

# On the Problems and Countermeasures of Logistics Industry Cluster Development in Xi'an City

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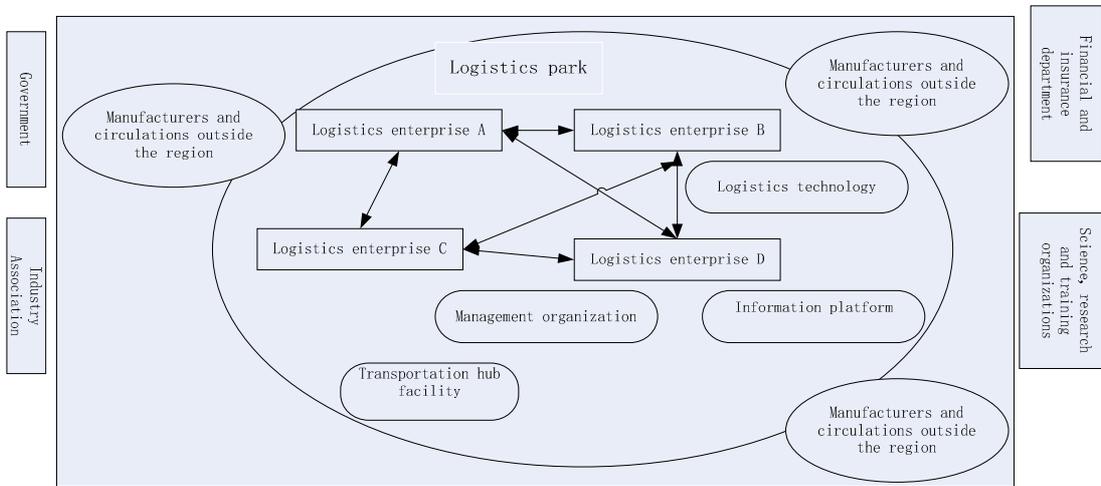
**Abstract.** As a new form of industrial organization, logistics industry cluster is the spatial agglomeration of logistics service functions, and are produced under the background of supply chain. Xi'an city is located in the central position in our country, which is also the hub city of the eastern gateway to the northwest, and southwest, and it is one of the 29 countries level 1 logistics node city in china, are the focus of the Guan-Tian economic zone and modern logistics center. It is an important bridgehead of the western development, also is the new Asia-Europe continental bridge and the important node of the land of the Silk Road.

This paper uses the paper carried literature writing, but also the use of quantitative and qualitative analysis, some of the information through the inspection, reference, integration and operations, according to the characteristics of the new situation, combined with today's development in Xi'an, but also learn from developed countries and China's coastal areas some successful experience of advanced logistics industry cluster development, and analysis of the current situation of Xi'an basic logistics industry cluster development, problems and causes, and have put forward some suggestions and countermeasures to the logistics industry in Xi'an development and formulation of relevant policies and other logistics to provide some reference.

## Introduction

Logistics Industrial Cluster is developed based on the supply chain and regarded as the combination of logistics industry and region economy. So, it is a relatively new concept. While it is attracting more attention because of its contribution to economic development and competition of logistics<sup>[1-5]</sup>. Although some scholars have put forward their opinions on the logistics industrial cluster, there is no unified definition of it. Wen Haixu(2005)<sup>[6]</sup> thought logistics industry cluster meant that logistics key enterprises are set as the center with a certain space, no matter they are competitive or cooperative relations. Other related logistics companies, specialized suppliers, service suppliers, and related organizations such as universities, standardized institutions and industry associations are concentrated with the same space. to maintain the sustain competitive edges. Zhang Jianxin(2007)<sup>[7]</sup> hold the idea that logistics industrial cluster refers to a variety of logistical enterprises with different functions are integrated in a regional geography situation. It depends on the advantages of geography and regional economy to combine such functions as transport, warehousing, import and export of freight, distribution, and information processing in an effort to form a logistics industry chain and increase the total efficiency of logistics system. Xie Sixin, Zhang Wenhua(2014)<sup>[8]</sup> argue that logistics industrial cluster is the benefit cooperation between the deep integration of innovation resources and the main party of value chain. In this paper, logistics industry cluster is defined as the integration of logistics functions (transportation, warehousing, loading and unloading, packaging, distribution and information) and manufactures or

circulation enterprises. It relies on transportation hub facilities (such as sea port, inland port, airport, railway station and road hub), science research organization (logistics technology, logistics information platform development) and management departments as shown in Figure 1.1.



