Research on the Construction of Agricultural Logistics Park Information Platform Facing the Whole Industry Chain

Xiaolan Hu [1,2, a], Hui Liu [1, b], Jingjun Shu [1, c]

[1] School of Business Administration, Wuhan Business University, Wuhan, 430056 China;

[2] Development Research Center of Wuhan Modern Logistic, Wuhan, 430400 China.

[a]171598170@qq.com, [b]x82078233@qq.com, [c]3455602819@qq.com

Abstract. Agricultural logistics parks have a series of functions, such as procurement, production, transportation, circulation, processing, storage, distribution, and distribution of agricultural products, and agglomeration of agricultural-related industries in a certain space. Whether or not an agricultural logistics park has an efficient and reasonable information platform is the key to normal operations. Based on the definition of the agricultural logistics park based on the whole industry chain, this paper analyzes the needs of the information platform of the agricultural logistics park, and then gives an exploration of the plans for constructing the information platform of the agricultural logistics park in terms of user system and functional flow.

Keywords: Agricultural Logistics Park, Information Platform, Construction.

1. Introduction

Agricultural production is inseparable from circulation. With the development of the rural economy and the advancement of urbanization, the demand for agricultural logistics is getting higher and higher. It is under such a background that logistics parks with agriculture as the main service target have emerged throughout China. Although the agricultural logistics park is still in its infancy, various forms of agricultural logistics parks have played an increasingly significant role in the development of agricultural logistics and even the agricultural economy with its strong platform integration capabilities.

2. Definition of Agricultural Logistics Park

There is no strict definition for agricultural logistics parks. Functionally, it can be understood as having a series of functions such as procurement, production, transportation, circulation processing, storage, distribution, distribution, and information of agricultural production materials and agricultural products, and a gathering point for agriculture-related industries and enterprises in a certain space. The research object of this article refers to the agricultural logistics park, which integrates various types of industries, such as the integration of agricultural logistics resources, distribution and distribution of regional agricultural materials, and the gathering and incubation of agricultural logistics derivative production services. It is a modern agricultural economic pilot zone integrating transportation, circulation processing, urban distribution, agricultural product circulation, agricultural trade, and agricultural logistics community. Of course, in reality, the name and role of the agricultural logistics park as a new thing may not be in line with our strict normative concepts. However, from the aspects of its functions, role I. Demand analysis of the construction of logistics information platform for agricultural logistics park based on the whole industry chain positioning, and industrial chain positioning, it is in line with the conditions of the agricultural logistics park, and we regard it as an agricultural logistics park.

3. Demand Analysis of Logistics Information Platform

In the construction of logistics park information platform, foreign logistics developed countries have a lot of successful experiences. For example, the United States integrates the emergency, traffic, and management command systems of the park on one unified large system, which is very convenient

for completion. And has an open interface that can easily integrate other service systems. Enterprise service systems mainly include software service systems, government service systems, and program display systems. Among them, the software service system provides modular software services that can facilitate the management of sales, warehousing, procurement, and supply. At the same time, China's logistics park information platform is also constantly making new breakthroughs in its development. For example, Shanghai Wuchuang Logistics Information Platform (Park) takes the concept of "comprehensive management and regional center" as the core design concept and manages regional logistics at different stages of development. Needs, fully consider the user experience, built tailor-made information solutions, and realize systematic, integrated, and customized information management.

The agricultural industry chain with logistics parks as the basis of organization and platform covers a wide range of services ranging. From pre-production (information guidance in the prenatal stages product planning, seedlings and feed supply, and cooperation of farmers and financial services to the production process) to production (Agricultural supplies, fertilizer supply, field management, technical guidance, etc.) to post-production (the wholesale, retail, transportation and distribution of grade classification, preservation processing, storage processing, food processing, packaging processing, commercial processing, and distribution links Information, restaurant restaurants, agricultural holiday services), and finally to waste recycling. It also includes the production and circulation of rural consumer.

