10.70711/aitr.v2i4.4884

Information Network and its Implementation Countermeasures in Modern Logistics Management

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Abstract: In modern logistics management, information network has become a key measure to improve logistics efficiency, optimize the allocation of resources and innovate business model. On the basis of analyzing the connotation and characteristics of logistics information network, this paper analyzes the challenges faced in the implementation process, and puts forward the implementation countermeasures from the aspects of top-level design, standard specification, security and privacy, innovative application, etc., in order to provide reference and enlightenment for the information transformation of logistics enterprises.

Keywords: Modern logistics; Information network; Implementation countermeasures; Digital transformation

Introduction

With the rapid development of information technology and the advent of the digital economy era, the modern logistics industry is facing an important opportunity period of transformation and upgrading and high-quality development. As an important development direction of modern logistics management, information network has become a key measure for logistics enterprises to improve operation efficiency, optimize resource allocation and innovate logistics mode by using advanced information and communication technology and realize information sharing and service coordination.

1. The connotation of logistics information network

Logistics information network refers to the logistics enterprises using the Internet, Internet of things, big data, cloud computing and other modern information technology, the various node and link in the logistics system information connection and data through, realize the real-time logistics information collection, transmission, processing and sharing, and optimize the logistics operation process, improve the logistics efficiency and management level of the process[1].

In this regard, Logistics information network includes the following aspects: first, the digital transformation of logistics infrastructure, Such as storage equipment, transportation tools, loading, unloading and handling tools, To realize intelligent perception and information collection; Second, the information reengineering of logistics business process, Integrate order processing, warehousing management, transportation and distribution, cost settlement and other business links into the unified information management platform; Third, the standardization and sharing of logistics data, Establish a unified logistics information standards and specifications, To achieve data interconnection between different systems and different enterprises; Fourth, the intelligence and coordination of logistics decisions, Using technologies such as data analysis and artificial intelligence, Optimize the logistics network layout, stock management, transportation path and other decisions.

2. The practical challenge of logistics information network implementation

2.1 Weak information infrastructure

The overall informatization level of China's logistics industry is still in the initial stage of development, and there is still an obvious gap compared with developed countries. The business system construction of many logistics enterprises is relatively scattered, lack of unified planning and integration, inconsistent data standards, leading in difficult to effectively connect between systems, and the problem of information island is prominent. Small and medium-sized logistics enterprises are generally faced with the problem of insufficient financial strength, obviously insufficient investment in the information system, the lack of professional information talent team, and the construction of information infrastructure lags behind. At the same time, the investment structure of China's logistics enterprises is not reasonable, and the phenomenon of emphasizing hardware, light software and application system development is more common, which affects the overall efficiency of the information system.

2.2 The business process needs to be optimized

Under the traditional logistics operation mode, the business process is complex, the operation links are many, and the inter-department coordination is difficult, leading to the lack of unified information support and real-time control for the end-to-end logistics operations. The information transmission of all links inside the enterprise is not smooth, and the external and downstream enterprises of the supply chain lack effective business coordination and information sharing. In order to realize the logistics information network of the whole process, it is necessary to systematically sort out, optimize and reengineering the existing process from the perspective of business and management. This is a complex system engineering, which not only requires a large scale of capital and technical resources investment, but also requires a long time of project implementation and process running-in, which puts forward higher requirements for the resource investment ability and management level of enterprises.

3. Promote the implementation countermeasures of logistics information network

3.1 Strengthen the top-level design, scientific planning of logistics information construction

Logistics enterprises should fully understand the strategic significance of information network for improving the efficiency of logistics operation, optimizing resource allocation and driving business innovation, and take it as the top priority of enterprise development. We should start from the overall situation and long-term, based on the strategic goals of enterprise development, scientifically formulate the logistics information construction plan, and clarify the key elements such as construction thinking, target positioning, implementation path and resource allocation. Planning and design should be forward-looking, systematic and operable. It should not only base itself on the current reality and focus on key issues, but also look to the future and leave room for long-term development[2].

In the process of construction implementation, we should follow the principle of overall planning and step by step progress, reasonably set phased goals, clarify the key tasks and safeguard measures at each stage, and make steady and steady progress. We should adhere to the demand orientation and application traction, promote the deep integration of information technology and logistics business, and give play to the driving role of information technology in optimizing business process, improving management level and service mode innovation. At the same time, to establish an efficient implementation system, set up the enterprise top as the core of logistics informatization leading group, strengthen overall coordination, improve the working mechanism, increase the intensity of resources guarantee, strengthen the process control and performance evaluation, form the parties together work together, to ensure the correct direction of logistics information network construction and implementation results.

3.2 Improve standards and norms, and promote the interconnection and sharing of logistics information

Logistics enterprises should attach great importance to standardization, actively participate in and promote the construction of industry standards and norms, and accelerate the formation of unified standards in key fields such as barcode, electronic waybill, RFID and data interface. Enterprises should speed up the improvement of all kinds of logistics data standards and norms, from source collection, transmission and exchange, processing, storage and application, to achieve the unity of data standards, process standard connection, and consistent format docking, break the "information island", improve the data quality and use value.

Enterprises should follow the principle of coordination and sharing, strengthen the upstream and downstream logistics information docking, establish a unified data exchange and sharing platform, and realize the information interconnection and business integration of each node of the supply chain with the help of cloud computing, Internet of Things and other technical means. On the premise of ensuring information security, the data interface should be appropriately opened to partners to promote the sharing and sharing of logistics information, transport capacity resources and infrastructure. Establish a strict data management system, clarify the operation process and audit mechanism of collection, transmission, use and other links, strengthen the quality control of the whole life cycle, prevent data distortion, leakage and other risks, and maximize the efficiency of data resources. At the same time, it is necessary to strengthen the publicity and implementation training of standards and norms, enhance the standardization awareness and implementation ability of all staff, and form a normal data governance mechanism.

3.3 Innovate the application scenarios and expand the new mode of smart logistics

Logistics enterprises should, based on their own resource endowment and business characteristics, actively use the new generation of information technology, such as mobile Internet, big data analysis, artificial intelligence, block chain, etc., to explore new application scenarios of intelligent logistics, and promote the transformation and upgrading of traditional logistics to digital, networked and intelligent.

According to the pain points and customer needs of the industry, the application innovation can be focused on intelligent storage, intelligent transportation, supply chain coordination and other aspects. For example, using big data analysis to optimize logistics network layout and inventory strategy to improve the efficiency of resource allocation; using intelligent algorithm to optimize transportation routes and schedul-

ing to reduce logistics costs; using the Internet of Things technology to strengthen the visual monitoring, improve the time limit and quality of logistics; and using block chain technology to promote multi-party coordination and enhance the transparency and trust of supply chain. At the same time, it is necessary to closely follow the development trend of the industry and the personalized needs of customers, continuously optimize the logistics service process, deepen the integration of logistics and business flow, information flow and capital flow, provide integrated, customized and intelligent comprehensive logistics solutions, continuously expand value-added services, and explore a new profit model of smart logistics[3].

4. Conclusion

Information network is the inevitable trend of the development of modern logistics industry, and is the key path for logistics enterprises to realize cost reduction and efficiency, improve quality and efficiency. Logistics enterprises should take the information network as the traction, promote the deep integration of logistics and information technology, and speed up the business process reengineering and mode innovation. We should focus on the overall situation, highlight the key points, promote various construction tasks as a whole, and build the logistics information ability into a core competitive advantage. It is believed that through unremitting efforts, China's logistics industry will be promoted to the intelligent, network, high quality transformation development.

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