**Figure 1.1 Modern Logistics Industry Cluster**

Xi’an is located in the center of China and has gathered important transportation hub, information center, financial center and various resources together. So, it plays a significant role in the economic development by connecting west and east as well as north and south. At the same time, Xi’an is named as one of the national level 1 logistics nodes city in China, and modern logistics center of Guanzhong-Tianshui Economic Zone. Apart from that, it is one of the major cities in China which are located in the new Asian-European Land Bridge and the starting point of the Silk Road. With the continuous evolvement of western region development, the country has announced policy to support western logistics industry, which offered a good opportunity for Xi’an Logistics industry. However, Xi’an logistics industry cluster is still in the primary stage of development. Therefore, how to take advantages of these opportunity to promote it is still a subject worth further researching.

**Situations of Logistics Industry Cluster in Xi’an City**

Today, the logistics industry cluster development can be concluded as the following:

**On the Logistics Network Planning**

The main path to form the logistics industry cluster is constructing logistics park and logistics base. According to most of the goods shipped from east to west, highway and railway are used as the main transport modes supplemented by airway to carry out the movement of goods. The network is three-layer node pattern including two comprehensive logistics parks and eight professional logistics centers as well as ten more distribution centers, facilitating the development of modern logistics and contributing to the mutual support of different functions.

Two comprehensive logistics park refers to Xi’an International Inland Port and Xi-xian Airport Zone. The former is the largest land transshipment hub comprehensive logistics park in northeast China. It is the transport hub and combining site where the sea and land through transport is formed in the inland of northwest. Three support projects in Xi’an International Inland Port are comprehensive bonded district, railway container terminal and highway station. It also used the international and domestic logistics park as the wings of logistics system strategic layout. Apart from the basic functions of general logistics park, Xi’an International Inland Port can perform such

functions that can be provided by customs, inspection and quarantine bureau, exchange bank and insurance company, etc.. On the other hand, Xi-xian Airport is the critical transportation hub integrating air, railway and expressway. With the only national first class external opening port in Shaanxi province, Xi-xian Airport is the significant carrier of airport economic zone development. It set up the air path for domestic and overseas zone, and make the first class international logistics hub and new origin of air silk road. It is helpful for open to west and northwest strategically.

Eight professional logistics centers have been planned and formed including Xi'an Storage and Transport, Liucunbao Airport, Western Car City Center, Beishiqiao Refrigerated warehouse, Changan Yinzhen Logistics center, Lintong xinfeng logistics center, Fangzhicheng Clothing center and fruit logistics center.

As for ten logistics centers, they commonly belong to comprehensive logistics park or professional logistics centers due to their limited service and function. According to the location of logistics center and road plan of Xi'an, ten logistics centers are set up in Xianning, Huaqing, Taihuabei, Dabaiyang and Youyi road to connect different logistics nodes.

### **On the Logistics Demand**

Logistics demand is essentially deprived from demand for the goods or service. So the generation of logistics demand rely on regional economic and related industry development. High technology, facility manufacture, modern service, tourism and culture have offered a wide range of goods to promote the development of logistics. At the same time, the quick development of these industries provide the huge market and development potential. Recently, national economy have developed steadily in Xi'an city and significantly increased social logistics demand. It also set up the foundation of quick logistics demand. The process of manufacturing and logistics industry linkage development is accelerated. Along with the adjustment of industrial structure and transferring of eastern industry, the ability of meeting the demand of logistics is improving, the social distribution system and logistics infrastructure are gradually perfect, also the logistics industry will tend to be more reasonable.

