Research on Supply Chain Management Information System of Foreign Trade Enterprises Based on Artificial Intelligence

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Abstract: Supply chain management plays an important role in the economic benefit growth and market competitiveness of foreign trade enterprises. At present, it is found from various information statistics that most foreign trade companies are still in exploratory for their understanding of supply chain management without establishing a complete system. Under the background of artificial intelligence (AI) technology, enterprises should actively introduce various high-end technical means, build scientific and technological systems and then enhance their core competitiveness. Companies can independently research and develop expert systems to collect various information and data, perform scientific reasoning, solve some economic problems, and expand the scope of trade.

1. Introduction:
Supply chain management is an important link in the economic development of foreign trade enterprises. At present, from actual investigations, it is found that more companies are still in a state of independent information, and information sharing is in an “island” status. Under the diversified technology system, enterprises need to gradually infiltrate AI technology, create a standardized processing system, and improve the degree of informatization of enterprise management. Considering the intense competition in the global market, in order to expand the international market share and enhance the agility of foreign trade enterprises, it is necessary to focus on the management of the supply chain, establish an integrated server structure, and realize the sharing of information. The article will analyze the supply chain management system from the perspective of AI and propose application methods to lay the foundation and sustainable development.

2. The content and function of enterprise supply chain management
Enterprise supply chain management is mainly to systematically manage enterprises, which includes the management of cross-enterprise, departmental material mobility and production activities. In view of the characteristics of foreign trade companies, the management department needs to conduct unified operations on internal finance, personnel, and services to effectively enhance the core competitiveness. In the current global market economy environment, the supply chain is an important symbol of enterprise modernization and the basis for achieving leapfrog transformation. From the perspective of long term, supply chain management is essentially a joint enterprise mechanism, which mainly includes product suppliers, manufacturers, exporters, international logistics and import buyers. These enterprises have close ties, which are also the responsibility of foreign trade enterprises. Under the entire enterprise consortium, the mutual traction and coordination is a strong guarantee for the realization of product benefits and services, and it can maximize the promotion of products to obtain greater competitive advantages.

Secondly, in order to improve the company’s strategy, it is necessary to reorganize the supply chain
management structure, clarify the advantages, select suitable companies, optimize the supply chain model and promote the further development. It is also the demonstration of core capabilities. Due to the impact of the global market, foreign trade companies are susceptible to a variety of factors, and market fluctuations may occur. Therefore, when constructing a supply chain network management system, an enterprise needs to adjust its strategic direction in time based on its own business conditions, introduce a variety of technical methods, realize information management, and enhance the supply chain’s ability to resist risks. The formation of the supply chain system of foreign trade companies can integrate the interests of various companies, set up rational marketing strategies, and achieve a win-win effect. The following is the main structure chart analysis of the supply chain:

3. **Overview of enterprise supply chain management and AI technology**

In the new era environment, a variety of new information technologies have begun to appear, which promotes the supply chain management of foreign trade enterprises. Network data analysis shows that the application of AI technology in supply chain management can handle all kinds of information in the most comprehensive manner. It can also promote information sharing among enterprises, connect different levels of economic behavior of enterprises, and maximize enterprise economic management. In addition, through AI technology, it can also save the input of manpower and material resources, realize online control and management, connect various departments within the company, handle the relationship between people, materials, finances and production, supply, and sales, and enhance the company’s control ability. Due to the continuous development of information technology, the scope of enterprise supply chain management has gradually expanded. In addition to strengthening internal control, it is also necessary to grasp the relationship between suppliers and customers. In addition, AI technology has also strengthened the speed of transmission, realizing the exchange and sharing in the enterprise supply chain.

4. **The relationship between AI information system and supply chain management**

Enterprise informatization mainly uses a variety of scientific and technological means, such as AI and Internet things, to develop and use the company’s internal information resources, improve the overall management and operation. Supply chain management of foreign trade enterprises involves multiple parts, including product manufacturers and transporters. It covers multiple sections, which is the focus of enterprise information management construction. Companies must integrate various resources in the
supply chain, conduct overall management, realize integrated control of supply chain operations, and improve the overall strength. Relying on the remote terminal control, local area network platform, and subsystems in the AI technology system, they can strengthen the relevance of various departments of the enterprise and innovate the information management model. AI and the supply chain are closely related, and rely on each other to achieve common development.

5. Research on supply chain management system of foreign trade enterprises

5.1 Construct a sound supply chain management model and strengthen internal control

In the era of the Internet economy, the division of physical management has given birth to new, namely supply chain management. It is necessary to rationally plan the supply chain management model, introduce AI technology, strengthen the management and control of manufacturers, suppliers, distributors, and foreign customers, so as to reduce the investment cost and save the resource occupancy rate. Analyzing from foreign trade product sales, it is necessary to deeply explore the target market of foreign trade companies, understand the changes in the industrial competition situation, comprehensively analyze market information and update the supply chain related concepts and methods in a timely manner. Regarding the current status of information technology, companies need to use AI technology scientifically to develop a system for integrating and analyzing information and data, strictly supervising the direction of production and logistics, and accurately planning and regulating. The following will specifically show the operating system of supply chain management of foreign trade enterprises.

