

China Logistics Distribution and Warehousing Development Global Strategic Analysis Vilnius Gediminas Technical University

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Article Info	Abstract
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Published: 25 March, 2021 *Corresponding author: Kuranovic V, Vilnius Gediminas Technical University, Lithuania; Tel: +370 5 274 4938; DOI: https://doi.org/10.36266/JTSHR/110 border logistics has incurred problems such as high cost, long transportation and distribution time, and difficulties in returning and exchanges, which seriously restricts the development of crossborder ecommerce, traditional cross-border logistics. It is difficult to solve these problems. A new cross-border shared logistics model - overseas warehouses came into being. Although overseas warehouses can solve most problems of cross-border e-commerce enterprises and cross-border logistics, the development of China's overseas warehouses has also encountered many difficulties. This paper first introduces the development status of cross-border e-commerce industry and crossborder e-commerce logistics, especially shared logistics overseas warehouses, and then deeply analyzes the reasons for the development of overseas warehouses.

Keywords: Distribution; Warehousing; Transportation; Logistics; Strategic solutions

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Introduction

In recent years, under the background of the continuous slowdown in the growth of China's import and export trade volume, cross-border e-commerce has developed rapidly in China. From China's cross-border e-commerce penetration rate, that is, cross-border e-commerce transactions account for import and export trade. Cross-border e-commerce gradually occupied the market share of the traditional foreign trade industry, and the volume of transactions and the types of trading products continued to expand. Judging from the scale of China's crossborder ecommerce import and export transactions, the current export cross-border e-commerce dominates, but the proportion of imported e-commerce is also increasing year by year. China's export industry has the advantage of low cost and government incentives, so China's cross-border e-commerce export transactions are larger than imports. As an important part of cross-border ecommerce, cross-border logistics is closely related to cross border e-commerce. However, with the rapid development of cross-border e-commerce in China, problems such as high cost, long transportation and distribution time, and difficult return and replacement of goods have seriously restricted the development of cross-border e-commerce, which has become the bottleneck of the development of cross-border ecommerce. With the continuous expansion of cross-border ecommerce, the existing logistics warehouses in seven pilot cities and ten bonded areas in China are still unable to meet the actual needs. Prior to

the economic reform movement, China's centrally planned, threetier system dominated the distribution sector. After the 1980s, this system gradually shifted away from the socialist mode to the free market mode. Today, there are three main forces that are changing and modernizing China's distribution and logistics system. These are the booming economy, entering the WTO and e-commerce. While great changes have been made, China's distribution system still lies somewhere between socialism and free market capitalism. This paper addresses issues of interest to firms wishing to distribute good throughout China. It provides a historical structure for viewing distribution and logistics in China as well as providing a snapshot of current problems facing firms expanding operations there. Finally, it provides a synopsis of lessons learned by firms currently operating in China as well as views of future trends.

Background Literature

In recent years, researchers in the field of distribution planning have given significant attention to the integration of transportation and inventory decisions. The objective is to balance inventory and transportation costs. A well-studied problem is the inventoryrouting problem (IRP), which refers to developing a repeatable distribution strategy that minimizes transportation costs and the number of stockouts. Both deterministic and stochastic versions of IRP have been studied [1-4]. Other approaches to integrating inventory and transportation decisions have also been explored; [5-7]. Introduce the integrated inventory-distribution problem (IDP) for multi-period systems considering both inventory and transportation costs, and allowing for backlogging [8]. Consider the production-inventory-distribution-routing problem (PIDRP), where the focus is on coordinating production and transportation schedules between vendors and customers [9]. Solve a one-plant, multi-customer PIDRP with the assumption of single-mode transportation. Research on the integration of inventory and warehouse location decisions involves identifying an optimal location for the warehouse while minimizing system-wide transportation and inventory costs. Literature on warehousing is massive, focusing especially on location, design, and operation. Numerous models have been developed to assist in various aspects of warehouse design; e.g., sizing [10-12] aisle-layout [13], and operational aspects [14-15]. An area of special focus in warehousing is order picking, which accounts for around 50% [16]. Worker congestion during order picking has been identified as a key factor that causes decreased warehouse productivity and increased costs [17-19]. The literature on supply chain planning has focused on integrating inventory and transportation decisions. Warehouses, in the context of supply chain planning, have almost exclusively been treated as nodes with known capacity.