Besides, the needs of developing Xi'an international logistics are met. A wide variety of logistics enterprises gather in Xi'an International Inland Port Logistics Park. Xi'an Railway Container terminal and Xi'an Comprehensive Bonded Zone facilitate the seamless joint between the transport and import & export business, realizing the seaport logistics functions. Xi'an is the biggest cities of China that are located in the new Asia-Europe continental land bridge, thus it is an important hub connecting central Asia, West Asia and Europe as well as the starting point of the Silk Road to develop international logistics.

### **Problems and Reasons analysis of Xi'an Logistics Industry Cluster Development**

Logistics Industry Cluster development in Xi'an is still in the primary stage, therefore, some problems are met in the process to be solved. They are stated as following.

#### **Overall Logistics Industry development is slow**

Although some logistics industry clusters have occurred, they are still at the bud of cultivation and the cluster effect is not completely shown. On the other hand, some companies have limited awareness of logistics cluster and the government do not put more emphasis on the propaganda and encouragement of cluster.

According to the Shaanxi Logistics Industry Development Report<sup>[9]</sup> in 2015 by Shaanxi Bureau of Statistics (NBS), the added value of logistics industry account for 16.6% of the third industry added value, which is 1.0% lower than the previous year. This data demonstrates limited contributions of

logistics to the economy. Thus, investment on the logistics industry is too less to promote logistics cluster.

On the other hand, logistics node failed to connect the related manufacturing operation, and still remain in the simple warehousing and transportation business. Connection between logistics companies is weak, not to mention forming a good collaboration relations which is not conducive to the integration of resources and the exertion of accumulative effect. According to the survey, the willing to enter the logistics park of logistics companies is not strong, although the government has published some preferential policies to attract logistics enterprises in investment. It shows that policy support is not enough for the form of logistics industry cluster, many other conditions are also necessary to achieve the purpose.

### **The Organization Scale and Technical Level of Logistics Enterprises are not High**

Logistics enterprises are the main body of the logistics industry cluster, so the quantity and quality of them determine the formation of cluster effect. So far, there are more than 1100 logistics enterprises are located in Xi'an, about 30 enterprises among them including Best, Yellow Vest are qualified as A level. So the proportion of large logistics enterprises is low, while that of the private enterprises was 57.3%. that means the third party logistics is still in the process of induction and promotion. The access to logistics market is easy which leads to chaos and intense competition between the enterprises of logistics market. Some manufacturing or distribution companies prefer to invest a huge sum of money on setting up logistics subsidiaries rather than cooperate with the third party logistics enterprises. Private logistics tends to have low profession level and simple facility so that they are unable to take on high level logistics service. Private logistics not only increase the operation cost but also decrease the overall social operating efficiency. Therefore, the industry concentration is not high, and the degree of logistics socialization and marketing is too low to form effective logistics cluster.

### **The Construction of Logistics Facility cannot Meet the Quick Development Requirement**

Although the freight capacity has increased, the transport system is not perfect yet and cannot meet the rapid development of the logistics industry cluster. The linking and matching of highways, railways and airports have not been implemented. The road freight traffic accounts for more than 95% of the total capacity. At the same time, the increase rate of truck is much higher than that of other transport mode. The proportion of Railway and airway transport capacity is relatedly low, so the development of the whole transport industry is not balanced, as shown in Table 1.

**Table 1 Transportation of Xi'an in 2015**

Item		2015	Increase over Preceding Year(%)
<b>Freight Traffic (10000 tons)</b>	Railway	848	-5.8
	Highway	45401	10.4
	Civil Aviation	21	13.5
<b>Freight Ton-Km(10000 tons-Km)</b>	Railway	2164003	-8.9
	Highway	4254824	10.1
	Civil Aviation	11256	5.4

(Data Source: Xi'an Statistical Yearbook of 2016)

### **Logistics information construction is not active and advanced**

Logistics information is the important power to promote the logistics cluster development. At present, public logistics information platform construction and logistics standardization cannot satisfy the needs of the logistics industry development. The hardware such as logistics park, road construction and transportation facility is considered prior to the software construction. The guideline of weighing more hardware than software is not favorable to the modern logistics development. For example, the number of logistics enterprises using bar code and logistics information system is limited. Second, most of the application focus on regular business and the function of system is at the relatively low level. Third, the information standardization is not the same so as to set up uniform public information exchange platform. Finally, the difficulty to share and efficiently utilize information lead to the hard integration of resources.

