City, as the most influential domestic textile professional market in China, is also a domestic wholesale market of grade I for home textile decorative fabrics and sofa fabrics. The establishment of Haining Home Textile Supply Chain Cloud Service Platform is the result that has actively adapted to the structural reform of the supply side of the country, which also plays an important role in promoting the transformation of the wholesale & retail market in China Haining Home Textile City and reshaping the vitality of the home textile market.

2. Significance to Develop Haining Home Textile Supply Chain Cloud Service Platform

Optimize the investment environment of Haining City and enhance the competitiveness of Haining City in the Hangzhou Bay Area. Haining has a group of relative standardized and well-operated logistics parks (Wanrui Sanfu Logistics Park and Haining Shuanglian Logistics Park), which support Haining’s urban development and industrial development. There is no established supply chain development base in Haining City currently. The Haining Warp Knitting Supply Chain project of the Wuchan Zhongda Group has not yet been built. The further development of Haining’s industry needs to be supported by a supply chain service platform. Haining manufacturing enterprises rely on local logistics parks or logistics lines to realize the transportation turnover of production materials and products. These manufacturing enterprises need to establish the cooperative relations with upstream and downstream enterprises to reduce costs and increase their competitiveness and form a good industrial development environment urgently. The construction of Haining Home Textile Supply Chain Cloud Service Platform can gather the industrial chain resources, improve the relationship between upstream and downstream enterprises, remove the development of redundant industries, build the industrial development base with Haining characteristics, optimize the investment environment of Haining City, and enhance the Haining City urban competitiveness around the Hangzhou Bay Area.

3. Policy Environment of Haining Home Textile Supply Chain Cloud Service Platform

In June 2017, the People's Government of Zhejiang Province has launched the “Zhejiang Province Comprehensive Reform & Promotion Action Plan of Traditional Manufacturing (2017-2020)”, aiming at the textile industry to promote the development of textile manufacturing to the high-end, intelligent and green gathering direction. Strengthen the development and application of waterless or no water dyeing, high-speed and low-cost digital printing technology and functional fabric finishing technology, focus on the development of high-quality textile fabrics, high-end silk and home textile products, expand the industrial textile applications, promote the large-scale personalization of home textile industry, accelerate the development and application of digital and intelligent textile equipment, and promote the transformation of the development mode of the home textile industry.

In order to implement the State Council's "Guiding Opinions to Promote Actively Supply Chain Innovation & Application (G.B.F. [2017] No. 84)", Zhejiang Province has compiled the "Zhejiang Modern Supply Chain Development Action Plan (2018-2022)", focus on the development of intelligent manufacturing supply chain, smart distribution supply chain, green supply chain, and global supply chain, etc., focus on the cultivation & development of leading enterprises, improve the supply chain technology support system, and develop the supply chain finance actively and steadily. In order to support the development of the supply chain fully, the Action Plan has proposed the corresponding policies, talent introduction, development environment and the other safety measures, which can promote the development of professional industry supply chains in the province.

The Xucun Town Government has formulated Policies for Xucun Town to Accelerate Economic Transformation & Development, which has given Haining's home textile industry and Haining home textile enterprises a large number of supports to encourage the implementation of brand strategy and
the participation in domestic & international exhibitions, and implement the patent strategies etc.

The implementation of the “Two-Complete” action in Xucun Town has gradually banned the illegal buildings and standardized the development of the home textile industry. We will comprehensively rectify the "low-small-scattering" and "high-risk-contaminating" enterprises, take the initiative to link Hangzhou East Intelligent Manufacturing Large Corridor, accelerate the upgrading of the home textile industry, and focus on introducing a number of new energy and high-end equipment manufacturing projects. The quality and efficiency of industrial development will be significantly improved, and the industrial structure will be further improved, and the industrial and development level will be comprehensively improved.

Haining Home Textile City Supply Chain Cloud Service Platform aims to integrate the upstream and downstream resources of the home textile industry, reduce the operating costs of production and processing enterprises, ensure the stable and sustainable financial security of the enterprise, guide the development of the production process to green and low carbon, increase the competitiveness of the industry, and improve Customer satisfaction. And the project meets the requirements of Zhejiang Province for the transformation of the manufacturing industry to promote the development of the industry supply chain.

4. Development Direction of Haining Home Textile Supply Chain Cloud Service Platform

4.1. New Strategy
Based on the industrial upgrading opportunities surrounding the Hangzhou Bay Area and of G60 Science & Innovation Corridor. Haining City is located in the middle passage of Hangzhou and Shanghai in the G60 Science & Innovation Corridor. It can undertake the industrial transfer of Shanghai and Hangzhou. Haining City is also actively upgrading the traditional textile industry, which will provide the new development opportunities for the enterprises in the textile industry chain.

4.2. New Mode
The Haining integrating strategy with Hangzhou and Shanghai has enabled the home textile industry to meet the new market opportunities. With the further integration of Haining and Hangzhou, it is conducive to expand the sales model of B2C in the local textile industry, improve the financing environment of traditional manufacturing industries such as home textiles, and undertake the outflow logistics resources of Hangzhou. Based on the huge consumer market in Hangzhou, the daily consumer goods distribution projects have certain market opportunities.

4.3. New Format
The rapid development of intelligent logistics brings the new space. In terms of intelligent work technology, the warehouse technology such as auto-stereoscopic shelves, unmanned robots, and cargo identification can reduce the error rate of cargo sorting and improve the efficiency of cargo management. In the home textile industry, 3D printing and online 3D model production can reduce the production cycle of trial samples and communication time with customers, reducing the product production cycle.

