

# Analysis on the Construction of Logistics Centers in YZ City of Hunan and Research on Its Model Design\*

Shijun Yuan

Hunan Modern Logistics College  
Changsha, China

**Abstract**—In general, the development of logistics industry in YZ City, Hunan Province is relatively backward, with specific manifestations as “small scale, disordered layout, low level of informatization, poor construction of logistics platform, weak service functions, and high logistics cost”. This paper makes an in-depth analysis on the necessity and feasibility of the construction of logistics centers, and brings forward a targeted model design scheme to accelerate the development of logistics industry in this region.

**Keywords**—logistics center; model; research

## I. INTRODUCTION

The construction of county-level logistics centers in YZ, Hunan Province will spur the development of regional logistics industry. Logistics industry has a strong driving effect and correlation. Hunan province should reasonably allocate regional economic resources, lower logistics costs for enterprises and society, and finally heighten regional competitiveness and adjust industrial structure, so as to improve the region's ability to transform or utilize resources and find the core of regional economic competitive advantage.

## II. NECESSITY OF PROJECT CONSTRUCTION

### A. Providing Logistics Service Support for Undertaking Industrial Transfer Projects

The construction of this project guides the logistics industry of YZ city to develop towards an intelligent, standardized, large-scale, intensive, networked, social, and efficient one, and upgrades logistics industrial structure through developing YZ city's modern logistics services, perfecting its logistics market system, improving the logistics consumption environment and cultivating market growth points, which will be conducive to providing logistics service support for YZ city to undertake more industrial transfer projects.

### B. It is Conducive to Building a Targeted Poverty Alleviation Platform in the Field of Logistics

For one thing, the construction of the project provides a logistics service platform for the innovation and entrepreneurship of enterprises and small and medium-sized logistics enterprises in YZ city and its surrounding areas; for another, it serves the industrial poverty alleviation in the region by connecting with economically-developed regions and advantageous enterprises, which will be beneficial to the construction of precise poverty alleviation platforms radiating YZ city and Hunan, Guangdong and Guangxi in the logistics field.

### C. Helping to Promote the Overall Improvement of E-commerce Logistics in YZ City

Relying on advantages of market resources and logistics resources, the construction of the project will speed up the construction of e-commerce logistics service, operation, technology, packaging, documents, information and other standards in YZ modern logistics city, and improve the handling capacity of collection, storage, transportation, sorting, distribution, delivery and other links. Meanwhile, it will also help to develop professional and personalized services to meet the differentiated needs, enhance the user experience, and build an e-commerce logistics system that connects YZ city and its surrounding areas, covers the whole country and faces the international market, so as to improve the overall quality of e-commerce logistics in YZ city.

### D. Making for the Advancement of Innovative Development of Logistics in YZ City

The construction of the project will vigorously promote the use of automatic identification, electronic data exchange, goods tracking, intelligent transportation, Internet of things and other advanced technologies and equipment, explore the application of block chain technology in the field of logistics, and strive to develop smart logistics. In addition, it will also popularize the terminal distribution modes, such as online ordering and taking goods from the store, self-service pickup and collection service, and explore the management mode of online and offline integrated logistics service. It will energetically push forward the integration of warehouse and

\*Fund: The 2018 Hunan Provincial Philosophy and Social Science Foundation Base Project “Research on the Construction of Hunan Rural Logistics System Based on Rural Revitalization Strategy” (18JD43); Hunan Provincial Social Science Achievement Evaluation Committee's project “Research on Rural Logistics Development Countermeasures System Based on Rural Revitalization Strategy” (XSP19YBC277).

distribution and integrated operation and network operation of logistics enterprises, accelerate the transformation and upgrading of logistics, expand the value-added services such as centralized procurement, order management, circulation processing, logistics finance, after-sales maintenance, and support the integrated innovation of supply chain, which will be favorable to the innovation and development of logistics in YZ city.