Table 1. Functional Requirements for Information Platform

Development level	Important content	main function
Basic level	Regional Logistics Information Service, Information Hall Display, Parking Capacity Integration, Park Property Management, Distribution Station Logistics Management Services	Regional Logistics Information Service, Information Integration Function
Professional level	Regional logistics information service, Information hall display, Parking capacity integration, Park property management, distribution station logistics management services, Freight management, Freight forwarding business platform, Professional market e-commerce, Market distribution scheduling, Warehouse management	Third-party logistics business or fourth-party logistics management
Advanced level	Regional logistics information service, Information hall display, parking capacity integration, Park property management, distribution station logistics management services ,Freight management, Freight forwarding business platform, Professional market e-commerce, Market distribution scheduling, Warehouse management, Business monitoring, Administration Personnel, Unified settlement, Customer relationship management, Call center system	Comprehensive KPI guidance, Comprehensively improving management tools and service levels

goods and other related services and functions. These services are provided by various business entities or organizations with a large number of different scales. The interaction and cooperation of these enterprises or organizations on the platform of the agricultural logistics park is also a complicated process. Under these circumstances, the requirements for the informationization level will rise accordingly. It is no longer confined to the requirements that used the circulation of agricultural products as the main function. Instead, it focuses on the entire industrial chain and focuses on the construction of "Smart Logistics" System with the Principle of Full-function and Networking of Agricultural Production Area. Overall, the agricultural logistics park information platform mainly covers the following contents and functions.

4. Construction of Logistics Information Platform System

Based on the above needs analysis and the requirements of the whole industry chain service, the construction of the information platform for the agricultural logistics park should at least achieve the following goals. The first is to establish a data collection and interaction platform. Second, the agricultural logistics park control platform can control and optimize logistics business processes in the park. The third is to realize the informatization compatible services of logistics business (procurement, warehousing, distribution, management, etc.). The fourth is to provide value-added services and provide modular services such as corporate websites for enterprises entering the park to achieve more resource sharing and integration.

4.1 Construction of the User Information System for Logistics Information Platform

Under the guidance of the above series of targets, users of the information platform are involved in a wide range. The basic construction system is shown in Figure 1. It includes public information platform(Portals, Public Information Distribution, and Farmers' Member Ports),Business Information Platform(Business process control systems and park logistics node systems such as procurement, warehousing, distribution (including e-commerce), and management entered by the park)and Park Property Information Platform, At the same time, it interacts with government affairs information platform, financial institution information platform, logistics enterprise information platform and agricultural enterprise information platform to achieve the information control of the whole industry chain.

Under the idea of such an information platform system, we can construct the following user composition chart for the agricultural logistics park information platform.