4.4. New Opportunities
The new retail era has put the new demands on logistics companies. The new retail requires “Online Drive” and “Channel Integration”, a more efficient modern supply chain organization and logistics distribution model, and it requires the logistics service providers to have a clearer division of labor and close collaboration.

5. Development and Design of Haining Home Textile Supply Chain Cloud Service Platform

5.1. Development Ideas
Establish e-commerce platform, carry out e-commerce logistics, establish online sales channels, and promote online & offline interaction of home textile sales channels to increase customer stickiness. In
5.2. Design Function Module

The home textile supply chain cloud service platform is an integrated service platform that guides and supports the intelligent upgrade and transformation of the regional home textile industry. It is the main window for the base to display smarterization and intelligence, and it is the core and brain of the base. The platform takes the industrial agglomeration and innovating development as the first driving force, the next generation Internet technology and infrastructure as basement, and the supplement for the lack of element resources in the transformation and upgrading of regional textile industry and the rapid development of modern logistics as handle; it guides and cultivates the rapid convergence of R&D, design, information, finance, payment, talent and the other high-end service resource elements, and integrates the new technologies such as Internet of Things, big data, cloud computing, and blockchain to provide supply chain integration services and data-driven goals for intelligent manufacturing. The international renowned and domestic leading home textile supply chain cloud service platform supported by the development of smart logistics base management service platform, home textile industry big data service platform and intelligent e-commerce transaction platform etc is constructed.

The intelligent business center is the crowd flow, business flow, information flow and capital flow gathering area of the entire supply chain cloud service platform. It is the base intelligent management service center and the home textile enterprise headquarters base. And it is the main window for the external image display of the supply chain cloud service platform.

As the main support of the home textile supply chain cloud service platform, the intelligent business center builds the intelligent buildings through the application of professional design and modern technology, gathers the upstream and downstream affiliated enterprises in the home textile industry chain and forms a high-end business center integrated with R&D, design, information, finance, payment, talents and the other functions.

The collection & distribution center is a demonstration application center for offline warehousing, classification & distribution and circulation & production of intelligent e-commerce trading platform. The collection & distribution center applies fully the supply chain management idea, which takes the intelligent warehouse-integrated logistics service system as the development support, the supply chain financial service as the promoter, and the support of the home textile raw material high efficient procurement, collection, classification and distribution as the core, and provides high efficient, Intelligent, and low-cost workplaces for logistics services such as collection, transfer, storage, sorting, classification, and distribution of goods.

The Smart Alliance Consignment Center is the transformation and upgrading zone of the original consignment market, which is the main place for the base to carry out the basic logistics transportation, warehousing and distributing operations. Under the background of Internet thinking, big data application and intelligent technology products, based on the concept of coordinated development of modern logistics resources, based on the needs of regional traditional logistics transformation and upgrading, the construction is based on standard logistics business sites, it is a smart consignment center that integrates freight transactions, transportation, joint distribution and vehicle services, which is supported by the intelligent logistics information technology.

The Express Center is the main place for regional express delivery enterprises to operate centrally and it is an important part of the base transportation and distribution service system. Based on the market development base of the regional fast-growing express business, it takes the actual needs of regional express delivery enterprises for centralized office and business development as an opportunity, the standardized and intelligent warehousing facilities as basement, and the information technology as a means to create the regional intelligent express collection & distribution center integrated with the efficient loading & unloading, sorting goods, distribution & delivery, order processing and other functions, which provides the service to Xucun and radiate to the surrounding
counties and districts. The Sanchan Service Center is the supporting service block of the base. It is a place to provide clothing, food, accommodation, travel and other recreational activities for the working personnel of base.

Serve for the real needs of business, communication and life of enterprises and businesses in the base, it takes the design concept of “green, ecology, interconnection and co-existence” to create the green, ecological and intelligent service center integrated with the modern business, commercial exchange, leisure & entertainment, catering & accommodation and the other functions with complete facilities, convenient living and perfect service, and it has become an important window for the base to display the style culture.

5.3. The Information Platform

The information platform planning can be summarized as "124 Project" that is planned to build "a set of facility, two major platforms, and four systems.”

“A set of facility” refers to the platform (network) infrastructure, using IPV6 10 Gigabit intelligent routing exchange;

“Two major platforms” refers to the logistics public information platform and electronic transaction settlement platform;

“Four systems” refers to the multimedia interactive information distribution systems, big data analysis systems, transaction settlement systems and credit management systems.

The Intelligent Logistics Park is an industrial cluster integrating knowledge economy, scientific management and sustainable development; it is a logistics park supported by high-tech applications, high-tech enterprises and high-quality talents; and it is a logistics park connected with modern market economy and international development. The overall architecture of intelligent construction includes: A new generation of information infrastructure, an intensive shared information resource utilization system, an intelligent application system, an intelligent park security system, and an intelligent park intelligent management system.

The information platform is deployed in the SaaS mode, integrating the open information technology, and embedding the 4G wireless networks and multi-function work terminals.

After the logistics data is aggregated and processed by the platform, it can be interconnected with the data exchange center of the national transportation logistics to realize the electronic exchange of
goods and the electronic transmission of logistics documents and logistics resource allocation across regions, which reduces the waste of transportation space, cost and time.

![Intelligent Platform Application Service](image)

**Figure 2.** Intelligent Platform Application Service

6. **Acknowledgement**
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