

Research on the Current Situation and Problems of Intelligent Logistics Industry in China

Ladan Yang

Shenzhen Middle School, China

Abstract. With the rapid development of modern science and technology and intellectualization, in today's society, intellectualization has become the development trend of the logistics industry under e-commerce. This paper mainly introduces the concept of intelligent logistics, then analyzes the development of intelligent domestic logistics and the role of intelligent logistics in various industries, briefly analyzes the problems existing in the intelligent logistics industry, and finally puts forward the corresponding countermeasures for the rapid development of China's intelligent logistics industry.

Keywords: Logistics Industry; Intelligent Logistics; Current Situation.

1. Introduction

Intelligent logistics is the development of traditional logistics based on the use of modern intelligent technologies such as the Internet. The function system which combines the Internet as a point tripartite tool with the functions of purchasing, shipping, processing and distribution, information resource processing and so on, is a modern logistics industry to upgrade the level of the industry, reduce costs and achieve large-scale logistics resources [1].

Intelligent logistics makes use of integrated intelligent technology to make logistics system imitate human intelligence and have the ability to think, percept, learn, reason, judge and self-solve some problems in logistics[2]. The future development of intelligent logistics will embody four characteristics: intellectualization, integration and hierarchy, flexibility and socialization, Intelligent operation research and decision-making in the process of the logistics operation. With logistics management as the core, the integration of transportation, storage, packaging, loading and unloading and the hierarchy of intelligent logistics system are realized. The development of Intelligent Logistics will highlight the concept of "customer-centered" and adjust production process flexibly according to changes in consumer demand. The development of intelligent logistics will promote the development of regional economy, optimize the allocation of world resources, and realize socialization through four intelligent mechanisms of intelligent logistics system, that is, intelligent information acquisition technology, intelligent transmission technology, intelligent processing technology, intelligent application technology.

The Internet of Things (IOT) has the characteristics of large correlation, wide application and strong explosion in modern logistics. It involves a wide range of hardware, software and integrated technology, and covers many fields such as urban safety, environmental protection, intelligent transportation, intelligent logistics, intelligent city, intelligent agriculture and intelligent medical treatment. It will lead to a large-scale and large-scale high-tech market.

The development of intelligent logistics must take sensor, wireless network technology, wireless sensor network, positioning technology and other links into account. The development of these technologies affects the future development of intelligent logistics.

In specific applications, the Internet of Things can save a lot of time for the operation process of logistics links. The well-known bar code is widely used in warehouse management, transportation management, circulation processing management, handling management, information processing management, and so on. Manual reading of a bar code takes about ten seconds, while machine reading takes about two seconds. Moreover, it only takes 0.1 seconds to use radio frequency identification technology and electronic tag reading. Undoubtedly, this technology will greatly improve the efficiency of the logistics operation.

The development of the Internet of Things is promoting the development and transformation of logistics in China, and promoting the intellectualization of the logistics industry. With the introduction of the new concept of the Internet of Things, the upgrading of technology and the support

of policies, the future Internet of Things will bring great revolutionary changes to China's logistics industry. Intelligent logistics will usher in a new era of great development.

2. Development of Intelligent Logistics in China

2.1 Overview of the Development of Intelligent Logistics in China

To some extent, the development of intelligent logistics refers to the development history of the logistics data center. It mainly includes two points: how to make it bigger and how to do it specially. Bigger refers to horizontal integration to achieve the intensive use of similar resources, such as the use of information networks to integrate decentralized vehicles and cargo owners and to optimize the allocation of intensive, effective integration and management of various modes of transport using international multimodal transport platform. Specialized means the vertical integration, according to the professional category of logistics process information collection, so that the process can be integrated and optimized. Both types of data centers are "platforms" for integrating data, but the former provides standardized services in logistics, such as warehousing, freight forwarding, transportation, handling, distribution, and processing services.[3]The latter provides personalized and specialized services, such as the supply chain of household appliances, clothing, food and other overall solutions. At present, there are many data centers, including data centers serving industries or regions, data centers serving enterprises, data centers serving the whole country, and data centers serving the international community. Finally, the promotion and application of intelligent logistics in the era of logistics network should be implemented to promote the construction of various data centers.

At present, the development of intelligent logistics in our country shows a good trend of progress. With the support of network technology, the specific items of logistics have been effectively operated. Through the logistics technology based on the network platform, the corresponding control and management of goods warehouse cannot only promote the management and collection of basic information but also enhance the actual efficiency of logistics, such as reading and writing equivalent electronic labels, anti-conflict technology of electronic bill of lading, etc.

At present, China's network economy is developing rapidly. E-commerce promotes the rapid development of the logistics industry. The traditional logistics operation mode in the past can no longer meet the needs of the current social development. The various needs of human social development put forward new requirements for the comprehensive development of the logistics industry. The logistics industry needs to find more low-cost and efficient ways to alleviate its pressure based on social and economic development.