![Figure 2. Supply chain business model](image)

For example, R&D and purchasing decision-making can establish a technical department and set up a “local terminal” within the company to collect and integrate product data and raw material procurement information. Staff need to review them one by one. When imported into the central control system, the terminal will automatically generate a chart for reference. At the same time, for work control and customer relationship (CRM), companies need to arrange professional technical personnel, use intelligent analysis systems, standardize processing, and fully follow up on the online contract signing, product inspection and receipt, and payment stages. The system will always monitor and urge regularly. It is necessary to cleverly use the big data system to comprehensively analyze the reliability of the foreign trade product program and conduct risk evaluation. The product operation department needs to combine a series of suggestions made by the central system to make intentional changes and ensure the safety of corporate procurement and sales.

In addition, inventory management is an important part of the supply chain. The main is to record the classification, quantity, consumption, etc. of materials in daily production and operation. If
relevant staff need to inquire about certain information, they can enter into the “intelligent robot” Corresponding product model will automatically search and fix the point, and the management staff can efficiently control the input of various raw material quantities to avoid inventory exceeding the standard. The AI system can also integrate data and information such as material lists and printing. Therefore, in the current market environment, foreign trade companies must actively innovate supply chain management models and introduce AI technology, clarify production and logistics procedures, realize computer automation control, and promote the sustainable development.

5.2 Correctly understand supply chain management and update corporate concepts

In order to improve the supply chain management, foreign trade companies must continue to innovate operating models, scientifically divide and control customers, markets, and production, and fully demonstrate the advantages and characteristics of the management model. In the context of the information age, it is also necessary to update the concept of enterprise, create a composite technology system, based on AI, integrate the industrial structure, financial strength, and trade characteristics, and make appropriate adjustments to promote foreign trade companies in the supply chain. The management is more scientific, standardized, and systematic to achieve the set development goals. Supply chain management involves multiple enterprises and management departments. There are fundamental differences between these institutions. It requires reorganization of the enterprise organizational structure, and establishment of a wireless operating system and database to fully understand business. It can realize that the supply chain green management will continue to expand corporate influence and gain market competitive position.

For example, for foreign trade companies’ order entrust and trade execution links, they can use wireless operating system and RFID to automatically receive orders and provide timely feedback in accordance with the set engineering process. In addition, companies can create special on-board terminals and set up tracking points in different orders. The system can view the entire operation process of orders at any time, and integrate and predict the deadlines for order completion. In order to realize logistics information sharing, enterprises can jointly develop subsystems to dynamically upload information on tracking, arrival inspection, etc. If enterprises need to obtain corresponding information, they need to enter the secret key. Recognized by the management department, it can not only ensure the security of the data, but also provide a convenient channel for communication between enterprises. In addition, in order to strengthen the online interaction with customers, the company is opening a supply chain management consulting platform, where customers can inquire inventory and purchase orders at any time to improve work efficiency. In short, foreign trade companies must formally apply AI technology in supply chain management, and continuously optimize the management structure.

5.3 Grasp all links of the supply chain and improve management efficiency

At present, foreign trade companies are facing huge challenges. Under the complicated domestic and foreign environment, building a complete supply chain management system is the fundamental. In the international trade mall, companies need to form a dynamic alliance organization, build a block chain structure, correctly apply AI technology, and form a highly trusted cooperative relationship. In addition, the SCOR model can be appropriately introduced to comprehensively evaluate all links to reduce investment time and costs, strengthen risk prevention, scientifically predict and avoid risks, reduce transaction losses, and achieve a win-win situation for multiple parties. The central point of the supply chain is a network composed of suppliers, manufacturers, distributors, sellers, customers and service providers. It not only connects logistics, information, capital, but also covers market promotion. Under the diversified technology system, companies should develop management platforms in depth, using EID modules, unlimited clusters, BARCODE, and network remote monitoring, etc., to conduct targeted control.

For example, Hongwei has used AI technology to independently build a super sales network and service team, and achieve integrated services such as material procurement, supply, inspection, storage,
and distribution. In the product inspection, it is necessary to rely on electronic inspection equipment and control the hardware system and X-ray machine to realize three-dimensional virtual scanning of various types of products, and import the information into the database. The staff needs to analyze and check the quality products to return. In warehouse management, most companies will install electronic eyes and IC cards to strictly control personnel access. Intelligent anti-theft warning devices will be set up in each area managed by the console, which can effectively reduce the amount of capital investment and improve economic benefits. Finally, companies must strengthen the establishment of talent teams, and improve the remuneration of international logistics employees, analyze the salary characteristics with the help of intelligent systems, and adjust them in time to attract more professional talents. It provides sufficient talent support, creates a good corporate culture atmosphere, and expands its influence.

6. Conclusion
Supply chain management is one of the main modes, which is mainly a corporate alliance formed by unifying product design, raw material procurement, sales services, and transportation. It can maximize the market competitiveness of enterprises and obtain certain economic benefits. In the context of the information age, in order to strengthen the management and analysis of the supply chain, foreign trade companies can independently research and develop or introduce AI technology to create a complete information processing system, thereby effectively solving supply chain management problems and promoting the sustainable development.

References:
[1] Pei Wanhui. 2019. Analysis of the problems and countermeasures in the supply chain management of Foshan foreign trade enterprises[J]. China Collective Economy, 000(004):54-55.
[2] Zhang Xian. 2019. Discussion on the information module architecture of Stone and Steel Company’s supply chain management system[J]. Railway Freight, (9):36-40.
[3] Yang Shulin, Ma Fei, Dong Mei. 2019. Research on the resilience of supply chain network under the action of logistics information management system[J]. Logistics Engineering and Management.