

Research on Platform Cloud Service Based on Service Delivery Innovation

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Abstract

How to effectively transfer services from platform providers to user receivers has become an increasingly important topic. The ability of service delivery affects the delivery of services effectively to customers through the platform service provider. "Effective" is effective and efficient, and can correctly deliver the right service. The ability of service delivery is influenced by many factors. This article is to explore the planning of cloud service for logistics information platform based on service delivery innovation under the background of cloud computing. Based on the platform cloud service target based on service delivery innovation, the platform cloud service architecture model is constructed, and the platform cloud service process based on service delivery innovation is designed to solve the problems of poor timeliness and low specialization of logistics service. It improves the information level of traditional logistics information platform, and improves the transparency and visibility of logistics services.

Keywords

Logistics resources, information platform, service delivery, cloud service.

1. Introduction

1.1 Research Status of Logistics Information Platform

The research on logistics information platform abroad mainly focuses on the concept of logistics information platform, the function of logistics information platform and the current situation of development.

With regard to the research on the development of logistics information platform, developed country logistics has formed a modern logistics technology pattern with information technology as the core, with transportation technology, distribution technology, automatic storage technology, inventory control technology and packaging technology and so on, and set up corresponding logistics information platform. The US freight real-time information system is an Internet based system. By integrating a large number of information resources such as the position and state of the goods, the system provides information for the logistics users for the reservation service, the goods tracking, the delivery of information confirmation and so on. Singapore's freight information platform plays a role in simplifying and integrating complex processes for global freight transport and tracking. To provide users with real-time and detailed logistics information of port and shipping, reduce the cost of logistics information and transaction costs, improve the efficiency of logistics service and the competitiveness of the logistics enterprises.

1.2 Research Status of Service Delivery System

Service delivery system can be described by a visual graph, and service design can be done, that is, service delivery system can be represented by service blueprint. The service blueprint, also known as the service process, is a visual technology that effectively describes the service delivery process. It is a schematic diagram that covers the whole process of the service delivery process. The service delivery system of an enterprise can be divided into two parts: the foreground area and the backstage area. The foreground area refers to the area directly contacting with the customer, while the background area refers to the area which does not contact with the customers, but only provides indirect services. Designing an efficient process is the goal of backstage work. Sometimes, the critical execution time for determining the key elements of the service effect should also be determined by a standard execution time. The competitive orientation of enterprise service delivery system is accomplished by measuring the complexity and diversity of system structure differences. The enterprise design service delivery system should involve the location, the more effective design and layout of the customer and the workflow, the working procedures and content of the service staff, the quality assurance measures, the degree of customer participation, the selection of the equipment, and the sufficient capacity of the service production, and under the condition that the conditions are allowed, After the service delivery system starts running, it needs to be constantly revised to achieve the benign operation of the system. In order to meet the customer's diversified demand for service and the high benefit brought by the industrialization method, some scholars have proposed the technology core separation service design method, which divides the service system into the high contact and low contact part of the customer, namely the front field and the rear field, and the design method of industrialization in the rear field. Making full use of the advantages of modern technology, in the front stage, we should adopt a customer centered design method, so as to raise the standard of service and efficiency of service. We should advocate customer centered and frontcourt oriented service, that is, serving the customers as the center.

2. Function of Logistics Information Platform

Analysis of the traditional integrated logistics information platform, the overall structure can be divided into the following levels:

It is divided into 5 parts: Construction and operation guarantee system, infrastructure, data resources, application and portal.

(1) The construction and operation guarantee system layer

It includes information security assurance system, standard and standard guarantee system, and construction and operation guarantee system. The information security system adopts technology, authority management and management system to ensure the security of the system information, and the standard and the basic requirements of the standard specification guarantee system.^[1] It is to ensure the compatibility of the whole network. In the construction of infrastructure and service, the system frame, data format, transmission protocol, user interface and so on are used. Standardization and standardization is the basis for the smooth development of business work; construction and operation guarantee system is a guarantee system based on the construction mode and operation mode, including the implementation of platform deployment, organizational responsibility, operation management and maintenance, emergency response and so on.