Logistics and Warehousing Strategic and Economic Development Analysis

Logistics cost is composed of three parts: transportation cost, inventory-carrying cost, and administration cost. Evolution of the logistics cost structure in both countries is analyzed to find the differences between them. Logistics infrastructure includes transportation infrastructure, transportation vehicles, and warehousing. Transportation infrastructure includes: rail, road, pipeline, air, water, logistics parks, etc. Transportation vehicles include motor carriers, rail, etc. The transportation infrastructure in both countries is analyzed. In terms of logistics structure, logistics cost by composition and transportation mode is important and is analyzed. Meanwhile, logistics can also be divided into in-house and for-hire operations. Third-Party Logistics (3PL) and Fourth-Party Logistics (4PL) are the most important sectors in for-hire operations. 3PL is compared for both countries. Information Systems is the means to manage data, information and knowledge which are important to logistics. Companies can utilize IS to achieve competitive advantages. IT provides the technological tools for developing IS, for collecting and analyzing data in order to generate useful information which can be shared with logistics partners. How IS/IT have been adopted by both countries is studied. Moreover, problems with IS/IT application in logistics in China are analyzed and potential solutions are recommended. Different Logistics Modes of Crossborder E-commerce in China The main mode of cross-border logistics in China is mainly based on international postal parcels and international express delivery. Although there are also crossborder transportation modes of centralized transshipment, the proportion is relatively small. International express delivery is

mainly represented by FedEx, UPS and DHL, which controls most of the international express delivery market. Although international express delivery is fast and safe, it can track logistics information in time, but the cost is relatively high, and it is engaged in cross-border electricity in China. For SMEs, the cost is too high, the cost is too large, and the profit margin of the enterprise is seriously compressed. Therefore, due to cost considerations, most of the sellers engaged in cross-border ecommerce in China are mainly based on international postal parcels. The cost is low and the cost is low, but the logistics cycle is long and the return and exchange is troublesome. This also brings difficulties such as poor customer experience, high complaint rate and limited product sales. In order to solve the problems encountered in China's current cross-border logistics, many companies have begun to use overseas warehouses. As a special form of cross-border logistics, overseas warehouse is essentially a kind of logistics. At the same time, it is also a new form of shared logistics. This is mainly because the operation of overseas warehouses covers a wide range and many fields, and the service scope can be extended to Different countries and different regions, the geographical location determines that overseas warehouses will be more complicated than domestic logistics when they operate. After cross-border e-commerce sellers use overseas warehouses, logistics costs are reduced, goods delivery timeliness is improved, and the categories of goods sold are expanded. At the same time, the entire crossborder e-commerce industry can be optimized and upgraded. The operation process of overseas warehouses mainly includes domestic collection, international transportation, overseas warehousing, overseas delivery and after-sales service. Each link is the integration, application and innovation of the existing shared logistics methods. In the domestic collection chain, if the company uses a single order to transport separately, it will inevitably increase the logistics cost. If the company uses standardized equipment such as pallets and totes provided by overseas warehouse service providers, it will collect scattered goods and have an overseas warehouse. After the goods are collected, they are shipped to foreign countries, so that the goods are basically standardized and unitized when they are issued, so as to minimize the number of loading and unloading of goods during transportation and reduce the cost of product damage caused by back and forth. In international transportation, logistics information such as sea transportation, air transportation and land transportation can be effectively shared through the logistics information platform, so as to eliminate sellers' concerns about "mysterious disappearance" of goods, and realize multimodal transport such as sea transportation, land transportation and air transportation, so as to connect quickly and flexibly. With the help of the logistics information platform, the supplier and the carrier can communicate with each other in a timely manner to effectively solve the waste of logistics resources caused by information asymmetry and reduce the return trip empty vehicles. In the overseas warehousing segment, the products of each crossborder seller share the same warehouse, using advanced logistics information technology to uniformly encode and store the goods in the warehouse, recycle the same storage space, and adopt unified standardized inventory management. The system manages overseas products remotely and monitors the storage status of products in the warehouse. At the same time, it also utilizes the public facilities in the overseas warehouses to complete the registration of products in and out of the warehouse and the quality preservation of the products. It is a new form of flexible integration of shared storage space, shared infrastructure and shared logistics information. Overseas delivery links, similar to domestic delivery and express delivery services, overseas warehouse service providers and local express delivery companies to establish cooperative relationships, and complete "last mile" distribution by local logistics companies with wide coverage, high efficiency and low cost. The local logistics company has a relatively complete layout of the local logistics network. Compared with the overseas import warehouse, the logistics cost of the distribution is lower. Sharing the logistics infrastructure of the local express logistics company is bound to optimize the "last mile". "The delivery service." After-sales service, one of the advantages of overseas warehouses is that it can help cross-border sellers to solve the after-sales service problems of products. Overseas warehouse service providers can share the local jumping market or second-hand trading websites by means of "shared return and exchange stocks". Share the return product information, help the seller to deal with these goods that need to be "secondary sales reduce the return cost of the seller, and the company itself can also obtain additional income to achieve a win-win situation. Overseas warehouses need to hire local staff overseas. Therefore, it is necessary to understand the legal policies and labor treatment issues of the host country before, and overcome cultural differences and communication obstacles. Overseas warehouses are still a new model combined with the latest technology of the Internet, requiring a large number of professional technical information talents to manage the supply chain and warehousing. 2) Cooperation mode with third parties the mode of cooperation with third parties refers to the mode of cooperation between cross-border e-commerce companies and third-party enterprises to share overseas warehouses, including the leasing of third-party overseas warehouses and the establishment of overseas warehouses by both parties. Among them, Dalong.com represents the enterprise and actively the target market seeks cooperation with third parties. The cooperation model with third parties, on the one hand, the two sides will share the cost of opening a position to ease the financial pressure on cross-border ecommerce, on the other hand, they can also use the familiar knowledge of the target market in the third-party country to accelerate the process of cross-border ecommerce construction and cross-border E-commerce companies are more quickly integrated into the target market, adapt to the environment of the host country, and avoid unnecessary cultural conflicts and contradictions. 3) One-stop supporting service mode