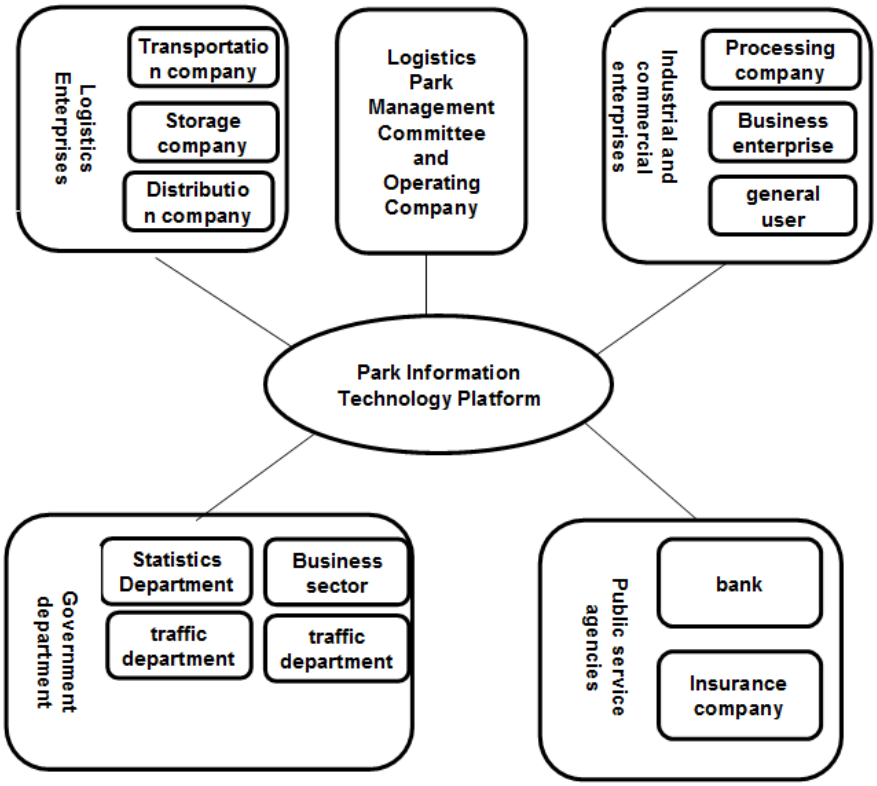

Fig 1. User composition diagram of information platform

As can be seen from Fig. 1, the users of the park's information technology system are mainly divided into five major categories. The functions used by each type of user are different. The following list will describe the requirements of the five types of users on the information platform.

Table 2. User Function Requirements Table

Types	Requirements for Information Technology Systems
Logistics Park Management Committee and Operating Company	■ The park management committee is the supervisor of the park operation, and the operation company is the manager of the park. ■ They complete the management and operation of the daily business of the park through the logistics park information platform, and maintain information exchange with the resident park enterprises through the logistics park information platform to provide related services, management and monitoring to the company.
Logistics Enterprises	■ Logistics companies mainly include transport companies, warehousing companies, and distribution companies that are stationed in logistics parks or use logistics park information platforms. ■ Logistics companies can use information platforms to publish and inquire about relevant logistics information, conduct online service bidding, order execution and tracking, fee settlement and payment, and thus carry out logistics transactions in an efficient and orderly manner. ■ logistics parks are the focus of logistics companies' services. Logistics companies, such as the start and transit of transported goods, storage of goods, distribution of goods, etc., are all completed in the logistics park and require logistics parks to provide relevant management conditions.
Industrial and commercial enterprises	■ Industrial and commercial enterprises include manufacturing enterprises, commercial enterprises and ordinary users. Manufacturing enterprises are located at the starting point or intermediate node of the supply chain. The requirements of them are mainly the purchase of raw materials, materials and daily consumables, as well as the transportation, warehousing and distribution of purchased materials, and Sales of finished products, etc. ■ Business enterprises firstly sell products, exchange data with other companies or organizations, and accept information services such as quotation services, agreement price services, document management, document inspections, and tracking of goods on the go; followed by transportation of goods, and the release of information through information platforms. Source information, release transportation demand information, find the transport party. ■ Therefore, the needs of commercial and commercial enterprises are mainly concentrated on information platforms such as commodity trading, data exchange, information services, and cargo stowage. Ordinary users include consumers and peasant households. They can query the logistics and quality status of products from the system and order products in the park.
Government department	■ Government departments mainly include government management departments and related functional departments. ■ The government management department regards the logistics park information platform as an effective channel for searching logistics information and product information. Through the logistics park information platform, the government can obtain a large amount of real-time logistics information and product information, thereby providing strong support for its decision-making in the logistics industry. At the same time, through the logistics park information platform, users can connect with the electronic information systems of various related functional departments of the government, which can facilitate the supervision of transactions and tax returns on the Internet.
Public service agencies	■ These service agencies provide related logistics value-added services such as online payment and online insurance for users of logistics park enterprises and other logistics park information platforms.

Related stakeholders in the agricultural industry chain have different requirements for information technology systems. With these requirements in place, we can translate this requirement into relevant information requirements and analyze the flow of information from different stakeholders to build an operational process under a multi-user system.