(2) Infrastructure layer

This layer is the infrastructure resources to ensure the operation of the logistics information platform. It mainly includes all kinds of systems, hardware and software, servers, data storage facilities, network equipment and security equipment. The software and hardware of the system provide the basic support of the hardware platform and the support of the software platform for the operation of the application system; the network environment is the basic condition for carrying the data transmission and exchange,

including the basic communication network, the network equipment, the network security equipment and so on.

(3) Data resource layer

It is based on data integration in the business system through resource integration and exchange. Through the classification and organization of logistics information resources, the unified construction standards and data exchange standards are adopted to ensure the smooth exchange of information resources in the collection, processing, transmission and the analysis and sharing of the whole process, so as to achieve the goal of knowledge management and decision support.^[2] On the basis of in-depth analysis of all kinds of data, the basic database, application database and shared database are built with clear classification, unified standard and accurate consistency.

(4) Application layer

The main function is to meet the needs of all aspects of the platform. First, we should analyze the demand of the platform deeply; then integrate, design and develop the business application system, in order to reduce the cost of the social logistics, improve the satisfaction of customer service, and make the government better formulate relevant policies for data support. At present, the application of long transportation logistics information platform mainly includes logistics transaction, electronic purchase, logistics information inquiry, vehicle rescue and maintenance service, vehicle positioning and cargo tracking, and government supervision and so on.

(5) The portal layer

It includes portal, call center, mobile terminal, electronic magazine and so on. It is a unified service window for logistics enterprises, business enterprises, government related departments and other users. It directly reflects the construction results and application results of the platform. The portal provides a virtual service platform for users with a unified style and friendly interface. It realizes the comprehensive integration and centralized display of the interface and function of various application systems. It provides the users with comprehensive information service applications on the integrated platform, and shows them intuitively in a variety of views so as to facilitate the use of all kinds of users.

3. Influence of Cloud Service on Logistics Information Platform

In the cloud computing environment, the development direction of logistics information platform is networking and intelligence. Cloud computing is a computing model based on the network. Cloud services are shared logistics resources implemented on the basis of cloud computing, responding to the changing requirements of the platform users. And the wisdom is that the cloud logistics service is an advanced stage which is further developed on the basis of integrated and flexible.^[3] It has the ability to perceive the logistics information resources, the ability to match the customer's needs and the ability of intelligent optimization of the service process, so that the information system is upgraded to a flexible, integrated and knowledgeable system. A comprehensive intelligent system of intelligence.

3.1 Integration Model of Platform Service Innovation Elements Caused by Cloud Computing

With the introduction of cloud computing technology, the influence of cloud computing technology on the sharing service of logistics information platform is increasing. The logistics information platform is innovating asymptotically from service delivery, which provides the foundation for platform cloud service innovation. Logistics information platform cloud service innovation is a systematic project, and it is also a gradual process.^[4] Through the collection and processing of logistics resources, the service can be delivered to users to meet their needs, thus forming a new service logic. This logical relationship is dynamic, based on big data and needs oriented service process. The logistics information platform provides the cloud service by obtaining the multi-channel logistics resources from the relevant government departments, logistics enterprises and customers, digging deeper and deeper potential and valuable information, providing decision-making service for customers. It has rapid response ability in the face of changes in the market and the needs of customers. Technology

intensification reduces service costs and continuously optimizes platform service processes, further enhancing the platform's ability to provide intelligent services. The impact of cloud computing on platform service delivery factors is shown in Figure 1.

