

Research on the Optimization of Smart Logistics Supply Chain Based on the Internet of Things

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Abstract: In recent years, with the continuous advancement of science, technology and economy, my country has made great research progress in IoT-related technologies, and the supply chain occupies the most important position among them. The so-called supply chain refers to the series connection of manufacturers, wholesalers and retailers, so as to serve each other together, and finally achieve a win-win cooperation. In this way, the management of the entire supply chain can be effectively improved, thereby promoting the further development of the entire industry. Based on this, the article briefly introduces the smart logistics supply chain under the Internet of Things, and further discusses its optimization measures from the perspective of improving supply chain management.

1. Introduction

Through supply chain management, the entire industrial chain in a context can be combined to make it a mutually reinforcing whole. In this chain from production to sales, there are producers, wholesalers, and logistics and freight services. Enterprises, logistics service providers and network-based retailers have only emerged in recent years, but they have developed rapidly since their emergence, and have broken the traditional logistics management model, resulting in the rapid development of the entire logistics industry. As the competition within various industries in the society becomes more and more intense, the original emphasis on self-competition among enterprises is gradually changing to an emphasis on the entire supply chain. In layman's terms, that is, current enterprises pay more attention to cooperation and are more inclined to seek common benefits. Therefore, under the current market competition situation and the status quo of industry development, it is extremely necessary to optimize the intelligent logistics supply chain based on the Internet of Things.

2. The Concept of the Internet of Things and Its Inner Meaning

The concept of the Internet of Things was first proposed in 1999. To a certain extent, it can be simply defined as a network that connects goods. Of course, the Internet of Things and sensor technology have an inseparable relationship, which is a means based on network communication technology. Explain in a more popular direction: all ordinary objects in the world that exist independently or can perform functions independently rely on the Internet and related network information exchange methods to realize the interconnection of objects. To give a simple example, in the current express industry, every express package will be posted with a transportation note that records the item information. During the transportation process, the relevant staff uses a dedicated infrared scanning device to scan the second part of the transportation note. Dimension code can obtain the information of the transported goods and record the transshipment. This is one of the most common applications of the Internet of Things technology in the field of cargo transportation. The Internet of Things technology has been applied to many fields, including transportation and logistics, industrial manufacturing, and even medical and health care. From the current market

development trend, the development of the Internet of Things still has a very broad space.

3. The Importance of the Existence of an Intelligent Logistics Supply Chain Based on the Internet of Things

3.1 Helping to Share Information

The intelligent logistics supply chain based on the Internet of Things makes the sharing of business information more convenient. Manufacturers need to deliver their own products to users through the logistics supply chain. In order to avoid duplication and untimely delivery, they must obtain relevant item data in a timely and accurate manner. The same is true in the logistics market. Enterprises must determine the corresponding market needs and fully clarify the relevant data information to ensure that all the inventory they hold can be released in time and avoid backlogs that damage the interests of the enterprise. Information sharing has provided an effective basis for the reduction of enterprise inventory, and goods are regularly and quantitatively transported out in time, which will bring better capital flow for logistics enterprises.

3.2 Seamless Network Interaction

With the continuous leaping development of the market economy, domestic users' demand for goods is also constantly changing. At present, basically all users' requirements for goods are constantly increasing. Therefore, logistics companies must promptly improve related services to meet the differences of users. Demand, for example, the speed of providing resources to users should be faster, so that the operation of resources can be more flexible, not only to meet the needs of users, but also to help the enterprise's own resource management can be more optimized. The existence of an intelligent logistics supply chain based on the Internet of Things can help realize seamless network interaction between enterprises and users, so that enterprises can better understand user needs, and can respond in a more timely manner based on the learned user needs. Management adjustments.

3.3 Help the Management of the Supply Chain Become More Transparent

In the process of management and control of the entire logistics supply chain, we can clearly find that with the operation of the network, the intelligent supply chain will almost become the quality and transportation standard of all product production, and will provide all information related to the product. Concentrated in the product label. In the process of product circulation, logistics personnel can use corresponding equipment to identify product labels and obtain product information from them, so that users in the supply chain can share and exchange this information, and ultimately realize product management and distribution in the entire supply chain. Transparency of the above, more conducive to the improvement of management quality and fairer competition between enterprises.

4. Intelligent Logistics Supply Chain Optimization Based on the Internet of Things

With the continuous development of the economy of the times, traditional logistics management models and corresponding information management systems have gradually been unable to adapt to the current development of the entire logistics industry, and the intelligent logistics supply chain based on the Internet of Things can have more resources, making information, logistics, Technology, etc. are gathered together to play a role in the competition of enterprises^[1]. Relying on the Internet of Things technology and related platforms, the entire logistics supply chain is continuously optimized, which ultimately makes the logistics industry more adaptable to the market.

4.1 Optimize the Work Process

The flow of information in the optimization of the smart logistics supply chain is an extremely important link. The logistics enterprise must combine the automatic management of the corresponding logistics resources and the related logistics technology to optimize the resource

service mode and upgrade its own The service system helps the flow of information become more efficient, and the corresponding entire supply system will become more “wise.” Logistics enterprises should make good use of relevant electronic technology to improve the management of the entire supply chain, so that automation can play the greatest role in the entire logistics supply chain and help users to obtain the latest logistics information more quickly.

4.2 Optimize Production and Procurement Management

In the process of optimizing the intelligent logistics supply chain based on the Internet of Things, the Internet can also be used to help the entire resource production process to be automated, to help optimize the management of material procurement, and to use the corresponding technology to accurately locate the various products required by the user, Or the current location of raw materials or even a certain component, reduce possible errors in the item procurement process, and obtain corresponding feedback on the results in time, making the entire production procurement process more stable, and the quality of the final output product There will be great protection.

4.3 Optimize Sales Management

During the sale of products or services, consumers should be able to communicate with their direct suppliers, so as to help consumers meet their needs to the greatest extent, and at the same time, commodity suppliers can maximize their management and expansion. Sales channels. In this more direct interaction, the time consumers need to wait is greatly reduced, and at the same time, they can use the information on the Internet to obtain the most complete information related to the product, so as to avoid possible legal disputes during the product transaction process ^[2]. In the entire sales process, logistics companies need to have an accurate understanding of customer needs, fill missing goods in time, save customers' waiting time, and enable customers to achieve higher standards of satisfaction with the company.

4.4 Optimize the Management of Logistics Equipment and Facilities

The existence of the Internet of Things technology makes the application management of its equipment and facilities in the logistics supply chain more intelligent, and the further optimization of the logistics equipment and facility management helps the entire logistics and its supply chain management to achieve further development. The relatively mature Internet of Things technologies currently applied are barcode technology, fixed-determination systems, geographic information systems, etc. These technologies are embedded in corresponding equipment and tags, and then through corresponding perception, information recording, etc., to give the greatest support to the entire logistics operation, Making the relevant logistics management more efficient, thereby helping to greatly reduce the cost of logistics.

5. Conclusion

In the optimization process of the smart logistics supply chain based on the Internet of Things, it is necessary to maximize the advantages of the Internet of Things technology to optimize management of all links in the logistics chain, from production to sales to transportation, and to carry out the most accurate tracking and positioning. So as to better serve users and bring greater economic benefits to logistics enterprises.

References

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