### **Countermeasures of Xi'an Logistics Industry Cluster**

Under the requirements of One Belt One Road and Shaanxi Free Trade Zone construction, some countermeasures by referring to the successful experience of developed countries and regions have been put forward to solve the main gap and problems of Xi'an Logistics Industry Cluster.

#### **Lead the logistics enterprises to gather in logistics park**

The government should concentrate on the propaganda of logistics industry cluster and formulate the corresponding preferential policy so as to guide the logistics enterprises to gather in logistics park and promote the radiation role of the International Inland Park to better combine with international economy. Apart from that, the third party logistics should be greatly developed to add more impetus to the development of logistics industry cluster. The purpose of cluster can be achieved by resourcing and infrastructure sharing to reduce the cost and increase the logistics service level. Logistics park is not equal to logistics industry cluster, and the former is just the primary stage of the latter. The government has the responsibility to support and promote some Demonstration items to enter the park, at the same time, the government can establish mutual communication between business to strength communication and cooperation. As a result, the coordinated development of logistics enterprises can be promoted and finally achieve the rapid development of cluster area<sup>[10]</sup>.

#### **Develop the Third-party Logistics Greatly**

The related policy and regulations should be issued to effectively consolidate the logistics industry and provide a good external environment. Cultivating backbone enterprises and encourage enterprises to participate in national logistics enterprises rating and ISO quality management system certification. Priority and special funds should be given to develop some leading enterprises. On the other hand, the logistics industry association can lead some enterprises to carry on different cooperation and form the strategic alliance.

#### **Focus on the Planning and Construction of Logistics Infrastructure and Facilities**

The planning and construction of logistics and transportation need to be further conducted to improve the comprehensive transportation network, make all kinds of transport mode can achieve good cohesion and matching, improve the efficiency of resource utilization and logistics. While speeding up the construction of the road network, railway infrastructure should further be strengthened to improve the hub function and increase the proportion of railway freight. On the other hand, the Xi'an international airport capability need to be increased to facilitate the intermodal of transportation. Apart from that, the warehousing facility and distribution center also need be focused on. The handling and loading and unloading facility should be updated and added to

increase the operation efficiency.

### **Accelerate the Construction of Logistics Information**

Software construction should be focused on in addition to the logistics infrastructure and facility. Logistics informatization is the core of the modern logistics industry development. The government guide the universities, research institutes and enterprises to boost the new equipment research and development as well as the promotion of logistics technology application. The public logistics platform can be constructed to set up the public inquiry system and share the freight information. The data exchange and sharing from related departments help to integrate logistics resources and improve the operation efficiency of logistics system.

Some new technology such as the Internet of Things and RFID should be promoted as well. Some industry such as agriculture products, medicine, container industry can use EDI and RFID to cargo track and automatic sorting. The application of new technology and facility in the logistics in addition to connecting the isolate information system to the public information platform will make better cooperation among different logistics bodies, improve the intelligent level of logistics management, integrate the flow of business, information and goods.

### **Conclusions**

To sum up, logistics industry cluster is a certain trend under the new economic and logistics development. Coastal developed areas in China have some progress in logistics industry cluster. This paper mainly takes Xi'an City as the subject, analyzes the situation and existing problems in its logistics cluster and finally puts forward some improvement suggestions and opinions. As the logistics development itself started lately and the logistics industry cluster is a new development model, research on it still quite little. Current research mainly focus on cause, model and impact factor and so on. Theory research is weighed more on practice research. It is necessary to collect and adopt more practice experience in the future.

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