4.2 Operational Process Construction of Logistics Information Platform

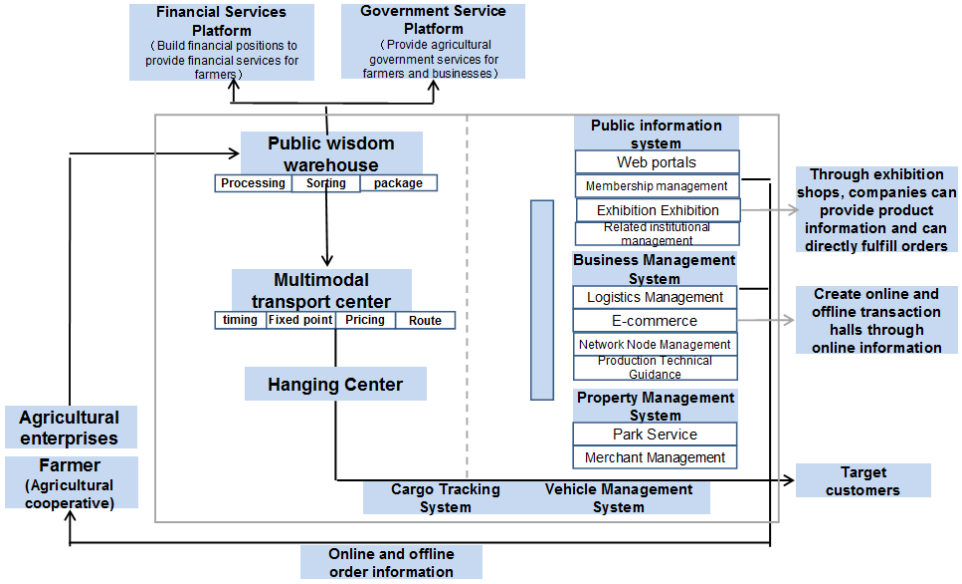

Fig 2. Flow chart of information technology operation

As a comprehensive agricultural logistics park oriented to the entire industrial chain, its service function segments mainly include the agricultural product market, and agricultural product logistics and logistics services, including storage centers, transportation and distribution centers, and machining centers. Agricultural service sector, including agricultural technology research and development and promotion center, agricultural product standardization guidance center, agricultural financial service center, agricultural socialization service center. Park management section, including park real estate operation, management committee and logistics management center. Information service the plate, which is the basis for all plates to achieve efficient collaboration, is also an essential element of the logistics park as a node and platform. It mainly includes various business operation systems, external information exchange systems, and node networked information systems.

Analysis and integration analysis of the technical map of the logistics park information platform can basically achieve the following information:

a. Supply chain logistics implements the exchange of business data in the logistics park through the local area network and the mobile phone internet, such as the exchange of transportation orders for enterprises and warehouses.

b. Through wireless networks such as mobile communications to locate information on transport companies and transport vehicles, drivers exchange vehicles and goods, such as locating vehicles in transit.

c. Through the sensor network in the logistics park, the information related to the transportation tools, collected goods, and pallets, containers and other transportation tools owned by the park will be exchanged, and then this data will be transmitted via the mobile communication network, the Internet and other network communication technologies. Communicated to relevant users.

d. The agricultural logistics park achieves information-based services in the logistics business (procurement, warehousing, processing, distribution, management, etc.). The established smart logistics park should be able to meet the logistics order information service in the park or outside the area, and be able to open and close information systems such as OA, ERP, MES, WMA, and SAP.

5. Summary

The construction of a logistics information platform is a complex task that integrates the theories and methods of many disciplines. The development of new disciplines related to it will inevitably lead to the development of methods and techniques in this area of research. Especially for agricultural

logistics parks that face the whole industry chain, there are many individuals and functions involved, and the links are complex. The construction of the information platform requires the simplification of functional processes, and it also becomes an integrated solution to various problems in the park. It is a long-term, continuous deepening and perfecting process.

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