

Development Analysis of Intelligent Cloud Warehouse based on Big Data

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Abstract

In recent years, with the rapid development of Computer Internet, the Internet applications emerge one after another, in which the research on intelligent logistics has become e-commerce platform, express delivery company's Development Must, intelligent cloud warehouse emerged. In this paper, the development background and basic model of intelligent warehouse are introduced, and compared with the traditional warehouse. At the same time, the advantages and disadvantages of intelligent warehouse are presented.

Keywords

Internet Applications; Intelligent Silo; Intelligent Logistics; E-commerce Platform; Current Development.

1. Introduction

With the popularization of the Internet and the progress of technology, various forms of network applications have emerged, and the field of internet applications has been expanding. The application of the Internet has developed from the early information browsing, e-mail to the network entertainment, information acquisition, communication, business transactions, government services and other diversified applications. With the increasing scale and popularity of Internet users, the field of Internet application is also expanding, the network technology is also improving, with the emergence of the Internet industry.

In recent years, with the rapid development of E-commerce, the number of B2B and B2C e-commerce enterprises has increased gradually, but the surge of orders and customer demands can not be absorbed by traditional warehousing, at the same time, the time-effect cost of the traditional warehouse and other factors seriously reduce the profit space of enterprises, transformation and upgrading is inevitable.

2. Basic meaning and mode

Cloud warehouse is a kind of logistics storage, but it is different from the traditional warehouse and e-commerce warehouse. Secondly, the concept of "cloud" in cloud warehouse comes from cloud computing. The "cloud" in cloud warehouse refers to the network cloud, so cloud warehouse uses cloud computing and modern management methods, rely on storage facilities for the logistics of goods circulation of the new warehousing system products. The mode of cloud warehouse is to set up sub-warehouse, information sharing, sub-warehouse for the cloud, to achieve rapid response of the distribution network. It will not only distribute the inventory according to the data, it has strong automatic order fulfillment ability, but also can automatically allocate the whole channel inventory according to the owner, and carry on the centralization and optimization to the inventory, for example: the supplier will distribute the goods to the cloud warehouse management nearby, cloud computing service centers virtualize goods, centrally manage scheduling, share resources with other warehouses, and distribute orders among warehouses on demand according to big data order statistics, and consumers'orders are distributed nearby, when the warehouse goods can not meet the needs of consumer orders, will be distributed between the warehouses to meet consumer demand. All the

resources are encapsulated as services, which are provided to the demanders transparently, dynamically and intelligently on the network cloud warehouse platform.

3. Analysis of existing types of cloud storage

Cloud warehouse mainly has the types of e-commerce platform, logistics express delivery, internet-based third-party storage cloud warehouse, etc. . The first two types provide cloud warehouse services directly to businesses, the internet-based third-party Warehouse Cloud Warehouse is committed to cloud warehouse supply chain solutions. At present, cloud warehouse can be divided into three types: commerce platform type open cloud warehouse, such as Harvard, Jidong Cloud Warehouse, Ali Rookie Cloud Warehouse, logistics delivery self-built Cloud Warehouse Shunfeng Cloud Warehouse, Baishi Cloud Warehouse, home delivery, House cloud warehouse, Tian Tian Yun warehouse, etc. The third-party storage provider has set up cloud warehouse, such as harvard-connected Warehouse, iot-cloud warehouse, etc.

4. Compared to conventional storage

4.1 Technical Distinction:

Cloud warehouse has a cloud, it should have cloud technology, this can use the network disk age as an example, the early specialized enterprises such as 115 network disk, their capacity is several hundred meters, Baidu cloud after coming out is several t, the capacity is big, the transmission speed is fast, easier to share. So the cloud warehouse should also be so reasonable, data transmission faster, faster data processing, daily processing orders to larger, more convenient system docking, this is a difference;

4.2 The Difference Between Business Models:

The cloud in the cloud warehouse is floating in the sky, if the warehouse is on the ground, isn't it a bit like O2O mode, the combination of online and offline; while the traditional warehouse is more concerned with how big the warehouse is, and of course the O2O mode has to work, personally, I think this cloud should contain a lot of content, not only the data in WMS system, but also the information of the whole supply chain, such as business flow, information flow, capital flow, etc.

4.3 The difference in product thinking:

Traditional Warehouse and cloud warehouse can be regarded as two different products, these two products operation thinking is different, cloud warehouse more Internet thinking: For example, many customers don't know what traditional warehouse does, but know cloud warehouse this thing, this is one of the reasons why people use cloud storage to promote themselves; for example, eleven is all about picking efficiency for their first order, the customers in the library do not pay attention to the place with the data show;

4.4 Management Model:

When the technology is different, the business model is different, and the product thinking is different, there will be some changes in the management style, to adapt to the new technology, new model, New Thinking; for example, the cloud technology is very powerful, then the up and down strategy, picking Path calculation is certainly more accurate, warehouse operation system is more convenient, so in operation and management can be more dependent on technology, prior experience and proficiency may be required.

