

Design and Implementation of Maritime Transportation Work Management System

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Abstract: With the frequent flow of materials and rapid economic development in various countries, the management system of maritime transport has become an important factor in economic development and material flow. Therefore, it plays an increasingly important role in the context of globalization. Maritime transport management system originated from the background of globalization of trade and finance. It plays an important role in the circulation and turnover of commodities and plays an active role in promoting the economic development of a country or region. In this paper, the design and implementation of the management system for maritime transport are analyzed in depth, and the system platform, related systems and the detailed process of system development are elaborated.

1. Introduction

Maritime transport management system has an important impact on the development of a region or a country. However, due to the influence of traditional management concepts and modes, people are vulnerable to external factors in the management of maritime transport work, and there will be many emergencies. These emergencies lead to the port operation cannot be carried out smoothly, but also lead to some potential safety hazards. Relevant departments and staff should strengthen the design and implementation of the management system of maritime transport, and adopt the management information system of cargo transport business to ensure the integrity and consistency of cargo management data. Only in this way can we improve the efficiency of port operation, standardize and digitalize the whole cargo management, and speed up the circulation of commodities, reduce the sailing time of ships, improve the efficiency of cargo handling, thereby improving the efficiency of production operations and international competitiveness.

2. Necessity of Design and Implementation of Maritime Transportation Work Management System

With the rapid development of science and technology and reform and opening up in China, material and technology flow each other, China's social and economic structure is also constantly optimizing. With the frequent flow of materials and rapid economic development in various countries, the port industry has developed rapidly. These factors not only promote the rapid development of society and national economy, but also put forward higher requirements for the management of maritime transport work. It also cultivates a large number of global enterprises. These enterprises have global distribution, seek cooperation opportunities through economic networks, and achieve innovation in production, transportation and information management. Maritime transport management system is an important factor in economic development and material flow, playing an increasingly important role in the context of globalization. The development of a country cannot be separated from the role of transport industry, which has a positive role in promoting the economic development of a country or region. The continuous expansion of international capital market and open management have promoted the emergence of a large number of global enterprises, and the gradual improvement of management system has further promoted the emergence of the global transport industry [1].

The core and foundation of the development of transport industry is the management of maritime

transport work, which is directly related to the development of global enterprises in China. The major financial markets in the world connect and transform with each other in time and space. Transportation and foreign exchange markets have become the most promising markets in the world, creating favorable conditions for the development of global enterprises. At present, the production scale of transportation industry in China is becoming more and more automated and high-speed. The scientific revolution marked by the Internet has narrowed the distance between countries and regions in space and time. The function and performance index of electronic control system are also getting higher and higher. Port equipment is developing towards large-scale and automation. Logistics process management will become an important part of global enterprise management. [2]

3. Demand Analysis of Maritime Transportation Work Management System

With the rapid development of China's social economy, logistics is an indispensable part of people's daily life and social production. Under the current background, its role and influence are increasingly important. In order to further develop their own customer resources and compete for market share, the branch skillfully handles transportation business for customers. Global enterprises are an important guarantee for China's economic and social development and an important pillar of national economic development. Their management system is closely related to all aspects of national and social development. Under the background of economic globalization and electronic informationization, enterprises and transport companies can obtain the routes, schedules and cargo unloading situation of cargo ships, and then estimate and evaluate the cargo based on their own years of operating experience, which lays a good foundation for business processing in peacetime. For the demand analysis of maritime transport work management system, we mainly through the business introduction of enterprises and the demand analysis of the system, combined with the development trend and characteristics of the current era, make a comprehensive analysis and investigation of the outline design and detailed design, summarize the characteristics of maritime transport work management system, and further solve the practical problems and the establishment of maritime transport work management system. Think twice. Transportation enterprises play a vital role and influence in social production and life. Material resources have become an important means for enterprises to reduce operating costs and improve economic efficiency.

First, business process analysis. After years of development, the transportation industry has gradually matured, but there are still many problems in the existing international secondary logistics distribution, such as the low level of logistics information, the backward management system of maritime transport work, the serious lag of logistics dispatch and the unreasonable vehicle allocation, which seriously hinder the sustainable development of the transportation industry. Therefore, the analysis of the design of maritime transport management system is a problem that enterprises must face at present. Next, we introduce some decomposed business processes from several aspects, such as space reservation, unloading, request and cargo decomposition, so as to put forward the requirements of maritime transport work management system. Firstly, the company needs to sign a contract with the shipping company to connect the financial system of the enterprise with the integrated banking business system through the Internet or special line. Then, according to the past transportation situation, the container space is reserved to the shipping company in advance, and the customers apply for the space reservation to the company according to their own conditions. Without special login to the online bank, the enterprise can use its own financial system to independently complete the functions of inquiry and transfer of its bank account, including the data of the branch. [4]

In addition, the company conducts corresponding audits on the applications submitted by customers, sends confirmation information to the shipping company on the requests for audits, and recommends that banks review the accounts or financial status of customers. After receiving the bill, the company mails it to the customer and fills in the relevant goods information according to the request of the customer. After the shipping company transports the goods to the destination, it transfers the receipt to the company. Finally, the customer withdraws the goods according to the bill of lading, and the company pays the shipping company the corresponding freight according to the

contract. The whole business process is simple and fast, which improves the work efficiency. It not only ensures the consistency of account information between the financial system and the integrated banking business system, but also promotes the friendly cooperative relationship between the enterprise, the customer and the shipping company, and speeds up the work.