The one-stop supporting service model refers to a series of services that the logistics company establishes overseas warehouses overseas and provides goods transportation from domestic to overseas. The typical representative enterprise is to deliver the four-way express delivery. The logistics service of the Quartet express delivery has spread throughout most of the world, and the Quartet Express has chosen to establish warehouses overseas to provide international logistics services with crossborder e-commerce companies as the core of overseas improving transportation efficiency. warehouses, greatly Warehousing is an important part of logistics. It is a logistics company that started with traditional logistics services. Warehouse is a professional field of its management and has accumulated certain warehouse management experience. The construction of overseas warehouses can make use of these warehouse management experience and understanding of the target market, provide professional logistics services for cross border e-commerce enterprises, and rationally divide the work, improve the efficiency and benefits of cross-border ecommerce companies and logistics companies. The cross border e-commerce sector is more specialized. According to the analysis of the above three typical business models of overseas warehouses, the selfbuilt model is the most flexible and can effectively control and manage commodity logistics. The other two models do not have such good advantages, but at the same time they have the highest cost and risk and are suitable for the market. Large cross border ecommerce companies with large market share and strong financial strength, such cross-border e-commerce companies can choose to build their own overseas warehouses and enjoy exclusive resources. However, in fact, there are not many large-scale crossborder e-commerce companies with strong financial strength. China is more of a slow-growing small and medium-sized crossborder ecommerce enterprise. The capital turnover is not so slow and flexible, and the risks that can be borne are small. This type of cross-border e-commerce Company's cooperation with third parties is a more appropriate choice. Therefore, it is suitable for small and medium-sized cross-border ecommerce enterprises with small market share and weak capabilities. Although such enterprises already have certain strength and considerable sales, it is still difficult to lease overseas warehouses of large-scale crossborder e-commerce companies. Therefore, it is necessary to cooperate with third party enterprises to utilize third-party professional logistics services. Such cross-border e-commerce companies currently account for a large proportion, and there is an urgent need to use third-party overseas warehouses to conduct business, and the demand for overseas warehouses is relatively stable. From the seller's point of view, the one-stop supporting service model is more professional and comprehensive than the other two, and the risk and cost of cross-border ecommerce companies are the smallest, making cross-border e-commerce companies the most worry-free, suitable for small or cross-border e-commerce companies that lack experience in logistics management. These cross-border ecommerce companies are

