ABSTRACT

Automated warehouse plays an important role in modern logistics park and automation production, and scholars at home and abroad are studying how to apply logistics in modern enterprises; This is also the hot issue of current research; The study of this problem has certain practical significance. The research idea of this paper is: with the aid of big data tools, the paper analyzes the problems existing in the application of warehouse in logistics enterprises, and finds out the crux of the problem. Using a lot of data to guide practice, establish computer information system; Using literature method, qualitative and quantitative combination, empirical method, establish mathematical model, bring useful data into the model, so as to push the conclusion. The conclusion is that the big data analysis has certain guiding significance and reference value to the development direction of the application of logistics warehouse.1

KEYWORDS

"Internet plus"; Big data analysis; Logistics; The information system

INTRODUCTION

In the era of big data, many large logistics enterprises have begun to use automated three-dimensional warehouses. Some new problems arise during use; For example, instructions are not coordinated with operations, and so on; Therefore, it is

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very important to analyze and study the application and existing problems of automated stereo warehouse in the era of big data.

AN OVERVIEW OF AUTOMATED STEREO WAREHOUSES

The automated warehouse is a modern warehouse, which is automatically controlled and managed by the computer, and is also called automatic storage and retrieval system. It is a combination of computer electronic database management technology, automation technology, communication technology, electromechanical integration technology as one of the diversified integrated system. The automatic three-dimensional warehouse system consists of three systems, namely, inventory movement management system, out of system, management and monitoring system [1], composed of roadway stacker crane, high-rise stereo rack, ground handling machinery and other hardware equipment, as well as monitoring system and computer management [2]. The automated warehouse uses an advanced automatic control system to realize the automatic storage and issue management of goods in the warehouse. Not only can ensure the goods in the warehouse, according to the requirements of the automated out-of-warehousing, but also can and other parts of the warehouse management to carry out an organic and connected, and through the blessing of computer technology to achieve automated sorting of goods, making the three-dimensional warehouse become an important part of the logistics enterprise operation. Modern automated warehouse uses strip technology to deal with material information, can accurately grasp every detail of logistics, through the processing of computer information, to ensure the accuracy of data. In the era of big data, the development of logistics warehouse can use big data to analyze the issue and receipt of logistics materials. Thus to guide the enterprise production and management, how to develop and the prospects for development.

THE APPLICATION OF AUTOMATED STEREO WAREHOUSE SYSTEM IN LOGISTICS

The Application of Automated Stereo Warehouse

After obtaining the relevant receipt instruction, each storage unit will intelligently allocate the processing characters to the corresponding locations according to the quantity and distribution of the materials. The job queue and the intelligent optimization module in the system will assign the tasks waiting to be performed in the storage unit to the initial level [3], and the queue optimization module optimizes the tasks according to the optimization objective of the system to improve the efficiency of the storage.
Data Management System of Automated Stereo Warehouse

The mode of multi-level inventory record in the automated storage system is an important part of realizing the intelligent warehouse management. It can realize the periodical inspection and management of the warehouse items, in order to ensure the quantity and quality of the warehouse item in a controllable state \[ 4 \], so that the actual information is consistent with the record information. In addition, after the logistics warehouse cargo inventory work, the system can automatically generate detection reports, convenient for the intuitive presentation of the results, more conducive to the efficient management of goods.

Application of Automated Stereo Warehouse in Material Movement Management

The application of automated warehouse technology in logistics management can make a detailed presentation of the quantity and space of the items in the warehouse. At the same time, it can easily transfer goods between different warehouses, realize the scientific storage of goods according to the uniform rules, ensure the data validity of the warehouse items, and effectively reduce the cost of warehouse management.

Optimization and Management of Automated Three-Dimensional Warehouse

The automation warehouse has the advantages that the ordinary warehouse can't compare, and plays an increasingly important role in modern warehousing. However, in order to give full play to the role of automatic three-dimensional warehouse, reasonable position optimization and appropriate management methods are needed.

A Proper Division of The Goods

In order to improve the efficiency of the automated warehouse, we should make a reasonable and reasonable division of the goods in storage. Storage can be classified according to the type, quantity, size, weight and size of the goods; Some of the goods themselves are corrosive and volatile, and should be stored away from the perishable articles; A large number of commodities divided into large areas and small quantities of commodities divided into small areas; Small volume, light weight goods on the top of the shelf space, large and heavy goods at the bottom, near the delivery point, convenient pick up time, pick up the province, and more security; Long-swing goods are kept away from the purchase and delivery areas as far as possible, as this type of goods has been placed for a long time, leaving the most favorable location for regular and accessible goods and improving productivity.
These simple and common goods planning methods greatly enhance the efficiency of the use of automated warehouse.