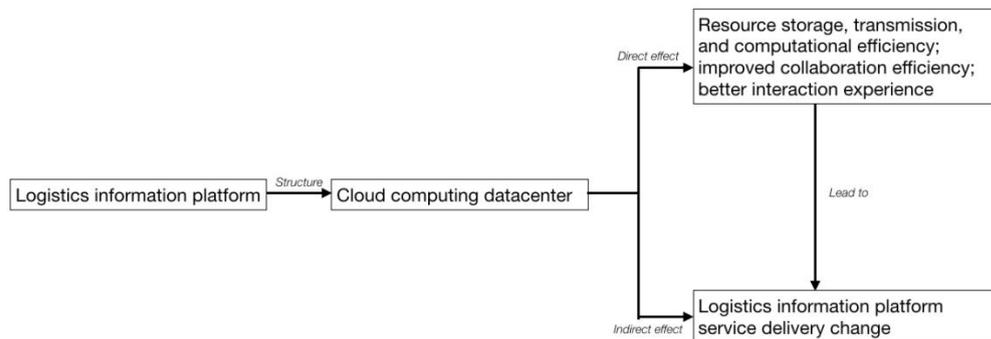


Figure 1. Impact of cloud computing on platform service delivery factors

Service delivery system refers to the kernel of service organization. Service delivery system refers to how service organizations transfer services from the background of the organization to the front desk and provide a comprehensive system to the customers. The connotation of the service delivery system is the operation and management process of the service organization. From its component part, the service delivery system includes the hardware element system and the software element system, the hardware element is the tangible part of the service delivery system, which mainly includes the service facilities, the layout, the technology and the equipment used, and the software elements are the invisible parts of the service delivery system, mainly including the service delivery process. The job training of employees and the description of the role of employees and customers in service.

The service delivery system must satisfy the consumers to the greatest extent, at the same time, it can effectively improve the operation efficiency of the service organization and control the operation cost. The concept of many services can be emulated by competitors, but a reasonable service delivery system can not be simply copied. Therefore, service delivery system becomes a barrier to potential competitors and becomes the core competitive advantage of service organizations.

3.2 Platform Cloud Service Target Based on Service Delivery Innovation

Cloud service based on service delivery innovation refers to the efficiency of improving the service delivery and delivery of logistics information platform by adjusting and changing the process of both technology and service development in support of the network environment and cloud computing technology, in order to support the development of the platform and to provide new services. [5]And effect, to customize and provide efficient, flexible, variable, safe, quality and cheap personalized logistics services for customers. The purpose is to realize the sharing and use of logistics resources, logistics capability and logistics information, and use cloud computing technology to store, filter, match and combine logistics resources into platform cloud service pool, and provide efficient and high-quality intelligent logistics service for users.

The target of platform cloud service based on service delivery innovation is: first, it provides a large number of logistics information services for the platform users relying on modern information technology and network technology, and provides accurate service for users through rapid service matching and selection. Secondly, facing the changes in the market and the needs of customers, the integrated logistics resources are empty. Then, by improving the service flow of the platform and optimizing the organization structure of the platform, the service efficiency and the level of the logistics information platform of Shenglong transportation are satisfied, and the logistics service needs of our province are met in a more rapid and efficient way. Finally, The logistics resources provided by

the logistics information platform of the Dragon transportation are all integrated according to the strategic requirements of regional logistics development, the distribution of regional logistics advantages and so on, forming a logistics information platform with regional characteristics and laying the foundation for the upgrading of regional logistics industry.[6]

The rapid development of information technology, such as cloud computing and Internet of things, has promoted the "cloud environment" of logistics services, and the service content and service delivery mode of the logistics information platform change. In the face of massive information and data resources, the demand for users on the logistics information platform is increasingly complex and personalized, which requires the continuous construction and development of the logistics information platform. Therefore, the service delivery mode of the logistics information platform must evolve from the traditional information service to the integrated and intelligent service direction, and the service innovation is imperative.

The platform cloud service path based on service delivery innovation is a logistics task oriented, user oriented, and a pattern of distribution and use of the on-demand resources between dynamic changing needs and cloud services. Integration of cloud computing, modern logistics network, Internet of things and other technologies, through the logistics resources to carry on the virtual service, and according to the needs of logistics people to carry out intelligent management and matching services.