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looking at the vast global market and actively expanding their overseas business. However, due to the lack of management experience and lack of brand awareness in the initial stage, it is difficult to open up the global market. Therefore, it is possible to smoothly carry out foreign business with the help of one-stop supporting service mode. Therefore, the future development of the one-stop supporting service model is also very broad. In summary, the three overseas warehouse business models each have their own unique advantages in cost, management, and service. Therefore, cross-border e-commerce companies of different types and different development periods cannot choose the operating mode of overseas warehouses. First, understand the characteristics of your own company and the characteristics of various overseas warehouse operation modes choose the most appropriate model, save costs and control risks. Lack of Localization Services Whether overseas warehouse enterprises can provide high-quality localized services is an important factor affecting the competitiveness of enterprises. The so-called localized service is to solve the problems of language, marketing, data integration and legal trade disputes in cross border transactions in the way that local people are used to. In crossborder trade, more and more sellers are paying attention to how to capture local consumption requirements, how to do localized marketing, localized distribution, localization promotion, etc., to maximize the diversity of overseas consumers demand. However, due to the limitation of space, it can only be achieved by means of overseas warehouses. In essence, the existing overseas warehouses cannot satisfy the localization demands of the sellers, resulting in the lack of localized services. The lack of local services is influenced by the traditional concept of operation. On the other hand, the localization construction itself is rich and complex, and cannot be completed by a single enterprise. The Overseas Warehouse Has a Low Technical Level and Lacks Professional Talents The development and application of overseas warehouse information technology requires professional supply chain management talents and information technology talents. However, due to the short development time of China's overseas warehouses, there is a relatively lack of professional supply chain management talents and information technology talents. For example, the automated three-dimensional warehouse greatly realizes information management, and it requires the operation and improvement of professionals, whether it is cargo location management, inventory management, or database management. The inventory information is not allowed to make the capital turnover cycle of cross-border e-commerce enterprises lengthened, which reduces the operation effect of funds and even disrupts the sales plan of cross-border e-commerce enterprises. At the same time, the procedures and operations of warehousing of overseas warehouses are not as good as those of domestic warehouses. The classification and placement process of goods on the shelves is slow, delaying the timely sales and delivery time. At present, the application of big data can greatly improve the operating efficiency of overseas warehouses, and can promote the

upgrade of overseas warehouses. At present, the lack of professional talents hinders the timely updating of China's crossborder ecommerce overseas warehouses, and the application of new technologies is an urgent need for cross-border e-commerce companies and logistics enterprises. The Customer Service Level Is Not Enough Although China's overseas warehouses have facilitated customs clearance procedures in the first-way transportation, there are still large loopholes in the customer's service level, and frequent errors occur. The competition of overseas warehouses is also reflected in the competition of service quality. At present, there are many overseas warehouses in the service plain stage, but few of them reach the level of service. Generally, the existing overseas warehouses only stay in the scale effect and cannot break through the existing service model. Overseas warehouses are also service providers for crossborder e-commerce companies. They should provide good services to consumers with cross-border e-commerce companies, use geographical advantages to pay attention to the needs of local consumers, and timely feedback demand information to crossborder e-commerce companies. If cross-border e-commerce companies do not have such demand information, it will be difficult to produce the products that local consumers need in a timely manner, which will lead to the risk of slow-moving and capital turnover of cross-border e-commerce enterprises. The profit of most overseas warehouses comes from the high speed circulation of goods. On the contrary, if some largescale goods with slow sales or goods in the off-season greatly increase the inventory pressure, it will cause a short position. These products occupy a large area of overseas warehouses for a long time, so that overseas warehouses can no longer store the hot items in the current season, and cannot make full use of the space of overseas warehouses to maximize the benefits. At this time, if the largescale goods with slow sales speed or the goods in the off-season are shipped back to China, the transportation costs are also very high, sometimes exceeding the value of the goods themselves, which makes the cross-border e-commerce enterprises fall into a dilemma. Dilemma: Continue to store goods will consume overseas warehouse space, and the cost of shipping back is unaffordable. The pressure on overseas warehouse stocks is also a major problem that continues to be solved. Before we know where China's distribution system is and where it is going to go, we must determine where it has been in the past. Distributors essentially provided basic logistics services (transportation and warehousing) but no marketing support. Distributors were not allowed to import products since that right was reserved for foreign trade corporations (FTCs). Once an import entered the country, it was handed over to the appropriate distributor because FTCs were forbidden to sell the goods downstream [20]. This huge system was formed in the socialist mode, which is based on resource allocation rather than market demands. There was a basic advantage to this model. Given China's size and complicated geographic environment, only the state had the resources to build and operate a costly, national distribution

system. Hence, despite the liberalization of the distribution sector since in the post-reform era, many Chinese and foreign suppliers still rely on this distribution system, because of its extensive network. As China grew more interested in trading with the outside world, leaders recognized the need to liberalize this system. With the introduction of reforms in the mid-1980s, control gradually shifted away from central government control to the provinces and municipalities, which gained the right to establish their own trading companies. By the late 1980s, domestic enterprises that met specified trade volumes were permitted to import and export directly. One of the biggest current changes in China's business environment is the opening of distribution rights. There can be no true market access without distribution rights. Prior to China's entry into the WTO, foreign firms were severely restricted from providing distribution services in China for both their own proprietary operations and for third parties [21]. Foreign companies with multiple operations in China were prohibited from establishing consolidated distribution activities, such as shipping and invoicing [22]. That is changing. However, even after their WTO entrance, China will not phase out most restrictions affecting the sales, service, and distribution sectors to foreign firms until 2005 [23]. Distribution problem exists not only with foreign companies, but also with well-known Chinese companies. When local companies extend their business across provincial borders, regional protectionism forces local companies to allocate extensive costs to shipping, handling and warehousing. For example, supply-chain-related costs can be 30% to 40% of wholesale prices in China, compared with 5% to 20% in the U.S. [24]. Today, China's distribution systems lie somewhere between a rigid planned structure and a free market system. The nationwide State system still exists, but the rigid demarcations between each level, and between different parts of the system, have broken down. Manufacturers may now bypass wholesalers and sell directly to retailers, and FTCs have set up their own distribution networks. Moreover, the three traditional tiers now compete against each other as well as against new, privately owned companies and foreign firms eager for a piece of the pie.

