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Research on the Path of Integration between Logistics and Manufacturing in Haikou Driven by Big Data

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Abstract: With the constant changes of the times, China's science and technology have entered a period of rapid development. At the same time, the economic structure is also changing with the changes of the times, and the original Haikou logistics industry in the process is also facing new impacts and challenges. And related enterprises want to stand out in the fierce market competition, we must optimize and upgrade the current industry development situation, promote the integrated development of Haikou logistics and manufacturing industry, to constantly promote the innovative application of digital technology in the logistics industry and manufacturing industry, the formation of a multi-force economic development model. This paper mainly starts with the development status of Haikou logistics, analyzes the importance of the integration of Haikou logistics and manufacturing industry under the background of big data drive, and makes an in-depth discussion on the path of the integration of Haikou logistics and manufacturing industry under the drive of big data, hoping to contribute new strength to the development of social economy.

Keywords: Big data; Haikou logistics; Manufacturing industry; Convergence; Paths

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1. Introduction

From the perspective of big data, manufacturing and producer services are important contents of the currently developed countries to achieve two-wheel drive and integrated innovation. The logistics industry is one of the important industries of the producer service industry, and Haikou logistics can promote the further development of the manufacturing industry to a certain extent. Therefore, in the current process of new economic development, it is very important to study the integrated development path of Haikou logistics and manufacturing industry. From the perspective of the synergistic agglomeration of the two, the collaborative agglomeration development of the manufacturing industry and Haikou logistics industry is studied. To optimize the industrial structure and promote the coordinated development of the regional economy from the aspects of transforming the growth power of the manufacturing industry and realizing the dual-wheel drive, to provide stronger support for the development of social economy.

2. Haikou logistics development status

With the constant change of social structure and the transformation and upgrading of economic structure, Haikou logistics industry has made remarkable achievements in infrastructure construction. On the one hand, the warehouse facilities, logistics parks, and sorting centers needed for modern development have been built and perfected, which has promoted the rapid development of the logistics industry [1]. At the same time, with the support of various transportation networks such as road, railway, water, and air, the rapid and efficient distribution of goods has been realized. On the other hand, driven by big data technology, Haikou logistics industry has also integrated new technologies to analyze and optimize the logistics workflow, collect and analyze historical data to improve operational efficiency, predict the future logistics needs of enterprises, to rationally arrange transport capacity, and constantly reduce the empty driving rate, to reduce the logistics costs of enterprises and alleviate the financial pressure of enterprises [2]. In addition, big data technology in warehouse management, logistics route optimization and other links also has a strong role to promote, while providing data analysis, predictive modeling and other functions, these aspects can also provide more support for the development of the manufacturing industry, and in the integration of logistics and manufacturing, logistics efficiency, manufacturing optimization and cost effectiveness can be provided by big data technology to a certain extent; And in the consumer market, it can ensure its development through new consumer products and improved services [3]. The specific process is shown in **Figure 1**.

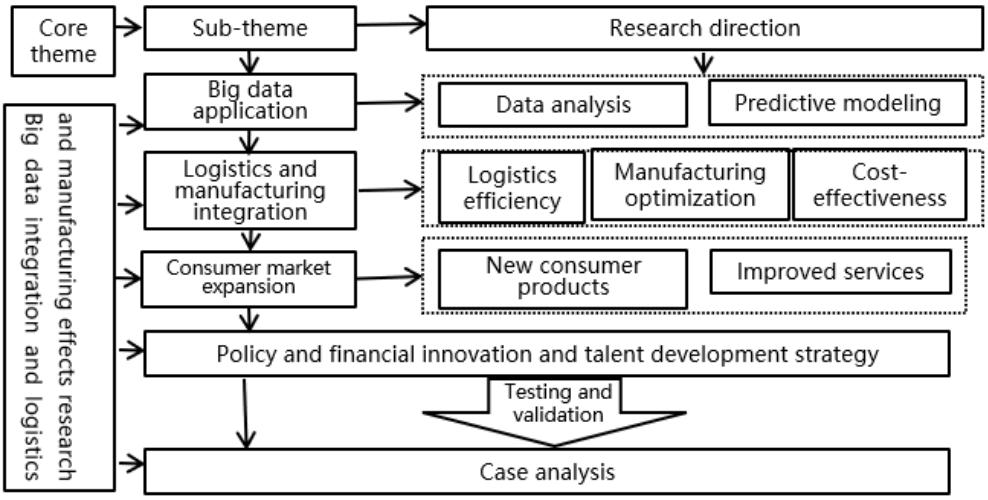

Figure 1. Big data driven integration process diagram of logistics and manufacturing industry in Haikou