At present, the logistics of our country is affected by the traditional logistics operation system, and there are still imbalances in the management and the overall quality of service. In addition, with the rapid development of the times, the overall logistics industry development liquidity is poor, leading to the overall level of the physical industry is relatively backward. With the rapid development of China's socialist economy, in order to enhance its effective competitiveness, the logistics industry needs to adapt to the development of the times to achieve its comprehensive reform [4].

2.2 Development of Intelligent Logistics Industry in China

At present, our country's intelligent logistics is an e-commerce logistics operation system based on an intelligent network system, which can effectively control all aspects of logistics work through a centralized system. It also collects and transmits logistics information comprehensively, so that logistics managers and demanders can grasp all kinds of information timely and effectively in the network environment, and create better logistics services. Intelligent logistics has two main advantages: (1) Strengthen the feedback speed of logistics information and reduce the cost of various services. In the current era of network informationization, the processing of events has a high efficiency and rapidity. Rapid delivery of intelligent logistics information is also one of the important trends of current logistics development. In the past, the traditional way of logistics can only respond effectively to the transportation of goods, but the demander cannot grasp the logistics information in time. Today, with the increasing needs of service providers, the traditional methods of logistics work

in the past are no longer suited to the needs of the times and human development and need to improve the feedback rate of logistics operation fundamentally. Improve the establishment of logistics network control system. In order to control the rational allocation of resources in each link of logistics more effectively, shorten the work of each link of logistics, improve work efficiency, and ensure the safety of warehouse management and transportation allocation of logistics [5]. (2) Logistics services are more efficient and convenient. When logistics companies provide relevant logistics services, the unique tracking technology and electronic placing orders in intelligent logistics can maximize the effectiveness of logistics services and the convenience of information transmission, so that logistics companies and service providers can grasp effective logistics information at the first time to meet their own development needs. Therefore, the development of intelligent logistics has important application prospects in the following areas:

(1) The current situation of high loss in cold chain transportation requires effective supervision and prevention. From the perspective of the development of e-commerce in the world, the level of development of China's e-commerce is at a higher level, but from the perspective of the development of logistics system, it is still at a lower level, especially the lag of the development of cold chain logistics, which seriously restricts the goal of in-depth development of online shopping in China. Part of the reason why cold chain logistics lags in China is the slow development of intellectualization, which cannot realize the interaction of logistics, commerce and information.

(2) Intelligent changes can effectively speed up the efficiency of medical delivery, so that the price of drugs can be reduced. Relevant data show that the manufactured prices of Chinese patent medicines and chemicals are not high; only 20%-25% of the retail market price and 10%-20% of the retail market price, respectively. However, the backward logistics system has greatly increased the cost of medical logistics, resulting in high retail prices. As a kind of special commodity, medicine has different requirements for logistics system due to the differences in commodity varieties and forms. In the refrigerated transportation system, the requirements are still very high. However, most of China's pharmaceutical industry has adopted independent management in the logistics system. It not only results in small scale and serious repeatability of the system but also makes it difficult for different pharmaceutical manufacturers to form a synergistic effect on the whole. The improvement and perfection of the existing medical logistics system through intellectualization cannot only improve the efficiency and reduce the cost but also greatly improve the market competitiveness of the industry.

(3) Logistics intensive and intelligent transformation is conducive to expanding the development space of automobile parts supply logistics. Like pharmaceutical logistics, the current logistics system of automobile parts supplier in China is self-built and self-operated by relevant suppliers. Intelligent transformation can also provide a network, information and intelligent real-time connection and interaction platform for raw material suppliers, parts suppliers and vehicle manufacturers, thus enhancing the accuracy and timeliness of production and logistics.

(4) Intelligent logistics is an inevitable requirement in the short-term strong turnover characteristics for the garment industry. Due to the strong periodicity and seasonality of garment sales, it is easy to produce a large inventory backlog in the process of production and sales, and even some manufacturers' garment inventory is almost equal to the market sales. The large accumulation and high cost of products will inevitably affect the capital flow of manufacturers and reduce their ability of sustainable development. The construction of intelligent logistics system is undoubtedly an important way to reduce the cost of products in the garment industry and improve the market competitiveness.

3. Analysis of Problems in the Development of Intelligent Logistics Industry in China

(1) Coordination and unification of technical standards. The application and development of the Internet of Things involves various industries and technologies, and different industries will adopt different schemes and technologies to provide support. If each industry has its own independent

technical standards, then a large number of private networks formed will not be able to connect, form economies of scale, and form an integrated business model, which means that logistics costs cannot be reduced. In the field of intelligent logistics, there will be a large number of new technologies at all levels, such as sensing, communication, identification, application and so on. It is necessary to unify the technical standards as soon as possible. This is a key factor in deciding whether a new thing can develop on a large scale.

