Overseas Experience and Enlightenment of Logistics Management Based on the Cross-Border E-Commerce Environment

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Abstract: Chinese cross-border e-commerce has only recently begun, but it ranks among the world's largest. However, China is still in the exploratory stage of logistics management and application. We can lay a solid foundation for the growth of cross-border e-commerce in China only by selecting an appropriate cross-border e-commerce logistics management model following national conditions. An overview of the current situation of Chinese cross-border e-commerce is presented in this paper. The research focuses on several factors that affect the development of cross-border e-commerce logistics outside the country. Chinese cross-border logistics will be established and developed in accordance with the logistics and mode selection suggestions provided.

1. Introduction

E-commerce has become one of the most critical situations and channels in the trade process due to the advancement of the mobile Internet. With the advent of global integration, all countries and regions have participated in cross-border trade with the help of e-commerce. Due to their respective industries and location advantages, they have become a critical nodes in the global economy and resource cycle. Logistics is a key link connecting both sides of the trade-in e-commerce, and its management mode and efficiency have become key factors that directly impact the development of e-commerce. It is important to note that, despite Chinese e-commerce development being in full swing, the current situation of the late start of cross-border e-commerce logistics makes the Chinese experience relatively insufficient, particularly since there is still room for improvements in the mode and method of logistics management. We should consider analyzing and integrating foreign experience to enhance Chinese logistics management capabilities in the cross-border e-commerce environment. As different countries have different environments and advantages, the overseas experience should also be used as a reference rather than a model. It would be beneficial for the Chinese to gain some insight from experiences outside the region and to combine its characteristics with building a cross-border e-commerce logistics management model and strategy that is in harmony with Chinese characteristics. The research will be undertaken on the logistics management mode of overseas cross-border e-commerce, considering the numerous influencing factors of overseas cross-border e-commerce logistics as the research objective to provide a reference for establishing and developing Chinese cross-border logistics.

2. The Global Development Trend of E-commerce Logistics

Technology has brought human society into the Internet era, and the current Internet user base of more than 4 billion makes global e-commerce show explosive growth. The number of global e-commerce users has exceeded 3 billion, of which more than 10% will be involved in cross-border e-commerce until 2021. E-commerce activities cover more than 10% of the global retail market, with a total transaction volume of more than 18 trillion, and are increasing at an annual rate of 10%. At the same time, the scale of consumers is also showing an annual growth rate of 7.6%. It can be seen that global e-commerce is developing rapidly under the leadership of information technology, and the demand for cross-border consumption is further increasing [1].To further clarify the global

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development trend of cross-border e-commerce logistics, the following will discuss the issue from two dimensions global development trend and international logistics package flow.

2.1 The Development Trend of Cross-border E-commerce

As shown in Figure 1, cross-border e-commerce is experiencing rapid growth in various world regions. Regarding overall cross-border trade volume, Europe ranked first with a value of US$719.5 billion, accounting for 39.05% of global cross-border e-commerce. There are approximately 541.2 billion US dollars in cross-border e-commerce trade, with North America accounting for 29.37% of the total global e-commerce trade. Third, 27.24% of all cross-border e-commerce trade is conducted in the Asian region, with a volume of approximately US$501.9 billion. It is estimated that cross-border e-commerce in Latin America, the Middle East, and Africa totaled about US$80 billion, representing 2.2%, 1.7%, and 0.3% of total global cross-border e-commerce [2]. Undoubtedly, cross-border e-commerce is primarily conducted in Europe, America, and Asia. Due to their geographical locations, resource characteristics, and population composition, cross-border e-commerce trade in Latin America, the Middle East, and Africa is relatively small.

