Application of Information System in Warehouse Management

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ABSTRACT

The economic development drives the leap of information. The application of information system has become an indispensable tool for all walks of life. The storage industry is no exception. Information system with its modern, efficient technology advantages in the warehouse storage management has been rapidly promoted and applied, greatly improving the efficiency of enterprise warehouse management. Warehousing management information system is for the entire process of storage operations electronic operation, the storage of goods and the dynamic arrangements for storage, storage and management of enterprises in the rapid response to the problems and timely response to solve the complex business inventory, distribution, etc. problem. However, with the development of science and technology in society, the basic warehouse information system can no longer meet the needs of modern enterprise warehousing and management, which requires enterprises to further improve the function of warehousing information system in accordance with the development needs to ensure the steady development and sustainable development of enterprises.

KEYWORDS

Information system; Storage management; Cloud storage.

INFORMATION TECHNOLOGY IN WAREHOUSE MANAGEMENT APPLICATION

Bar code technology applications

Warehouse information management, the information technology is widely used in enterprise storage management information system, and bar code technology is widely used in warehousing management, an information technology, bar code technology in the promotion and application of enterprises, mainly by reducing labor costs to reduce the overall cost of production way to none other customers. In the process of warehouse management, bar code technology can analyze the collection of goods information, the tracking of information, the circulation of information and the statistics of information, mark each goods or product with the corresponding bar code, allocate the corresponding quantity for each warehouse of the digital cluster terminal (PDT), in the goods out of storage and the transfer of links on the scan, real-time tracking of logistics, to avoid the goods wrongly taken in transit or omissions. This is conducive to real-time, accurate control of goods.

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Radio frequency identification technology applications

Radio frequency identification technology is the use of radio frequency non-contact two-way communication to exchange data between each other wireless identification technology. In the import and export warehouse to install a fixed reader writer can be achieved automatically into and out of the library of goods, different goods have different storage methods, storage conditions, and the use of RFID technology in the tag information recording function, you can quickly Judge the goods suitable warehouse and the exact storage location.

Storage time. RFID can also inventory the goods at any time quickly, so that staff keep abreast of the situation of the goods.

GPS/GIS technology applications

General enterprises have multiple warehouses, frequent warehousing and warehousing of goods, and complicated vehicle deployment. In the distribution process, PS technology is used.

To track the vehicles in real time. GIS systems are used to provide the transportation vehicles with geographical conditions. This will enable the transport of goods to the selected route, on time and on time to reach the destination, to ensure the least cost to complete the most efficient distribution.

INFORMATION SYSTEM IN WAREHOUSE MANAGEMENT APPLICATION

Automated warehouse information system

Automated warehousing management information system using intelligent automation and information management, simplifying the materials and products operating processes and improve work efficiency. Complete automation in the storage management into the design and construction management, and monitoring level executives, performs layer 3 comprises a programmable logic controller (PLC) (see Figure 1), are the PLC, the stacker storage means and PLC library institutions PLC, automated information system includes business leaders manage to line the entire staff class real-time automatic management until the business processes of all processed, providing full article information for staff, help employees master the goods dynamic information is accurate position, so that managers can be timely and accurate understanding of each storage management processes emerging issues and situations, timely fast processing, greatly improve the efficiency and reduce cargo damage worse.

ERP system in the storage management application

Enterprise Resource Planning System refers to a management platform based on information technology and systematic management thinking, which provides decision-making tools for business decision-makers and employees.

The application of ERP system to make the business more convenient out of storage process specification to ensure inventory information is accurate, according to the company's inventory of stock products automatically generate inventory table, so
that the data consistent with the actual. Optimize the allocation of production resources within the enterprise such as procurement, finance, human resources and materials to enable enterprises to achieve the goal of efficient management and achieve maximum economic benefits. ERP is a more integrated and informational internal information management platform for enterprises, all the information and data planning and integration of enterprises to solve the integrated use of multiple platforms to solve the problem of internal control, so that the enterprise warehouse out of the library. Warehousing business management more standardized, more accurate inventory information in the warehouse management, materials, products more secure.