**Strategies For Storage of Goods**

If the storage strategy is good, it can greatly reduce the distance of goods and exports, reduce the time of transporting goods, and can save the space of goods storage. The most common storage policies are the following: First, the location and storage of the goods. In the automated warehouse, separate regions for each category of goods are divided, and ensure that the regional division can meet the maximum quantity of storage required for the goods, and that goods are strictly prohibited to be stored elsewhere, corresponding to the serial number of the warehouse at the time of purchase. Second, random storage of goods. Random access goods to the automatic warehouse, through the automatic control device, automatically place the goods in their most advantageous position. Third, random storage of goods. Each product will have a lot of series and models, first according to the main category of commodity storage, in the planning of all kinds of products in the region, all types of such products are randomly assigned.

**Optimization of The Calculation Method of Goods Receipt And Storage**

The automated warehouse management must do well the warehousing calculation of goods, and can use the big data search engine optimization method to find the best storage scheme; Then write the detailed input procedures, strictly according to this calculation method. First, adopt the principle of advanced first. Adopt the advanced first principle in the storage of goods to ensure that the goods can be delivered within the period of validity. Second, the principle of average load. According to the calculation results of big data, for each stacker crane to set daily workload, in the extraction of import and export goods, according to the sorting, orderly carry out corresponding work, to prevent stacker crane overload situation occurs, so as to reduce the use life of the stacker crane, resulting in waste of funds. Third, the principle of using the shortest route. Using the results of big data, find the shortest route plan of the stacker, after the scheme is determined, on the stacker, take the first close, then the way below, so that the stacker can take the goods in the shortest time. Fourth, optimize the order of goods in and out of the warehouse. According to the big data results, the controller is installed on the stacker. The purpose is to improve the speed of storage and extraction of goods in automated warehouse, and can set up multiple stacking machines at the same time, and the stacking machine can work in an orderly way.
Dispatching Optimization of Automatic Warehouse In And Out of The Goods

Managers can use big data methods to find the best management points in and out of the time and space.

DEVELOPMENT TREND OF AUTOMATED THREE-DIMENSIONAL WAREHOUSE

The Degree of Automation is Continuously Improving

According to big data, to some important varieties, first the warehouse, to ensure the delivery of the task on schedule; In addition, the automated warehouse as an important part of the computer system network, plays an important role in the production chain, and will inevitably become the development trend of the future production industry.

Integrate More Closely With Process Flow

Automated warehouse management system can effective to each process of the production process was closely unifies in together, in the era of "Internet +", through data analysis, to modify process data, and through the computer programming technology, make the operation more convenient.

Diversification of Storage Materials

The emergence of the three-dimensional warehouse has changed the traditional warehouse mode, which can take advantage of the vertical space of the warehouse. The storage of more materials, using big data, the raw materials of different specifications, arranged by time nodes; For example, 5 meters of steel plate, 10 tons of steel tubes and other large parts and small parts have special storage space to improve the efficiency of storage space.

Improve The Utility, Safety And Noise Reduction Ability of The Warehouse Operation

The automation control system generally adopts high reliability hardware and software to improve anti-jamming ability. In the aspect of safety facilities, automatic sensing alarm device is adopted, and the fire-resisting layer on the shelves can maximize the safety of materials. Low noise wheels and drive components are used to reduce noise in equipment such as stacker, etc.
Accelerate The Correction of The Problem

In the process of networked systems, the system is in an unstable state at the very beginning, often with some mistakes. To avoid this type of disruption, a repeater can be added next to the device, so that when the signal is interrupted, it can continue.

THE FUTURE PROSPECT OF AUTOMATED THREE-DIMENSIONAL WAREHOUSE IN THE ERA OF BIG DATA

Automated stereoscopic warehouse system compared with the ordinary warehouse, covers an area of high operation efficiency, saving inventory, greatly increase the utilization rate of the warehouse, the automatic allocation and management by using the computer can help realize the modernization of logistics warehouse management. Along with the advance of science and technology, the development of enterprises is becoming more and more large-scale, intensive degree, in the future development of the enterprise, logistics automation system will continue to update and reform project, meet with the different needs of the logistics industry. Automated three-dimensional warehouse is a collection automation, intelligent, Integration, information becomes one of the stereoscopic warehouse, in the era of big data, the market will be more widely used, its position in the logistics system will improve with the enlargement of the scope of application, the future market value is immeasurable.

REFERENCES

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