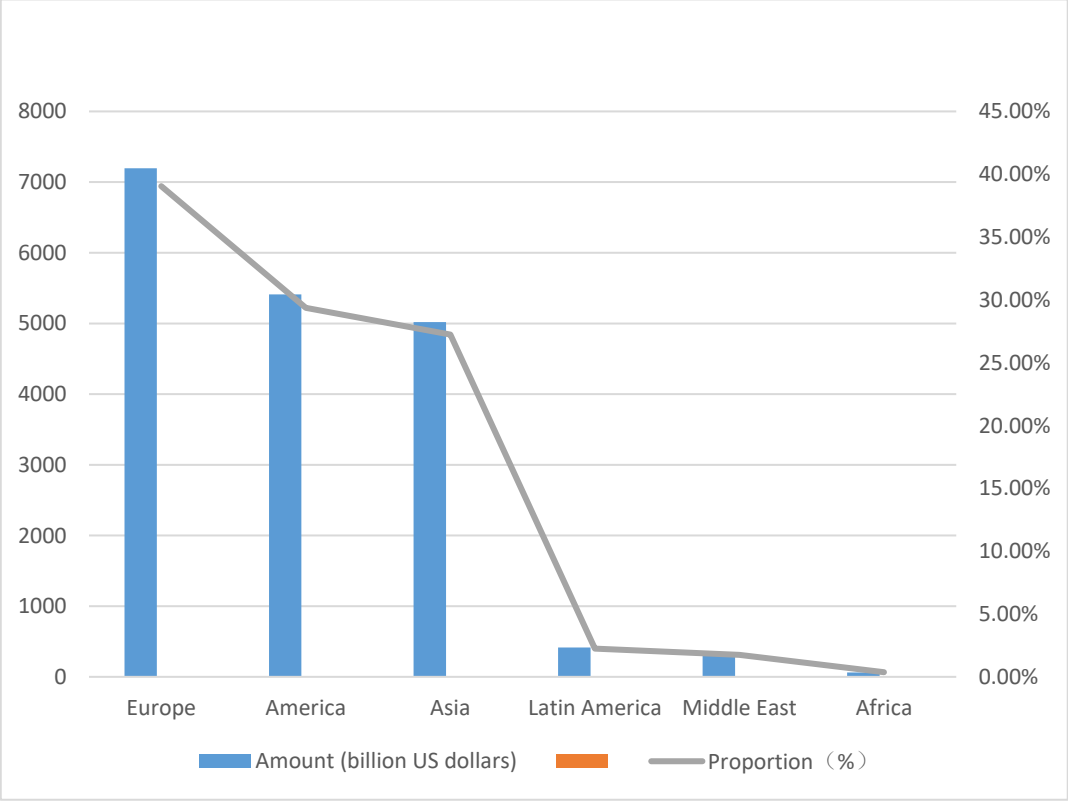

Figure 1 The e-commerce development of various regions in 2021

2.2 Status of Parcel Logistics Flow

Based on the level of economic development in various regions of the world, we can divide the world into developed countries, countries in transition, Asia and Oceania, Latin America, and Africa to analyze package distribution flow. According to World Postal Union data, developed countries accounted for approximately 50.5% of all parcels, Asia and Oceania accounted for approximately 37%, transition economies accounted for approximately 8.2%, Latin America and Africa accounted for 4.3% of the total number of parcels. As can be seen from the above distribution, the ratio between developed countries and developing countries is 50.5:49.5. As a result, it is evident that the frequency and demand of trade logistics are similar. A comparison of developed countries' cross-border logistics and logistics development models shows that the United States, Britain, Japan, France, Germany, and other countries have the best overall scale. It is primarily due to the perfect business and policy environment[3]. It is primarily due to the perfect business and policy environment[3].