(2) Privacy and security issues. Automatic identification technology is a technology that automatically acquires the relevant information of the identified items by using certain identification devices and provides it to the background system to complete the relevant processing and control. As one of the key technologies of the Internet of Things, Radio Frequency Identification (RFID) is a non-contact automatic identification technology. Its basic principle is to use radio frequency signals and the transmission characteristics of space coupling or radar reflection to realize the automatic identification of the identified objects. Its characteristics determine that any information shown in a label can be remotely controlled and scanned arbitrarily. Moreover, tags automatically respond indiscriminately to the reader's instructions and transmit the stored information to the reader. The security of information cannot be guaranteed, which is an urgent technical problem to be solved. People themselves and all kinds of objects they use may carry all kinds of tags with them. They are very easy to be maliciously located and tracked under unknown circumstances, and their whereabouts and related privacy are violated. At present, such problems still do not have a good solution. If the business secrets and personal privacy involved are maliciously acquired and manipulated, the consequences will be unimaginable. This is not only a technical issue but also a moral and legal issue.

(3) Core technical issues. Domestic Internet of Things technology needs to be developed urgently. For example, domestic radio frequency identification technology is still dominated by low-end technology. Foreign manufacturers monopolize most high-end technology. More than 80% of high reliability and high sensitivity sensors need to be imported from abroad. For example, as the core of sensor technology, sensor chip, from technology to manufacturing technology, is lagging behind developed countries such as Europe and the United States. At present, a large part of UHF tag chips in the market are mainly from foreign companies such as INTEL, NXP, HITACHI and so on. Lack of high-end core technology undoubtedly has a great impact on China's international standard-setting competition.

(4) Relevant policies and regulations. The development of intelligent logistics not only needs various technologies but also involves the full cooperation and integration of the whole logistics industry and enterprises. At present, the relevant policies and regulations are too few to meet the actual needs, which requires the state to take the lead in the legislation of relevant industrial policies, formulate laws and regulations suitable for the development of the entire logistics industry, and ensure the steady development of intelligent logistics.

(5) Development of management platform. In the era of Internet of Things, the number of networked objects will exceed the Internet hundreds of times, and the amount of information transmission and information processing after networking will exceed the Internet hundreds of times. Therefore, the corresponding management platform is indispensable, and the construction of a logistics public information platform is imminent. The main functions of logistics public information platform are to support enterprises' demand for logistics information through basic functional subsystems, to declare online, to trade online, to support relevant government departments' demand for logistics information, and to provide information at corresponding levels for different users' needs. Therefore, the establishment of a large comprehensive business management platform to provide all aspects of information management is the basis to ensure the normal operation of the Internet of Things.

As one of the industries with primary application dimension, logistics industry should seize this epoch-making opportunity, improve its industry informatization level and overall operation efficiency of logistics links, and make intelligent logistics bigger and stronger with the support of national policies and continuous technological innovation.

4. Countermeasure and Suggestion of Intelligent Logistics Development in China

(1) Focus on the construction and training of talents. First, we should make full use of all kinds of resources, develop education, encourage schools and enterprises to carry out multi-faceted and multi-level learning work, learn from advanced enterprises experience and shortcomings, and intensify efforts to train versatile talents with practical abilities. Second, we should focus on cultivating innovative thinking of managers, which can adapt to the development and change, constantly develop new logistics technology, improve the service skills and level of enterprises, and provide valuable talents for the development of enterprises.

(2) Strengthen the level of intelligence. Promote the development of contemporary intelligent industry and accelerate the construction of intelligent logistics system. Suggestions from the following aspects: First, we should strengthen the construction of information systems within enterprises. Second, improve the use of intelligence by enterprises. If we want to build an enterprise's intelligence system, we should not only focus on talents, services, intelligent information system, etc.

To strengthen the "soft power" and to improve the "hard power", it is necessary for enterprises to invest in purchasing a large number of intelligent equipment and building matching high-tech equipment.

(3) Building an information-sharing platform in enterprises. In order to promote the development of intelligent logistics industry, the government should speed up the construction of market-oriented information platform, start with industrial efficiency, and vigorously build logistics information sharing platform. In the construction of an information-sharing platform, we should pay attention to the following points: First, we should build a unified national information exchange system as the basis. Second, we should pay attention to the integration of various resources and information to provide convenient services for the logistics market. Third, enterprises should improve their creative and efficient operation mode, not only rely on government investment. Fourth, we should effectively mobilize the enthusiasm of small and medium-sized enterprises in the construction and application platform.

(4) Providing security assurance of information exchange. In order to ensure the security of information exchange in intelligent logistics system, safety management schemes should be formulated at the national level, and a comprehensive system of information security risk, prevention and emergency should be constantly established and improved. In this way, it is very convenient for users to use storage resources and share resources safely and efficiently, and the security and reliability are effectively guaranteed, to improve the safe use of intelligent logistics system.

In a word, with the development of society, building an efficient and economical logistics system has become the basic requirement of the development of the logistics industry. Intelligent logistics system will make up for the deficiencies in the industry to the greatest extent and improve the efficiency of the industry. It is the only way for the development and transformation of our industry.

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