WAREHOUSE MANAGEMENT INFORMATION

System Warehouse Management Information System (WMS) is mainly used to manage goods out of storage, in the library management (type, nature, size, etc.), cargo information management(see Figure 2). WMS system in general can be divided into four modules: storage subsystem, Inventory management system, a database subsystem, data management system.

![Figure 1. Automated warehousing information system building plans.](image)

![Figure 2. WMS system.](image)

**Storage subsystem**

Storage of goods is the storage industry is the most important and important part of one of the key norms warehouse management is to control the good storage of goods.
off. Formulate a reasonable link, the responsibility to the parties, is conducive to the formal management of warehouses, inventory of goods in a timely inventory, the establishment of information systems will be strictly in accordance with each part of the circulation of documents to complete a set of storage operations.

**Outbound subsystem**

A database management system, logistics warehouse management is also an integral part of one, it is primarily the goods bidirectional demand order processing, in terms of the external work is based on customer orders, sorting and distribution of processed goods, is internal need for goods orders statistics, picking out of the library operations. Outbound procedures for information systems are simple and clear, and the mechanized equipment out of the library smooth connection, the library efficient.

**Data management system**

Data management system includes inventory management and data management, used for statistics and sorting analysis of all goods in storage, data management system data redundancy is small, easy to expand, to achieve the sharing of information. Data management system for the convenience of users to provide a concise use of the interface, an increase of system flexibility.

**INFORMATION SYSTEM IN STORAGE MANAGEMENT DEFECTS**

The development of the economic environment has led to the rapid rise of various industries. Enterprise information technology has also rapidly grown in this trend and has become the wisdom of major industries and enterprises. Enterprise warehouse management is also towards information technology development, warehouse management system has been well utilized, but there are still some shortcomings in the process.

**Storage system data connection is poor**

1. Inventory information asymmetry. Enterprise systems are basically fragmented individual systems, between different subsystems more closed, unable to carry out information in-depth communication and information exchange. Companies and various departments, the distributors can’t accurately grasp the inventory, multiple warehouses, and remote warehouse management difficulties.

2. Stock information update is slow. Warehouse management system, the subsystems of information transmission is not timely, the warehouse materials, product deployment work complicated, so that other departments have difficulty in follow-up work. For example, the Purchasing Department, the distribution department can’t know the actual inventory of the company can’t carry out Follow-up work, the effective support for sales work is very difficult.

3. Inventory report is not comprehensive. Report data is not comprehensive enough, the relevant staff inquiries time-consuming and laborious, easily lead to the late or out of date product monitoring and control are not in place, resulting in greater losses. It can’t be based on previous data, develop a reasonable and accurate stock
management strategy. Such non-standard warehouse management has increased the operating costs of the enterprise, leaving the warehouse with potential safety problems and impeding the development of the enterprise.

**System information can’t be integrated and shared Warehousing information management.**

At present, most enterprises only realize systematic management, but they have not realized the true information integration and sharing, it can’t achieve the integration of financial business, and the enterprise data can’t be dynamically controlled in real time. Multiple systems running at the same time can only ensure that a certain part of the operation, the data flow only in its internal part of the link is not close; the information is difficult to share in a timely manner. There are companies rely on manual operation, which is not only difficult to improve work efficiency, but also increased business costs. At the same time, enterprise information can hardly achieve the effect of real-time sharing, and some valuable information can’t be delivered quickly, which leads to the failure of information and seriously hinders the progress of work.

**INFORMATION SYSTEM USED IN WAREHOUSE MANAGEMENT STRATEGIES AND RECOMMENDATIONS**

**Enterprises to implement "visual" management**

Visual management refers to managers using IT information systems to quickly and effectively grasp the basis of enterprise production management information, this management is also used for storage management, so that more intuitive storage process, cargo information within the enterprise more visible and transparent, easy to business All departments to better cooperation and communication.