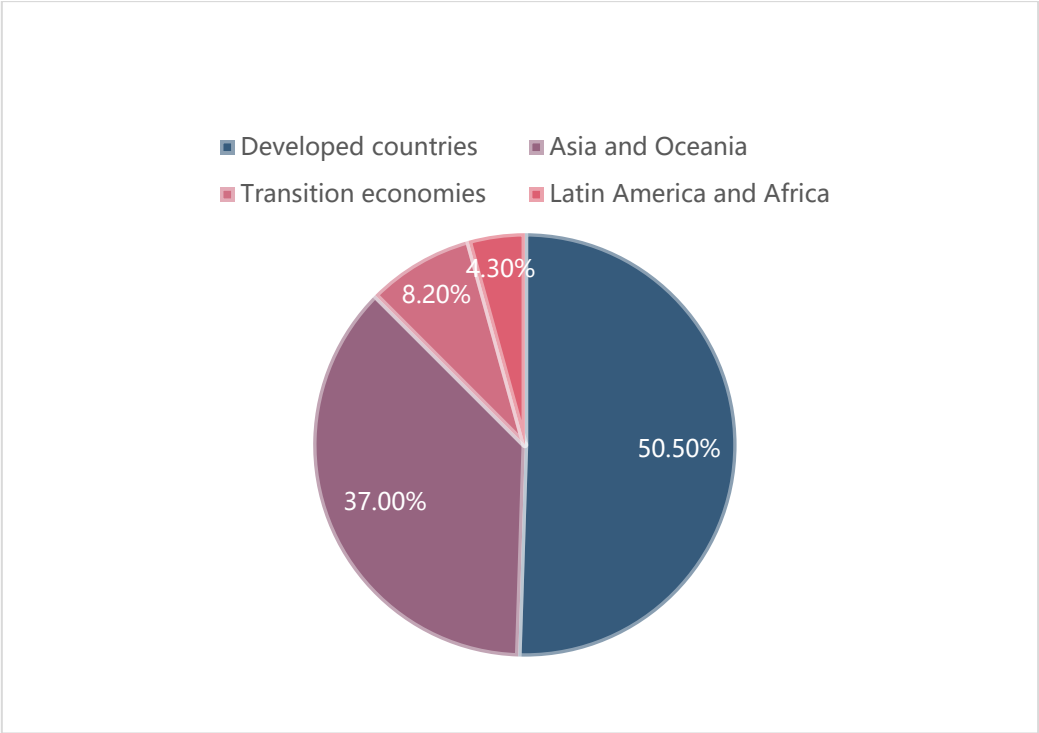

Figure 2 The proportion of international parcel traffic in various regions of the world

3. Status Quo of Cross-border E-commerce Logistics Mode

Explore the logistics mode of cross-border e-commerce outside the territory. In essence, it can be carried out from the categories and characteristics of the existing logistics mode and the selection skills.

3.1 Categories and Features

Common cross-border e-commerce logistics modes are as follows.

3.1.1 Postal Parcel

As the postal network covers the entire globe, postal parcels have become one of the most widely used logistics modes. Most postal parcels are delivered by the Universal Postal Union and KPG, which can use postal systems around the world to deliver parcels. This model is characterized by a broad coverage and various delivery channels, which are its main advantages. The model also has numerous shortcomings: since it relies on the postal networks of various countries, on the one hand, there is a loss of information transmission and interaction efficiency between the postal systems, and on the other hand, the postal system itself has poor timeliness, so the overall efficiency and timeliness are relatively low [3].

3.1.2 International Express

International express mainly refers to the international special delivery business established by multinational express companies, such as FedEx, DHL, SF Express, etc. In this model, global express companies use their management and information technology capabilities to establish global outlets, achieving extremely high timeliness and strong logistics experience. However, the operating cost of this model is high, and the price is relatively high among many models.

3.1.3 Special Line Logistics

Special line logistics is a special line established between countries, such as the common Middle East special line, Australia special line, South Africa special line, North America special line, Asia-Europe special line and so on. Under this model, logistics concentration is high, and the comprehensive cost is between postal parcels and international express. However, most of them are

of a policy nature and cannot be applied if no dedicated line is established between the sender and the destination [3].

3.1.4 Overseas Warehouse

The overseas warehouse is an effective way to deal with cross-border e-commerce logistics. The typical method is to build a warehouse in the destination country through the bulk logistics mode, improve the overall logistics efficiency by improving the delivery efficiency to the terminal, and improve cross-border e-commerce trading experience and quality.

3.1.5 Border Warehouse

The core logic of the border warehouse is the same as that of the overseas warehouse, but it is mainly established at the border of both trading countries. On the one hand, this method can improve the efficiency of customs clearance, and at the same time, it can shorten the distance to the end customer as much as possible to ensure timeliness and service experience. More importantly, compared with overseas warehouses, border warehouses can usually enjoy bilateral trade preferences, gain more convenience from taxation, customs clearance, etc., and avoid some policy risks.

3.1.6 Third Party Logistics

Third-party logistics often rely on developing its own logistics industry in its own country or destination country. For developed countries, third-party logistics is relatively mature, and the delivery scope and delivery time are significantly higher than postal parcels. However, the construction of third-party logistics in some developing countries is not mature enough and is still in development.

3.2 The Choice of Logistics Mode

The choice of logistics mode should be based on the judgment of the market and logistics needs. For logistics scenarios without timeliness requirements, economical channels can be the mainstay. For example, the e-mail treasure of the United States Postal Service has an aging time of about 5-10 days, depending on the distance. This channel has good timeliness and provides financial services for customs clearance and settlement, which is more cost-effective. International Express or third-party express can be considered for logistics scenarios with certain timeliness and security requirements, especially for delivery services. If there is a demand for high-efficiency and high-profile exchange services, especially in e-commerce service scenarios, the border warehouse or overseas warehouse mode can be considered as much as possible [4].

It is particularly important to consider local policy factors when establishing overseas warehouses. In Brazil, for example, the local tax policy is quite strict. It is costly and carries many policy risks to establish an overseas warehouse in Brazil. Therefore, this model is not appropriate for the country. Considering Russia's high tariffs and value-added tax, Russian customers tend to purchase small, low-value commodities when purchasing overseas. In addition, the overseas warehouse model is unsuitable for cross-border e-commerce with Russia [5].