In order to get a more accurate and more detailed picture of China's current distribution system, we will analyze it from two perspectives: a Chinese company's standpoint and a foreign company's standpoint. Chinese culture is distinguished from the Western Culture in many ways, including how business is conducted. A key difference is that Chinese prefer to deal with people they know and trust. On the surface this may seem similar to Western business procedures, however what this really means is that western companies as well as Chinese from different regions have to makes themselves known to Chinese companies before any business can take place. This is known as guanxi, which literally means relationships. Guanxi can also be viewed as "friendship with implications of continued exchange of favors" [25]. Companies conducting business in China must understand

that different business logic applies in China as opposed to Europe and the US. Unless a company understands the Chinese business logic used to reach decisions, nothing can be accomplished. This logic has three levels in decreasing order of importance: Beyond the geographic size and unbalanced development, the political/legal barriers are the most powerful forces that separate China's distribution market. Government interference on economic activities increases the risk to private investment and affects the extent of participation of private sector in the supplying and distribution of goods. Legislation sets the allowed boundaries of distribution firms. While these limits can be placed at a national level, the biggest impact of political/legal barriers on distribution markets is regional protectionism. Provinces and municipalities have erected tariff and nontariff barriers to keep out one another's products. As soon as you move across provincial borders in China, there are barriers. The current focus of logistics is provincial. Local authorities are obsessed with local economic growth, employment, social stability, and tax revenues.

Conclusion

This paper discusses the different logistics modes of cross-border e-commerce in China, the operation process of shared logistics overseas warehouse and the status quo of China's overseas warehouse construction, and puts forward several problems in the development of China's overseas warehouses: the unsalable backlog of inventory is difficult to handle; the lack of localization services and lack of compound talents; the construction of crossborder logistics policy environment is lagging behind, and the legal supervision mechanism of overseas warehouses is not perfect. Then it analyzes the causes of these problems. Finally, from the macro and micro aspects of the two sides to put forward opinions and suggestions, the macro aspect, advocates the establishment of an overseas warehouse alliance, the effective integration of resources among members of the alliance, the establishment of an overseas warehouse information sharing platform, to achieve the optimal allocation of overseas warehouse resources . On the micro level, firstly, the problem of unsalable inventory of overseas warehouses is solved by means of sharing enterprise stocks. Secondly, multiple overseas warehouse enterprises jointly promote localization and share the results of localization in a cooperative manner. Finally, on the government side, it is recommended that the government improve the relevant policies for cross-border e-commerce overseas warehouses. Distribution is widely regarded as one of the most critical determinants of business success in China today. Both foreign and domestic firms face similar difficulties. These include China's overburdened, underdeveloped physical infrastructure; inexpert, underfunded state-owned distribution companies; unbalanced economy development; enormous, fragmented distribution and logistics sector; and regional protectionism. Beyond these, foreign firms also face bureaucratic restrictions that prohibit them from

legally importing, selling, and servicing products in a straightforward manner. The market forces that will drive changes, however, are already in evidence. Many successful export-oriented foreign companies are moving quickly to exploit China inland market. To reach more end consumers in China, these firms are working hard to establish or outsource their necessary distribution channels. China's acceptance into the WTO is an endorsement of its entry into the global economy. It implies that laws governing international business operations will become effective in China. This lowers both the financial and operational risks faced by foreign firms and it encourages their participation in the Chinese economy. In turn this participation increases the scale of China's business services market, and encourages more international supply chain service providers to recognize China as a key market. Information flows, spurred by e-commerce, should bring pressure on current distribution systems in China. The strong demands of distribution and logistics services should lure greater investments into the distribution and logistics sector. These forces will not immediately change all of China's distribution troubles. It will take years to upgrade China's physical infrastructure and expand it into inland areas. But we can safely say the revolution of China's distribution and logistics network has begun.

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