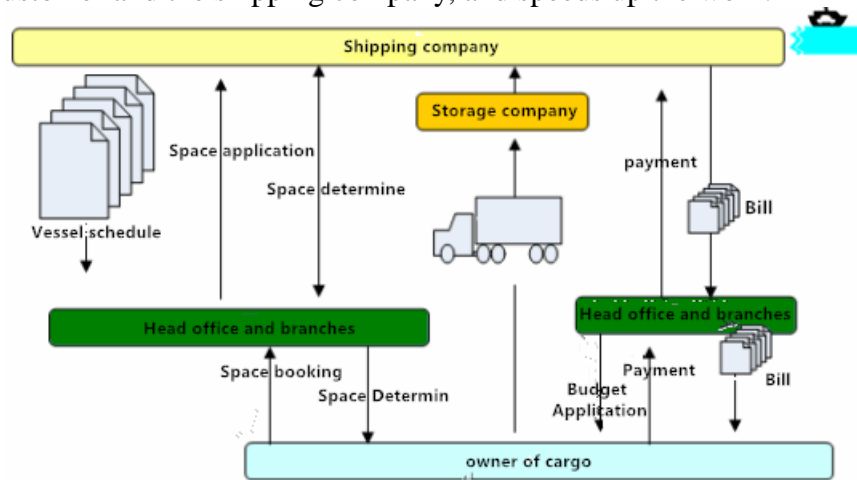


Figure 1 Business flow chart (delivery)

Secondly, the overall use case model is established. With the rapid development and continuous improvement of science and technology and information technology, we have entered the information age. Cloud computing is a historical change that the information technology industry is experiencing in the current era. Nowadays, cloud computing technology is indispensable to our study, life and work. We need to use cloud computing technology to extract the participants in the system and establish the use case model of the maritime transport work management system according to different roles.

At present, the networking, socialization and global economic integration of information are greatly affected by cloud computing network technology. Of course, the design of maritime transport work management system is also inseparable from cloud computing technology, use case model according to our needs, and as an important data source for the functional design of maritime transport work management system.

With the help of local area network related equipment and technical advantages, the participants in the system, customers, company personnel, debt system, maritime bill issuing system, customs system and business system are comprehensively analyzed. The data information inside the equipment is logically analyzed and integrated, and the route information is input into the maritime transport work management by the head office personnel instead of the shipping company. Management system. There are also great differences in the application of the management system of maritime transport among the participants. The head office can be divided into management department, business department and finance department. The functions that can be operated include contract management, cargo basic information management and space management. The functions that the Finance Department can operate include fee application management, payment management and related review management.

Finally, non-functional requirements analysis. With the continuous development and penetration of economic globalization and information technology, logistics information technology has been widely used in work and even in all walks of life. Cargo transportation is a comprehensive and complex process. Due to the constraints of various conditions and the influence of external factors, it has higher requirements for the comprehensive ability of relevant personnel, and the management of maritime transport work. The system requirements are also relatively high. The non-functional requirements of software products are very important, which greatly affect the realization of functional requirements and the proportion of sales of the products, and also determine the market prospects of the products. Non-functional requirements of software products include system performance, reliability and stability of operation, as well as post-maintenance and scalability

interests. Because the current logistics service network needs further integration, the application of information technology and other advanced computer technology in shipping enterprises is relatively small. Generally speaking, the application of computer is limited to office automation and daily things processing. Most shipping enterprises cannot fully apply logistics information technology. In addition, the maritime transport work management system is mainly published on the Internet and used by various companies and subsidiaries. In the practice of logistics and distribution, it does not make full use of the advantages of information technology. Its operational efficiency, security, reliability and scalability are insufficient. The corresponding equipment is relatively backward, and it does not have the ability to use modern information technology to process information. Therefore, for the design of maritime transport work management system, we need to start from the aspects of system operation efficiency, system safety and reliability, system scalability and maintainability.

4. Design and Implementation of Maritime Transportation Work Management System

The design information platform of maritime transport work management system based on cloud computing technology is mainly divided into platform layer, application layer, virtualization layer and infrastructure layer. Each layer has different service functions. This cargo management information system is based on LAN network, including one server and three client workstations, two remote client workstations and two switches. The design of maritime transport work management system is a relatively complex and systematic process. It mainly divides the calculation, storage, analysis and processing into distinct parts. Through virtualization technology, the huge data resources are divided into one resource layer of the system. The three workstations are set up as leadership query, cargo business processing and financial statement query system [8].

The two remote workstations are set up in Dalian Port and Yingkou Port respectively. They are connected with LAN through PSIN dial-up and then combined by server nodes. For the operation of the whole platform system, on the virtual machine assigned by the cloud management system, data transmission and exchange are carried out with the headquarters separately, and cargo transportation processing is completed at the same time. Physical servers are connected with various hierarchical systems, and basic information such as cargo delivery, cargo transshipment and transportation costs are input into the system, so as to ensure physical resources and application layers. The cohesive relationship between them. The server side chooses Windows 2000 Server as the network operating system to realize the equal exchange of information and data within each device. Under the virtual environment, each system can operate efficiently and safely. It opens up a subdirectory dedicated to the storage of data tables. It mainly confirms the user name and password of the system operator, and provides users with their required points through the delivery mode. Matched computing, storage and application capabilities. For the data entry module, the main task is to input the new data into the maritime transport management system. Users access the cloud platform through the network, and update the basic information such as cargo delivery, cargo transshipment and port charges. Customers can query or use the data information without the limitation of time and space.

5. Conclusion

In summary, with the rapid development and continuous improvement of science and technology and information technology, there are more and more management models in the context of Internet finance in China. The traditional logistics transportation management mode has been unable to meet the needs of social development. Therefore, it is necessary for us to design and implement the freight transport business management information system to ensure the accuracy and completeness of freight management data, so as to make the whole freight management standardized and informationized. This paper comprehensively analyses the design and implementation of maritime transport management system from various angles and levels, hoping to provide help to the relevant personnel.

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