3. The importance of the integration of logistics and manufacturing industry in Haikou under the background of big data

3.1. Promoting the deep integration of the two industries

In the context of big data, Haikou logistics and manufacturing industries can obtain strong technical support. By using advanced big data technology for analysis and mining, logistics enterprises can analyze and forecast market demand more accurately and adjust the logistics path based on it. In this way, inventory costs can be effectively reduced, and operational efficiency can be improved to the greatest extent [4]. At the same time, with the support of big data, manufacturing enterprises can also use advanced production technology to implement more refined management and can monitor the entire supply chain at any time to find potential risks in time, to improve the quality of production products. In addition, the deep integration of Haikou logistics and manufacturing can help the industry form a new industrial structure. In the process of continuous cooperation and communication, the original barriers and boundaries between the two industries are gradually disappearing, the logistics industry can gradually

access the manufacturing industry related to the supply chain management, inventory management, logistics distribution and other core links, and manufacturing enterprises will pay more attention to the optimization and upgrading of logistics in Haikou [5]. This kind of work mode integrating the two industries can not only further break the barriers existing in the traditional industry mode, but also promote the formation of a new work mode, which opens up a new situation for the development of regional economy.

3.2. Promoting economic structural transformation and upgrading

On the one hand, Haikou's integration of logistics and manufacturing can make the upstream and downstream of the industrial chain more closely linked. Relying on the support of big data, the logistics industry can comprehensively analyze the in-depth needs of manufacturing enterprises and provide more accurate logistics services to continuously simplify the manufacturing process of manufacturing enterprises, reduce manufacturing costs, and improve the competitiveness of products. The manufacturing enterprises can also change the production plan according to the feedback of the logistics data, improve the efficiency of the supply chain, and then realize the transformation and upgrading of the industry [6]. On the other hand, the application of big data technology can transform and upgrade the current economic structure. In the process of integration, new industrial models such as intelligent logistics and supply chain finance will constantly emerge, which can constantly generate new job demands and new economic demands. These new industries not only have the characteristics of high added value and high-tech content but also can constantly promote the development of related enterprises, thus forming an industrial cluster effect. And further enhance the competitiveness of the regional economy [7].

4. The path of Haikou logistics and manufacturing integration driven by big data

4.1. Establishing long-term strategic cooperative relations and integrating internal resources

With the continuous development of big data technology, the traditional Haikou logistics and manufacturing industries need to readjust and upgrade their original short-term and scattered cooperation mode, with the main purpose of establishing a long-term cooperation relationship, accurately docking each other's work needs, to form a more stable strategic alliance [8]. Through this form of deep integration, Haikou logistics related inventory dynamics, transportation time and other work content closely related to the manufacturing industry can help the relevant manufacturing managers to arrange more detailed production plans, overall arrangement of time and energy, maximize the efficiency of related manufacturing tasks, to avoid possible overproduction and delayed delivery [9]. At the same time, with the support of advanced technology, logistics enterprises can also obtain the order scheduling of manufacturing enterprises in advance, and the production law of products in off-season and peak seasons, on this basis, to make future transport capacity and warehousing planning, to ensure that the manufacturing enterprises can provide timely support when they need to ensure the stability and smooth operation of the supply chain. In addition, the managers of the two industries can also build an information-sharing platform. The manufacturing enterprises can upload the relevant data generated by their raw material procurement, production and processing, and finished product warehousing, breaking the limitations of information transmission and ensuring that Haikou logistics can pay attention to the development of enterprises in time. Meanwhile, logistics enterprises should also dig deep into the internal potential. Integrating dispersed transportation lines and warehouse bases, using big data to achieve intelligent optimization of storage layout, according to the flow of goods, flow characteristics, the warehouse is set closer to the manufacturing plant, where the traffic is more convenient, and the transfer cost is reduced.

4.2. Improving the construction of logistics infrastructure and optimizing the transportation structure

The construction of logistics infrastructure and the optimization of transportation structure play a very important role in the integration of Haikou logistics and manufacturing industry. In terms of infrastructure, the logistics industry in Haikou needs to overhaul and improve hardware facilities such as logistics parks, warehousing centers and distribution stations, and at the same time assist big data technology to relocate, and arrange related enterprises around the manufacturing cluster, to further improve the collection and distribution speed of goods [10]. In addition, the relevant facilities of the port and wharf should be enhanced, the utilization rate of the berth of the port and wharf should be monitored in real time by using big data, and the docking time of ships should be recorded, to rationally arrange the future operation process and make full use of the berth of Haikou port, thus reducing the backlog of goods to the greatest extent and improving the efficiency of container handling. To ensure the efficient flow of import and export manufacturing products. For the transportation structure, Haikou logistics involves different modes of transportation such as road, railway, water, and air transportation, and the selection of specific modes of transportation requires big data technology for more detailed differentiation [11]. For example, when transporting conventional goods, Haikou logistics needs to arrange the corresponding transportation mode according to the specific content of different seasonal conditions, time will give you demand and other influencing factors; When transporting urgent and valuable goods, air transportation can be arranged according to the specific situation of logistics at that time, and the fastest transportation method can be used to complete the corresponding transportation work. In this way, it can effectively improve the transportation efficiency and economic benefits, inject strong impetus into the integration of Haikou logistics and manufacturing industry, and create a more resilient pattern of industrial collaborative development [12].