3.3 Cloud Service Architecture of Logistics Information Platform

With the support of cloud computing and Internet of things network technology, the logistics resources and logistics capabilities (such as transportation capacity, storage capacity, distribution capability, etc.) are virtualized, and the cloud services are provided to users through the platform. In fact, the process of forming platform cloud services is through the technology of Internet of things, data collection, and so on. The logistics resources are perceived in the logistics facilities and service processes, and then the logistics resources are virtualized to form the platform cloud service. Then the cloud service resource pool is formed by the aggregation, encapsulation and release of the logistics information platform according to certain rules. The service is provided to the customers in the form of cloud service pool; the customer is invoked through the logistics information platform. Cloud services in the cloud service pool, and through the logistics information platform cloud service information sharing and cloud service screening, matching, combination, collaboration to realize the social logistics resource allocation, complete the whole "cloud service" process.

3.4 Platform Cloud Service Flow Design Based on Service Delivery Innovation

Through the introduction of cloud computing technology to the current traditional logistics information platform, the service development operation process and the existing service flow are changed to support the needs of the platform to provide new services and improve the efficiency and effect of the delivery and delivery of the logistics information platform service. Through service delivery innovation, the platform is planned for cloud services, and a platform cloud service architecture model based on service delivery innovation is constructed to optimize the service flow and service efficiency of the logistics information platform.

The logistics information platform takes customer demand as the starting point, and judges whether the integrated logistics resources or service functions of the current platform cloud service resource pool meet the needs in the face of customer needs. If it is not satisfied, on the one hand, the resources can be early-warning and the new service plan can be made. On the other hand, cooperative service can be carried out in the way of cooperation with the logistics information platform in the region or other regions, that is, to absorb the external logistics resources of the platform or to integrate the cross regional logistics resources to satisfy the logistics information platform. The current service needs of the household. If it is satisfied, the logistics information platform will decompose and model the logistics task, divide the logistics task into the logistics sub task, and select, match and combine the cloud logistics service with the logistics information platform cloud service pool or service function,

and make the decision by the three parties of the logistics enterprise, customer and material flow information platform. The bilateral matching of logistics services and logistics tasks and the docking plan of supply and demand. Then, on the basis of service state monitoring and customer relationship management, cloud logistics service docking and transmission is carried out. After completing the docking and transmission of the logistics information platform cloud services, each logistics service effect should be evaluated and feedback to the logistics information platform management department, which can further optimize the platform service flow and the high platform service level. At the same time, the logistics information platform management department will also track the whole process of the cloud logistics service, and save each logistics service into the knowledge base and case base. Through the mining and analysis of the user data, the service transfer and service function are adjusted and changed to improve the customer satisfaction.

(1) Decomposition and modeling of logistics tasks

Logistics service is platform oriented user oriented personalized logistics task demand, and is the result of implementing logistics activities to meet customer needs. Under the logistics information cloud platform, according to the customer needs, the corresponding task model is established for the complex logistics task, and the logistics task model is decomposed into multiple logistics sub tasks. Then it searches and matches the corresponding services in the platform cloud service center.

(2) Matching and selection of cloud logistics service

The decomposed logistics sub task is selected, matched and combined in the cloud service resource pool of the logistics information platform. Through cloud service information sharing, cloud service discovery, cloud service resource composition and service collaboration, the collaborative operation of logistics tasks can be realized.

(3) Docking and transmission of cloud services

The essence of logistics information platform service is to expand the platform's logistics resources and service functions to meet customer needs. Logistics information platform service docking platform portal site provides user registration, logistics resource retrieval, service matching, service status query, service evaluation and feedback and other standardized service processes. In order to ensure the smooth operation of service docking and transmission, we need to monitor the key nodes in the whole process of platform service, so as to control the whole process.

(4) Service effectiveness evaluation and feedback

Evaluate the effect of the platform service regularly, feedback the evaluation results to the platform management department and provide decision-making basis for further optimization of the platform service flow. The platform should establish a user satisfaction survey system and investigate the satisfaction of the platform users through the online and offline questionnaire survey, so as to achieve the improvement and excellence of the platform service cycle. In addition, the platform should pay attention to the planning, implementation, promotion and maintenance of the service case base construction, and timely review and summarize the service process of the platform. The typical service cases of the site should be included in the platform service case base to provide experience and service standards for users and platform services.