4. The Core Factors Selection of the Logistics Mode of Overseas Cross-border E-commerce

According to the above, when the developed countries establish the logistics mode, they mainly make decisions according to their characteristics. This chapter will focus on the core factors of indecision.

4.1 Seller Size

When choosing a logistics mode, it is important to consider the seller's size. Due to its rich logistics needs, a comprehensive e-commerce platform with many sellers and strong management and financial capabilities can easily integrate similar logistics needs through clustering. Overseas or border warehouses can reduce comprehensive costs and improve the user experience. It is also possible to establish the overall brand and service image through international express at a relatively

high cost [6]. Several methods can reduce costs for small and medium-sized individual sellers, including postal parcels, dedicated line logistics, and other methods.

4.2 Consumer Demand

Consumer demand is one factor that directly drives service providers to choose logistics modes. For different customer groups, their logistics needs are bound to be different. High-income people expect better delivery services but are willing to bear relatively high logistics costs. Consumers who are not sensitive to logistics timeliness can choose lower-cost logistics modes such as postal parcels.

4.3 Transaction Size

The frequency and batch of transactions primarily determine transaction size. It is possible to improve the return and exchange time limit within a relatively reasonable cost range if there is low transaction frequency. Transaction costs should be reduced as much as possible if the transaction frequency is high, and postal parcels or other channels should be sacrificed in exchange for certain timeliness. Establishing overseas warehouses or border warehouses is more appropriate for commodities with larger batches, thereby reducing the unit transportation costs. The overseas warehouse or border warehouse mode is not suitable for a small number of different commodities since it will consume many storage costs [6].

4.4 Product Attributes

With the development of e-commerce, the categories of goods are constantly changing. For different types of goods, consumers have different perceptions of them, which makes returns and exchanges become the norm. For commodities with fixed specifications and no significant differentiation, consumers must have a high perception ability, so the probability of return and exchange is low, and such logistics models with relatively low timeliness can be considered. Consumers are prone to have different perceptions of household appliances, clothing, furniture, and other commodities, so they can consider a high-efficiency logistics model to improve the efficiency of returns and exchanges.

4.5 Development Environment

It is impossible to develop cross-border e-commerce logistics without the support of local development environments. Financial, political, and trade policies at the local level directly impact the cost and efficiency of cross-border e-commerce development. In developed countries, e-commerce logistics is relatively complete and benefits from a perfect logistics environment and policy system.

5. The Development Experience of Overseas Cross-border E-commerce Logistics and Enlightenment in China

5.1 Overseas Cross-border E-commerce Logistics Development Experience

5.1.1 The Competitiveness Enhancement of Personalized Logistics Services

In developed countries, the logistics industry is relatively high in quality because its development has evolved from meeting the demands for basic logistics services to focusing on advanced service quality demands. For example, FedEx's services cover a variety of scenarios, such as low-failure economic logistics, high-efficiency one-day delivery, medium-time next-day delivery, and next-day delivery, and are capable of meeting the needs of a variety of logistics customers. It is clear from the subdivided logistics scheme that the logistics enterprise understands the concept of personalization, which further enhances the overall competitiveness of the logistics industry [7].

5.1.2 The Third-party Logistics Gradually Matures and Forms a System

The third-party logistics industry has become the dominant force in developing and improving logistics systems in developed countries. In an environment dominated by large traditional logistics

enterprises and policy-based logistics, logistics practitioners are encouraged to innovate actively and reform to improve logistics flexibility. Eventually, third-party logistics developed a higher management capability and serviceability. In addition to providing a platform for differentiated e-commerce logistics services, the collaboration between third-party and traditional logistics emphasizes the vitality of capital in logistics.

5.1.3 Healthy Development Guidance Of Industries By National Laws and Policies

Policies can affect the development of the e-commerce logistics industry. The relevant policies and regulations on cross-border e-commerce logistics in developed countries have been relatively rich and perfect after a long development cycle, covering both guidance and supervision of cross-border logistics enterprises, as well as constraints and guidance on the industry's development. A good example is the United Kingdom, which has perfected its intermodal transport mechanism and facility integration scheme for sea, land, and air transport. As soon as a logistics center is constructed, selecting the appropriate logistics channels and passages according to the facility's needs is only necessary, and a standard logistics service system can then be developed [8]. The German government has formulated over 1,000 industry and legal standards regarding cross-border logistics, which serve as the basis for establishing and operating a cross-border logistics system.