The visual information system provides three-dimensional model maps of the location of the storage area and the location of the storage area. The storage area of each storage area can be marked with a ratio. A certain storage location can be clicked by the mouse. The computer immediately displays all kinds of storage of the storage location. Graphics and data for cross-analysis, data storage changes, and the graphics are timely changes and reflected. For example, the following aspects:

1. **Inventory Warning.** When the inventory reaches the warning line of inventory security, the system will automatically send the alarm information to the manager so that the staff in the warehouse can arrange the delivery in time.

2. **Inventory.** in the warehouse management system to find out the basic information of the goods to inventory, such as the name of the goods, size, quantity, nature and other relevant goods information to develop inventory plan, the inventory information is transmitted to the collector, the management staff enter the data by scanning the bar code of the specified product and upload the system.

3. **Error Management.** During the application of each information system, information management errors may occur. Error handling tools may be installed in the system. For example, if the relevant data of the goods in the warehouse or in the warehouse are not correct, errors occur in each business document, and the system automatically voice prompts.
Enterprise development system scalability

Enterprises in the development of design systems, according to business nature of the enterprise, product features, fully understand the long-term cooperation of the professional needs of customers, customer-focused.

(1) The development of information system should adapt to the actual situation of our enterprise. In the system operation, enterprises should pay attention to the system upgrade, closely follow the business development.

(2) Developers should combine the products of enterprises, the nature of materials, business model for the business tailored to a set of proprietary information systems, and with the help of e-commerce in the era, so that the system has a modest advance, strengthen the system of other value-added services and enhance strategic alliance between the various enterprises.

Enterprises jointly build a cloud storage system

"Cloud Storage" is a new Internet storage system model that connects the back-end ports of various warehouse management information systems of various entities across the country, enabling all warehouse information data to be timely uploaded to the platform. Through the data analysis of various warehouses, the national materials are integrated so that the supply sources, which is well integrated with diversified sources. It mainly relies on scientific and technological information platform to make full use of the entire market and social resources so as to quickly and economically select the ideal warehousing service and promote logistics, business flow, capital flow and information flow to perfection Cohesion.

Enterprise cloud storage solution

For the huge demand of modern logistics and warehousing enterprises, cloud warehousing, with its huge market resources, preferential price and high quality service, will lead the warehousing information system software into a new era of development and solve many warehouse management problems in enterprises.

(1) Lack of Funds. Cloud Storage adopts the dual mode of sales and rental with low fees. For small and medium-sized enterprises, it quickly solves the problem of financial difficulties.

(2) Lack of talent. Training courses, no need to worry about no professional and technical personnel.

(3) Lack of knowledge. Professional technical and implementation team, the use of installation problems are solved.

"Cloud Storage“ implementation conditions

(1) The development of science and technology. The implementation of cloud storage requires the support of science and technology. It needs a background information operation platform that can connect with the national e-commerce logistics enterprises. When the customer orders are issued, the system background can respond quickly and send the order information to the cloud storage platform. The warehouse management center processes the customer's order requirements, picks up the goods and releases the final delivery instructions until they arrive at the customer.
(2) Professional operators. Talent is the basis for the construction of cloud warehousing platform, specialized personnel is the guarantee of smooth operation of the platform, for which enterprises should conduct professional training of relevant personnel to ensure that the cloud platform can play its actual role.

(3) Integrity supervision and operation mechanism and organization. Its main function is to ensure the smooth operation of cloud storage platform, to deal with emergencies that occur in a timely manner, with the actual system to improve and maintain.

(4) The government's strong support. With government support, there is no legal support and guarantee, and the platform will not be set up to carry out major follow-up problems.

"Cloud storage" implementation ideas. Cloud storage to build a smart warehousing system based on Internet of Things, cloud computing, big data, the implementation of this model is as follows.

(1) Consolidate the establishment of physical sub-positions around to complete the nearest delivery All regions adopt a fully open sub-warehouse management system, and the sub-warehouse covers the area responsible for the day to the next day to achieve the high-efficiency requirements. The distribution of the goods distribution throughout the country, using the nearest delivery principles.

(2) Improve the social market resource information, to achieve the sharing of goods information. Physical sub-warehouse in the country's regional economic centers of the warehouse in the basic information of the goods connected in series, to achieve the full storage of data resources across the country to share information.

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