5. Advantages of the development of intelligent cloud storage

Fast Aging: The distribution and warehouse in the vicinity of the integration of the transfer time to save the deployment

Low Cost: stock up in advance and share with sub-warehouse, reduce inventory cost and transportation cost, reduce management cost and improve management efficiency

Management Intelligence: Automates order fulfillment, inventory sharing and big data demand forecasting, intelligently matching optimal shipping routes

Experience Upgrade: Reduce Logistics links, reduce the rate of damage, improve transport speed, distribution time, consumer service experience optimization.

It can be seen that intelligent warehouse can solve all kinds of storage problems caused by the complexity of management and operation, and can promote the future development of enterprises, and win a great victory in the fierce market competition.

6. Current Status of development

Storage is the core of logistics. The layout of storage represents the layout of supply chain, which determines the efficiency and availability of order fulfillment. Judging from the development course of warehousing and logistics industry, at present, China's logistics warehousing can be divided into five stages: manual warehousing logistics, mechanized warehousing logistics, automated warehousing logistics, Integrated Automated Warehousing Logistics and intelligent automated warehousing logistics. At present, China's warehousing and logistics industry is in the stage of automation and integration automation, such as:

6.1 E-commerce platform

Such as tmall, Jd.com, suning TESCO platform through big data analysis, the national step warehouse, shorten the delivery time, improve customer experience. Platform through the national regional distribution warehouse, coordinated storage, the use of platform big data analysis, to achieve overall efficiency, improve customer experience.

6.2 Express delivery

Such as Shunfeng, Yunda, Zhongtong, Yantong and so on have established their own cloud warehouse system, grafting the original transport advantage to customers to improve the quality of integrated service. Express Delivery Company by virtue of its own network sound, strong distribution ability and other advantages for cloud warehouse layout, warehouse-dry-efficient combination of distribution network.

The following is a survey of existing cloud warehouses:

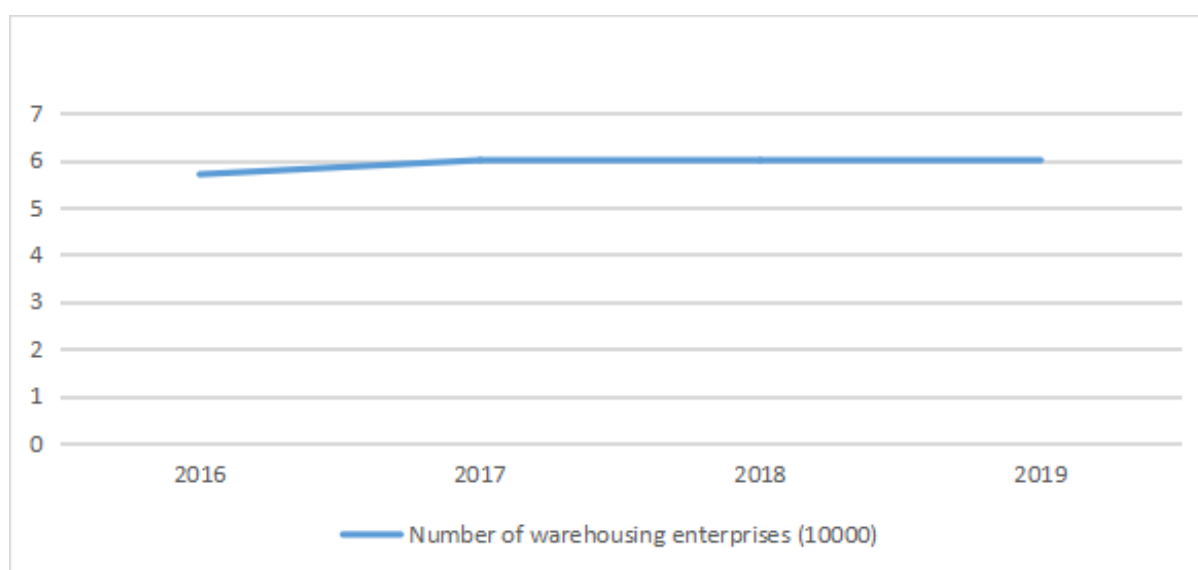


Figure 1. A survey of existing cloud warehouse

The number of intelligent storage enterprises has increased from less than 20,000 in 2010 to 60,200 by 2019. In 10 years, the number of storage enterprises has increased by 201% .

7. The Short Board of Development

Construction Cost: First of all, it is necessary to build a network for the main cities in the country, and secondly, it needs a large amount of capital investment to realize the functions of demand forecasting, intelligent matching and production control

Payback Period: Sub-warehouse construction, system research and development, testing cloud warehouse POCI cycle is longer, there is the risk of capital fracture

Technical Level: The application of smart cloud warehouse requires more technical personnel, and the maintenance process in cloud warehouse needs more complex technology, and the current cloud warehouse technology is not mature.

Security Issues: The application of smart cloud warehouse needs to protect and manage the system data, at the same time, it can not divulge the user's personal data message and give a good impression to the consumer.

Management Defects: Not Conducive to standardization and refinement of management.

Oversupply of resources: large-scale Cloud Warehouse Easy to cause oversupply of resources.

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