

## The Influence of the Application of Computer Network Technology on the Development of Logistics Management System

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**Abstract:** Logistics management is a complex engineering system, and logistics information technology is the application of modern information in each operation link of logistics. The development of logistics should realize storage automation, barcoding and management computerization. The computer network provides the good fundamental platform for the logistics network, which is the inevitable logistics informationization tendency and important factor for promoting the Chinese economy development the indispensable.

Modern logistics has the idea of system integration and total cost control. It regards all the activities of supply, production, sales, transportation, inventory and related information flow in economic activities as a dynamic system as a whole, and what is concerned about the operating efficiency and cost of the whole system. However, good logistics management can greatly reduce the cost of enterprises, and the logistics field is even proposed as the "dark continent" of economic growth, which is the third source of profits after labor and resources. Manufacturers and distributors around the world continue to experience a variety of pressures, including smaller and more frequent product orders, changing product requirements and increased customization and service value. In order to remain invincible in the market, enterprises must carry out information construction and adopt certain strategies to adapt to improve the inventory management, flexibility of operation and the degree of various process integration.

In recent years, with the rapid development of computer network and communication technology, logistics management system evolves from a simple way to automatic management rapidly. Its main sign is Automated logistics equipment, such as Automated Guided Vehicle, AGV, AS/RS-automated Storage/Retrieve System, sky-rail - rail-mounted Vehicle, Stacker Crane, etc., and the emergence of logistics computer management and control System. Through the establishment of a modern logistics management system, so that customers can issue online transport instructions, realizing warehouse operation instructions and distribution instructions, can query freight rates, inventory reports, billing statistics, tracking the status of goods; Make logistics company can review customer's instructions, on land, sea, air, multimodal transport, commissioned task distribution and business operations, give orders for transportation and warehousing enterprise alliance, all-the-way tracking cargo status, the statistics for each shipment business cost, management of logistics company with customers, alliance between accounts, provide electronic customs clearance, commodity inspection/online inspection/quarantine, online insurance services such as interface; Enables the alliance enterprise to inquire the instruction and with the logistics company the current account and so on. Logistics has become the foundation of concurrent engineering and an integral part of CIMS.

Modern logistics is highly dependent on the collection, analysis, processing and real-time update of a large number of data and information, thus, logistics informatization is the inevitable demand of the whole society informatization. In the modern society with highly developed computer network technology, informatization permeate into every field of logistics from the database and code of customer data acquisition and order processing, to the electronic and computerized logistics information processing, to the real-time information transmission and standardization. Therefore, it is the best choice for enterprises to obtain competitive advantages by the establishment of a modern,

information logistics management system, so as to provide enterprises with a modern logistics business electronic management and operation platform. What's more, through the information system, resource management is carried out and relying on the network, the whole process of the centralized resource management, the whole network and the whole network is realized. The optimal matching of vehicle source and task is realized, and the information is real-time and the response is prearranged.

The information service function of logistics system must be established on the basis of computer network technology and international EDI information technology. It can be said that "information" is the central nerve of logistics activities, and this function plays an indispensable role in the logistics system, which is manifested in barcode technology, EDI technology, automation technology, network technology, intelligence and flexibility technology. The typical way is through barcode scanning or rfid tag identification, and then the information will be input to the warehouse management system (WMS) or manufacturing execution system (MES). When the order is completed, its status is sent to the highest level of the information system, enterprise resource planning (ERP), which in turn publishes this information to the supply chain software and EDI for shipment to the customer. At present EDI through the Internet has become a reality. The application of these modern technologies and facilities greatly improves the efficiency of logistics activities and expands the field of logistics activities, which is manifested in the following aspects.

### **1. Procurement management**

According to the correct and timely procurement information provided by the system, which helps enterprise managers to formulate scientific procurement strategies, provide timely, appropriate and affordable procurement management, and timely understand the performance of suppliers. The system provides functions from procurement application to goods acceptance and quality control to realize comprehensive management of procurement business.

### **2. Sales management**

On the basis of the history of the system to provide sales records and information, managers can make reasonable sales plan, and real-time monitoring of each order processing, handle customer credit and stock information at any time, such as scientific and reasonable adjustments in a timely manner to make the whole sales process high quality to meet customer demand.