4.3. Promoting integrated supply chain management and customized logistics services

From the perspective of integration, the integration of the supply chain can promote closer cooperation between logistics and manufacturing. In the specific management process, manufacturing enterprises can put forward practical demands to Haikou logistics. To enable logistics enterprises to provide more customized and personalized services [13]. At the same time, Haikou logistics service should be adjusted with the transformation and upgrading of the manufacturing industry. The use of big data technology logistics enterprises can accurately grasp the transportation mode that manufacturing enterprises need to use when transporting different goods, provide appropriate warehousing services and distribution services, and provide value-added services such as supply chain design and logistics finance that are more in line with the needs of enterprises. In addition, customized logistics services are also an important demand content in the development process of the current new era. In this way, Haikou Logistics can help manufacturing enterprises improve customer satisfaction, enhance customer loyalty, and create greater business value for manufacturing enterprises. At the same time, Haikou Logistics itself can continue to expand its service capabilities through this new work content, laying a foundation for its future development.

4.4. Strengthening policy support and guidance, optimizing talent training

The government can provide stronger policy guarantees for the development of enterprises. For the development of the industry, the cultivation of talents is an important direction to ensure that it can stand out in the increasingly fierce market competition. Therefore, the cultivation and introduction of talents is the current industry transformation and upgrading process needs to focus on, especially in the process of Haikou logistics and manufacturing integration, the relevant government departments need to promote the creation of “two industries” talent gathering platform, and introduce relevant policies to ensure the training and development of practical talents [14]. At the same time, to attract more outstanding industry talents, the relevant scientific research work system also needs to be further developed,

specifically adding comprehensive positions, promoting the construction of the green channel for the introduction of high-level technical production and service talents, and giving certain preferential policies to attract more talents to join the integration of the two industries [15]. In addition, with the support of policies, big data technology can further promote the "integration of the two industries," and use intelligent technology to promote inventory management, manufacturing automation, demand forecasting, product analysis and logistics optimization functions to form a flexible and efficient supply chain system, which can also promote the upgrading of manufacturing and logistics industry. Thus supporting them to occupy a place in the growing consumer market. The detailed process is shown in **Figure 2**. At the same time, enterprises attract talents with different technologies and excellent abilities to join the development of enterprises using technology investment, commissioned development, and team introduction. At the same time, relevant policies issued by the government provide more convenience for the flow of talents in different regions to break the restrictions of traditional industries and maintain the development of the market and industry.

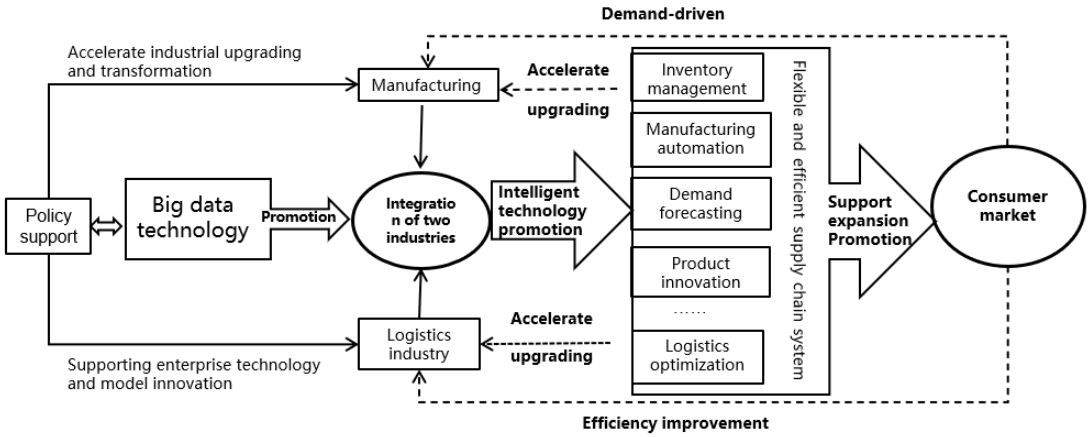

Figure 2. Schematic diagram of the integration mechanism between Haikou's logistics and manufacturing industries driven by big data

5. Conclusion

In short, with the support of big data, Haikou logistics and manufacturing industry can further realize the deep integration of both sides, which can not only improve the work and production quality of Haikou logistics and manufacturing industry, but also cooperate with other industries involved, such as information service industry, financial service industry, business service industry and other producer services. Through the establishment of long-term cooperative relations and the improvement of relevant infrastructure, the production and service capabilities of the two industries can be further improved, and the cooperation content with various industries can be improved under continuous adjustment and development to promote the coordinated development of the logistics industry and manufacturing industry.

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Disclosure statement

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