*E. It is Conducive to Upgrading Logistics Industry of YZ City and Improving the Urban Development Environment*

Generally speaking, the development of logistics industry in YZ City, Hunan Province is relatively backward, with specific manifestations as “small, chaotic, low, poor, weak, and high features”. More than 100 less-than-truck-load transportation enterprises in the central urban area are mostly located in high density residential areas and downtown areas including Chunjiang road and Zhenzhu road, or take up main roads, sidewalks and public places including parking lots and loading and unloading yards, or rent resettlement houses and simple places built by residents to carry out logistics and distribution services. There exist a lot of problems of lack of safety facilities, nonstandard operation and major potential safety hazards. In 2017, a number of fire accidents in YZ were related to logistics and wholesale markets. Through the construction of this project, the modern logistics market cluster of YZ city will be built and the logistics industry quality of YZ city will be improved. Besides, freight transportation should be arranged outside the city park as far as possible, which will be a powerful measure to relieve the traffic pressure. At the same time, the construction of the project gathers the scattered logistics sites and warehouses in one place, so that waste produced in the logistics city can be treated in a centralized way, thus making for environmental protection.

*F. It is Conducive to Meeting the Demand of Logistics Service of Consumption Upgrading*

China’s fast-growing consumer group is the key driving force to drive the demand for high-quality logistics and distribution space. Over the past two decades, the per capita consumption expenditure of Chinese households has increased with their spendable income. The middle class with enough purchasing power has stimulated the sales of a series of middle and high-end goods oriented by consumption upgrading. Therefore, it also drives the increasing demand for logistics and storage in China, including branded garments, durable consumer goods, food and beverage, household goods, automobiles, etc.

The diversification of retail sales channels and the customization of consumer demand pose a greater challenge to the flexibility of supply chains. The traditional supply chains mostly handle large packages of B2B type. Nowadays, the demand for small packages from business to small and medium-sized enterprises and business to customer is rising. Accordingly, more SKUs (Stock Keeping Unit) and faster sorting make higher demand on sorting space, hardware conditions, and flexibility of the supply chain.

*G. It is Conducive to Boosting the Joint Development of Commerce and Logistics and Enhancing Its Level*

The current development of urban-rural integrated e-commerce gets stuck in logistics. At present, the domestic express network can basically cover counties, but it can not reach villages. Apart from insufficient logistics infrastructure in rural areas, the more remote the area, the more expensive the logistics cost. The proportion of freight to per customer transaction is too large. The most important reason is that rural e-commerce freight volume is small, so its cost cannot be lowered without the formation of scale. The construction of the project will give full play to the advantages of China’s logistics across the world, the whole country, all counties, towns and communities, carry out resource integration and optimization again, and build a sound urban-rural joint distribution system for e-commerce logistics based on “China logistics e-commerce platform and IOT cloud warehouse platform and IOT common distribution platform, which will be conducive to stimulating the coordinated development of e-commerce and logistics, and improving the logistics service level of rural e-commerce.

### III. ANALYSIS OF MARKET DEMAND FOR PROJECT CONSTRUCTION

Generally speaking, the development of logistics industry in YZ City, Hunan Province is relatively backward, which is embodied in “small, chaotic, low, poor, weak, and high features”, with large development space and feasible market demand.

*A. Small Scale*

There are only 10 logistics enterprises with a registered capital of exceeding 10 million yuan, and most of them have a registered capital of less than 1 million yuan. In spite of more than 10 logistics parks in the whole city, most of them cover an area of less than 50mu. At present, the largest logistics base in YZ covers an area of only 150mu, which is far from adapting to the development.

*B. Layout Disorder*

More than 100 less-than-truck-load transportation enterprises in the central urban area are mostly located in high density residential areas and downtown areas including Chunjiang road and Zhenzhu road, or take up main roads, sidewalks and public places including parking lots, loading and unloading yards, or rent resettlement houses and simple places built by residents to carry out logistics and distribution services. There exist a lot of problems of lack of safety facilities, nonstandard operation and major potential safety hazards. In 2017, a number of fire accidents in YZ city were related to logistics and wholesale markets.

*C. Low Level of Informatization*

The informatization level of most enterprises only stays at the level of “looking for goods for vehicles” or “looking for vehicles for goods”. It is difficult to merge and share information resources, so it has cause the formation of “information island”. Advanced information technologies

including automatic identification systems, global satellite positioning systems (GPS), barcode technology, and automatic sorting devices are rarely used. As the public logistics information platform has not been built yet, it is difficult to realize the connection and intercommunication of various transportation modes of “highway, railway, waterway and air transport”, transfer logistics information between manufacturing and transportation, and achieve inter-regional communication. Logistics operation efficiency is low but its cost still remains high.