4. Mechanism Framework for Realizing Service Delivery and Innovative Cloud Services

The implementation mechanism guarantees the smooth implementation of the logistics information platform service, which is jointly participated by the government departments, logistics enterprises, business enterprises and customers. In order to improve the platform service innovation performance, the platform implementation mechanism is gradually constructed in the process of resource collection, service collaboration, platform docking and service effect feedback.

The cloud service path based on service delivery innovation is to perceive logistics resources in logistics facilities and service processes through cloud computing and Internet of things technology. The logistics resources are virtualized to form platform cloud services, and then aggregated and encapsulated to form a cloud service pool of logistics information platform according to certain rules, and the form of cloud service resource pool is the customer. Provide service. Logistics information platform is essentially a network group. The network structure of the platform consists of government departments, logistics enterprises, industrial and commercial enterprises and customers. Its logistics information platform includes transport resources, warehousing resources, human resources and information resources. When the customer has the service demand, the cloud service in the cloud service pool is invoked through the logistics information platform, and the cloud service is screened, matched and combined to realize the customer's needs. It provides the users with the function services such as vehicle routing optimization, cargo tracking, online transaction, vehicle scheduling monitoring, logistics information query and so on. The platform cloud service based on service delivery innovation promotes the continuity of service process, optimizes the business process of each subsystem of the platform, realizes the visualization of logistics service flow, and increases the transparency of logistics service. In the process of providing "cloud service" in the logistics information platform, through the resource collection mechanism, service cooperation mechanism and platform docking mechanism, it provides guarantee for the smooth implementation of the logistics information platform cloud service path based on service delivery innovation.

(1) The acquisition mechanism of logistics resources

With the smooth running of the logistics information platform and the increasing demand of the user logistics service, the existing logistics resource collection channels can not meet the increasing demand of the logistics resources. Therefore, the platform should actively maintain and expand the access channels for logistics resources, and ensure the acquisition of logistics resources. Logistics information platform logistics resources development steps are as follows: first, consolidate the existing logistics resources collection channels. We should speed up the construction of resource access channels for sub regional platforms in mainland China, fully integrate the logistics resources of logistics information platform, and expand the external gathering channels. Through cooperation with provincial logistics information platform, we can promote the advantages of logistics resources and make full use of external logistics resources.

(2) Logistics resource monitoring mechanism

In order to effectively realize the service function of logistics information platform, we should acquire pertinent logistics resources pertinent. Through the

The dynamic monitoring of the logistics resource status of the platform and timely analysis and adjustment of the logistics resources can achieve the rational layout of the regional logistics origin network. By detecting platform information, we can find out the change of customer demand in time, adjust the integration strategy of logistics resources, and continuously enhance the platform service innovation capability.

(3) The dynamic adjustment mechanism of logistics resources

The logistics resources in the logistics information platform resource pool can be allocated according to the principle of distribution according to the requirement of the cloud computing, and the logistics resources can be adjusted dynamically for the professional sub platform of the regional mainland city and the demand of the customers. For logistics information platform, the platform should expand the scope of logistics resources collection, maximize the logistics resources to the platform, and ensure that all the sub platforms and platform users can get the required logistics resources in time.

5. Summary

This paper chooses service delivery and innovation to carry out service innovation and cloud service planning for logistics information platform. Based on the platform cloud service target based on

service delivery innovation, the platform cloud service architecture model is constructed, and the platform cloud service process based on service delivery innovation is designed to solve the problems of poor timeliness and low specialization of logistics service. It improves the information level of logistics information platform and improves the transparency and visibility of logistics services. Finally, the implementation mechanism of cloud service path based on service delivery innovation is proposed, including resource collection mechanism, service collaboration mechanism and platform docking mechanism to provide guarantee for the smooth implementation of cloud service path of logistics information platform based on service delivery.

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