### **3. Inventory management**

Storage is increasingly seen as a logistics process rather than just a static storage technology. Through the application of buffer stations, accumulation areas and some related operations, warehousing has become more than a temporary material retention process. Using this system, managers can obtain real-time dynamic material inventory status information, so as to better control inventory, improve efficiency, and shorten the time of delivery, improve customer service levels, through the intelligent analysis, finally make the enterprise to reduce inventory costs, production costs, logistics information timely feedback, accelerate capital operation. Comprehensive inventory control is the key to efficient Warehouse Management, new WMS (Warehouse Management System), Warehouse Management System to track and control the flow of the change of inventory and order, to automatically order combination or separation, prioritize, remind timely inventory restocking and emergency order and shipment in advance notice (ASN) and so on, provides a based on minicomputers, PC, server, the warehousing, distribution, and manufacturing operations such as provide real-time inventory Management, and to integrate them in a package, Form an object-oriented design, open, client (server structure) and Oracle, SQL and other large database.

#### **4. Supply chain management system**

(1) By supporting various business models, the complete supply chain link, the interface with the enterprise's original background ERP or MIS system, the integration of CRM, OA, e-commerce, quality management and other systems, forming a powerful enterprise information center.

(2) Excellent architecture design has sufficient scalability to meet the future business development of the enterprise on the basis of meeting the existing market demand.

(3) Advanced data encryption technology is adopted to ensure the security of data in transmission;

(4) B/S structure reduces the maintenance workload and supports remote office. This system adopts B/S structure completely. The client does not need to install software or configure.

(5) Based on the net architecture, international-oriented and future-oriented, the design architecture and coding method of this product are completely based on the net architecture, which conforms to the international industry standards and is conducive to the system integration and expansion in the future.

#### **5. Customer relationship management**

Regarding customer database as a data center, enterprises can record all kinds of activities of customers in the whole process of marketing and sales, track the status of all kinds of activities, and establish statistical models of all kinds of data for later analysis and decision support.

#### **6. Quality management**

It integrates the theory of total quality management and the thought of ISO quality management system. At the same time, it combines the characteristics of information management and gives full play to the advantages of information integration, large data processing capacity, fast speed and multi-angle data analysis to promote the development of enterprise quality management and provide a powerful tool for the continuous improvement of quality. The quality management system standardizes the quality management process of articles, so as to effectively monitor the quality of articles, improve the qualified rate of products, ultimately reduce the production cost of products, and improve the economic benefits of enterprises. Take wal-mart as an example, it is the world's first logistics data processing center and the first enterprise to achieve the network monitoring of 24-hour computer logistics within the group, so as to integrate procurement inventory, ordering, distribution and sales. In the 1970s, wal-mart established the Management information System for logistics, also known as the Management information System. The System is responsible for processing System statements and speeds up the operation. In the 1980s, it cooperated with hughes company to launch logistics communication satellite. In 1983, it adopted POS (sales starting point data system), EDI was established in 1985, and QR (Quick Response) was established in 1986. With these information technologies, wal-mart has made great progress. For example, customers go to wal-mart store shopping, use barcode, Radio Frequency technology and POS machine, and print invoices through POS. At the same time, the computer of the person in charge of the production plan, procurement plan and the supplier will display the information at the same time, and each link will complete its own work in time through the information, thus reducing a lot of unnecessary time waste and speeding up the logistics cycle.

Logistics is to solve the problem of logistics activities mechanization, automation and rationalization, so as to achieve the time and space efficiency of the logistics system. Modern logistics system consists of semi-automatic, automatic and intelligent logistics equipment and computer logistics management and control system. Any kind of logistics equipment must accept the management and control of the logistics system computer, accept the instructions issued by the computer, complete the specified action, feedback the execution of the action or the current situation. Intelligent logistics equipment has a certain degree of autonomy, can better identify the path and environment, with a certain data processing function.

Modern logistics equipment is a mechatronics equipment developed on the basis of computer science and electronic technology combined with traditional mechanical discipline. From the point of view of management and control of logistics system, the adoption of computer network and database technology is the premise for the whole system to run normally. An important tool at present is simulation. The application of simulation technology makes the logistics system design at a higher level. It relies on experience of speculation from logistics system to remove the unreasonable structure design, and on the screen, the operator can observe different scenarios, and can assume that some conditions through the different production capacity to evaluate various logistics solutions, such as a subsystem to suspend work through the different production capacity to evaluate various logistics solutions, observe a possible situation. Simulation software brings the system closer to the real world. In a word, The development of modern logistics with the help of computer network technology is in line with the trend of society.

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