#### *D. Poor Construction of Logistics Platform*

First, the construction of logistics park platform lags behind. YZ city has neither a modern logistics complex nor a modern logistics park integrating five flows of logistics, business flow, people flow, information flow and capital flow. Large logistics projects, especially those with economic radiation and driving effect, have not been implemented. Second, the construction of comprehensive customs clearance platform lags behind. Comprehensive customs clearance logistics platform requires complete commodity inspection, customs, road ports and railway ports, and it also should have functions of processing, bonded, customs clearance, financial services and other comprehensive services. The customs, inspection and quarantine office of YZ city has been set up, but due to the late start of port infrastructure construction, lack of financial support, and slow progress of inland port project in YZ city, the port clearance platform is still far from the requirements for clearance facilitation.

#### *E. Weak Service Functions*

The first is weak supporting service capacity. Most of logistics enterprises are transformed from the traditional freight transport enterprises. Their logistics services mainly focus on storage, transportation and handling, while the matching services of processing, packaging, distribution and information are few. The second is poor new service functions, mainly reflected in the following aspects: few containers, trailers, bulk transportation and cold chain transportation, low level of mechanization of handling, few third-party logistics companies (5 companies) registered in YZ City, and fewer fourth-party logistics companies. The third is weak radiating capacity. Urban-rural distribution stations are not only small in number and scale, but also have a serious shortage of supporting facilities of warehousing (including cold storage). Its function of providing warehousing, processing, distribution and other services for all kinds of production and consumer goods is weak, which makes it impossible to form a three-level rural logistics distribution network system of county, town and village, and the radiation scope is limited.

#### *F. High Logistics Cost*

According to the news released by National Development and Reform Commission (NDRC) on July 24, the ratio of China’s total social logistics cost to GDP had been declining for five consecutive years, falling to 14.5% in the first half of this year. However, the ratio of total social logistics cost to GDP in YZ city from January to September was about 17.3% (it was calculated by the Preparatory Committee of YZ

Logistics Association based on the statistical data of some representative enterprises in logistics, warehousing and industry, and the actual ratio was higher than the estimated), which was at least 2 percentage points higher than Hunan’s 15.3% and 2.8 percentage points higher than that of China.

### IV. BUSINESS MODEL DESIGN

Logistics systematics refers to that all links (or subsystems) of logistics are regarded as a large system and design and manage it as a whole. From the best structure and coordination, it can give full play of the efficiency of its systemic function and achieve the logistics rationalization from the whole links. This project proceeds with resource integration and system optimization, and links various functions or subsystems of the logistics system of YZ city and surrounding areas, so as to seek the overall economic benefits of the logistics system. For the logistics system, all subsystems are mutually restricted and interdependent, sometimes even contradictory. Taking the packing link as an example, one-sided emphasis on saving packaging materials and packaging costs, and improper use of less packaging materials or low-quality substitute materials can indeed lower packaging costs. However, in the process of transportation, loading and unloading, poor packaging quality will cause goods to be damaged and disordered. From the perspective of the entire logistics system, it is a waste.

With the progress of science and technology and the development of production, faced with tough competition, people have gradually realized the importance of developing and researching the logistics system and regard it as the “third profit source” to adapt to mass production, mass circulation and heavy consumption. The project builds advanced green hardware facilities, introduces scientific and efficient green software management, strengthens the construction of food safety supervision system, introduces green market participants, establishes efficient, environmentally friendly, convenient and low-carbon supply chain logistics services, and finally realizes the transformation and upgrading of logistics industry in YZ city.

### V. CONCLUSION

The construction of this project will give full play to the diversified industrial development needs of the construction unit, integrate supply chain resources, and build a supply chain service platform to advance the development of commerce and trade, manufacturing, agricultural industrialization and international logistics in Yongzhou. It is planned to build six functional service areas: China logistics headquarters and commodity exhibition and trading center, logistics service center for undertaking industrial transfer, international logistics service center, transportation (distribution) service center, distribution center, and supporting residential and living service center, to fully meet the market demand.

### REFERENCES

- [1] Yuan Shijun, Liang Ruiwei. Emergency Logistics Vehicle Dispatching Based on PSO Algorithm. *Logistics Technology*. 2019. 7. (in Chinese)

- [2] Yuan Shijun, Huang Fuhua. Construction of a Common Logistics System for Commercial Circulation in Changsha-Zhuzhou-Xiangtan City Group Under the Environment of Internet of Things. *Journal of Commercial Economics*. 2015. 8. (in Chinese)
- [3] Bai Yufeng. Optimization of Location and Distribution Path of Regional Express Distribution Center under Common Distribution [D]. Beijing University of Posts and Telecommunications. 2016. (in Chinese)