5.1.4 Supports of Modern Technology for Logistics Development

With the advancement of informatization, the logistics industry cannot continue to develop and improve without information technology. With the advent of logistics modernization and informatization, modern technology has become an essential component of logistics efficiency, quality, and cost reduction. Several major logistics companies have successfully used the logistics intelligent planning and tracking system based on the Internet of Things and big data.

5.2 The Enlightenment of the Development of Overseas Cross-border E-commerce Logistics to China

5.2.1 Improvement of Information Utilization and Coverage

Whether it is personalization, delivery time, or line efficiency, the development process of cross-border e-commerce logistics outside the territory is highly dependent on information technology. At the same time, logistics tracking and warehousing are advancing towards the Internet of Things and technological advancements. This suggests that the modernization of cross-border e-commerce logistics can be achieved by improving the utilization rate and coverage of information technology. It is possible to use an automated warehouse environmental management and control system to precisely control temperature and humidity, as well as an automated fire protection system and an internal and external air exchange system to maintain an optimal storage environment. GPS and geographic information systems can be used to track the status of vehicles and logistics, and even sensors can be used to track drivers and passengers in real-time. Electronic traceability codes can be used for full control of item tracking [7]. With the help of big data and artificial intelligence technology, it is also possible to optimize customer information mining, route planning, distribution planning, and other aspects in order to generate a higher level of value.

5.2.2 Pay Attention to the Improvement of Personalized and Logistics Service

It can be seen from overseas experience that personalized logistics services can significantly improve the level of logistics services. Today, with the logistics industry's gradual homogenization, customized service has become a breakthrough point to enhance its competitiveness further. This point has certain reference significance for developing cross-border e-commerce logistics in China. In the early Chinese stage of cross-border e-commerce logistics, low cost is still the core service goal, and it cannot respond to the differentiated requirements of customers. Although domestic logistics has provided differentiated services such as same-day delivery and next-morning delivery, payment collection, etc., in the cross-border e-commerce environment, the mechanism mentioned above still has specific difficulties. At the same time, it can make full use of information technology to record,

track and give feedback to customers' individual needs, further improve the ability of customer management, and actively respond to customer feedback, improve its service system, and improve the level of logistics services from a personalized perspective.

5.2.3 Pay Attention to the Development of Third-party Logistics

There has been a rapid development of third-party logistics in Europe, the United States, and other countries. In Europe and the United States, third-party logistics have developed and matured, resulting in differentiated services, increased competition, and further promoted the entire industry's growth. China needs to encourage and cultivate third-party logistics. To promote domestic and international e-commerce, the government should expedite the formulation of logistics support and regulatory policies and, simultaneously, encourage private enterprises to participate in the innovation of logistics technology and management, improve logistics efficiency, and improve logistics service mechanisms. Improvements in the logistics service system [8].

5.2.4 Further Improvement of Relevant Law Regulations and Policies

Laws and regulations must be improved to facilitate the development of cross-border e-commerce logistics. Based on overseas experience, it is evident that perfect laws and regulations can play a significant role in ensuring and ensuring a standardized and healthy operation of the cross-border logistics industry. Cross-border e-commerce logistics in China are governed by the same laws and regulations as ordinary logistics. Although some regions have taken the initiative in planning and operating cross-border e-commerce logistics parks, cross-border e-commerce logistics legislation is still relatively void, hindering the development of cross-border e-commerce logistics. To this end, the foreign experience can be utilized to learn from, legislate, and improve financial support, tax policy, parkland and infrastructure planning, industry standards, and customs clearance efficiency. As a result, establishing and improving the cross-border e-commerce logistics system can be promoted.

6. Conclusion

As a developing country that has entered a stage of rapid development, China has gradually entered the stage of exporting commodities from domestic demand. It is foreseeable that China will become the mainstream player in cross-border e-commerce. Under this development trend, the mode selection and optimization of cross-border e-commerce logistics have become one of the core elements of the future development of cross-border e-commerce. This paper analyzes the cross-border e-commerce logistics models of countries outside the region, summarizes a series of experiences and characteristics that can be used for reference, and puts forward targeted cross-border e-commerce logistics management suggestions for China. For China in the future, on the premise of firmly promoting and guiding the technological upgrading and transformation of the logistics industry, it is necessary to improve the comprehensive level of logistics services through personalized services. At the same time, third-party logistics should be further developed to fill the gap in logistics services. In addition, the optimization and protection of the environment need to be achieved through the improvement and optimization of relevant laws, regulations, and policies. It is hoped that the research in this paper can be helpful to logistics management in the Chinese cross-border e-commerce environment.

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