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Research on the Coordination Mechanism and Improvement Strategy of the Business Model from China's Export Cross-border E-commerce

——Based on the Theory of Coevolution

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Abstract:As a new business model of e-commerce,export cross-border e-commerce has a great significance to promotesustainable development of domestic economy and meet the demands of foreign consumers. With rapid development of export cross-border e-commerce in recent years, many problems occur that hinder its development, such as shortage of relevant professionals and lack of the innovation on business model. The main reason is that the export cross-border e-commerce has attracted numerous participants, who prefer to enhance their competitiveness by any means to maximize their self-interest without considering the long-term development on a "win-win" basis. Thus, this article proposes that the participants can overcome their difficulties and gain the win-win goal by mutual benefits and mutual constraints based on the theory of coevolution, so as to promote the quick development of export cross-border e-commerce.

Keywords:Export cross-border e-commerce, Coordination mechanism, Improvement strategy, Coevolution

1. INTRODUCTION

Cross-border e-commerce is defined as an international business activity through which the transactions belonging to separate customs territories display, negotiate and conclude deals electronically and delivery goods by cross-border logistics^[1]. It can be divided into export cross-border e-commerce and import cross-border export e-commerce from different trade directions.This research focuses on the export cross-border e-commerce with China's national conditions. Shanghai, Chongqing, Hangzhou, Ningbo and Zhengzhou takes the lead, with the pilot project of China's cross-border e-commerce services launched by the National Development and Reform Commission (NDRC) and General Administration of Customs in December 2012, due to their good foundation of economy and foreign trade. After this, Shenzhen, Harbin and other cities become pilot cities of cross-border e-commerce with strong growth.

The theory of coevolution is the combination of Darwin's theory of evolution and theory of "punctuated equilibrium" proposed by two scholars N·Eldridge and S·J·Gould's. This theory includes:① in nature, where there is the most intense competition, there is the fastest evolution;②in the evolution of multiple populations, populations have influence on each other;③there is survival of the fittest struggle and mechanisms of mutual benefit and mutual constraints at the same time. Applied in the enterprise economy, it mainly means enterprises conduct various forms of exchange between each other, which contain cooperation and competition^[2]. Additionally, it emphasizes that only various enterprises constantly enhance their competitiveness and

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collaborate with other companies can they improve the evolutionary level of the entire enterprise population and achieve "win-win" situation. Yet, business ecosystem is the instance of collaborative evolutionary theory in the enterprise economy.

2. THE FEATURES AND MARKET STRUCTURE OF EXPORT CROSS-BORDER E-COMMERCE

2.1 The features of China's export cross-border e-commerce

2.1.1 The large scale and rapid growth in export transactions

China's export cross-border e-commerce transactions amounted to 2.73 trillion yuan in 2013, with a year-on-year growth of 31.9% and accounted for 88.2% of total cross-border e-commerce transactions^[3]. In 2014, it amounted to 3.59 trillion yuan, with a year-on-year growth of 31.5% that accounted for 85.4% of total cross-border e-commerce transactions in China^[4], as shown in Figure 1:

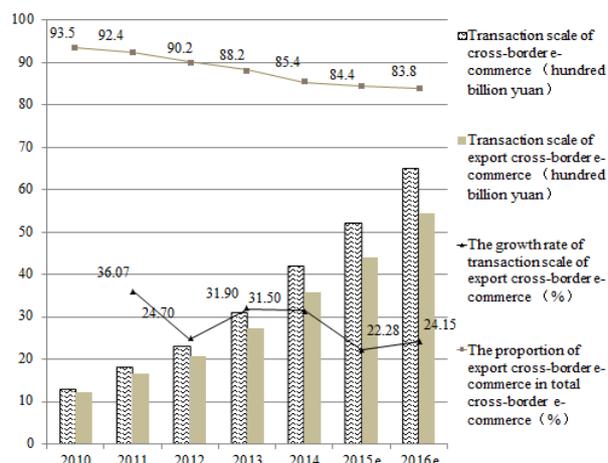


Figure 1. The transaction size of China's cross-border e-commerce and Export cross-border e-commerce from 2010 to 2016

Source from: IRResearch.

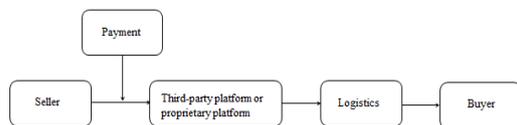


Figure 2. The transaction process of China's export cross-border e-commerce

From the data above, we can see that China's export cross-border e-commerce has developed rapidly and played more and more important role in import-export trade due to a series of favorable national policies and main active market players' participation. In the meantime, the trading links of export cross-border e-commerce are perfected gradually which ensure its stable development in the next few years. Export cross-border e-commerce has a great potential for development in China and B2B model runs better among it.

2.1.2 Strong international demand for Chinese commodities and gradual maturity of its platform

In 2013, PayPal Company held a survey to more than 5,000 consumers from the five major cross-border e-commerce markets in United States, Britain, Germany, Australia and Brazil. Combining the internal cross-border transactions data's analysis, PayPal concluded that the demand from five markets' for Chinese commodities amounted to 67.9 billion yuan in 2013. It is estimated that this figure will reach 144 billion yuan by 2018 which shows strong international demand for Chinese commodities.

In recent years, China's export cross-border e-commerce platform has been improving day by day under the support of national policies and the positive innovation of export e-commerce participants^[5]. It has evolved into a network marketing system integrating transactions, payment, logistics, services and financing by 2015,

Table 1. DHgate's events

Year	Events
2004	DHgate was established.
2005	The international trading platform Dhgate.com was officially launched.
2006	DHgate obtained the first financing.
2007	DHgate's performance has achieved 8 times increase and became an important strategic partner of Google in China market.
2008	DHgate2.0 was brought online and became a strategic partnership of eBay.
2009	DHgate formed business partnership with UPS and its payment tool Dhpay was developed.
2010	DHgate completed the third round financing and launched the "CCB DHgate ePAT" online micro-finance service with China Construction Bank.
2011	DHgate's mobile platform was formally launched.
2012	DHgate set up overseas customer call center to provide 24-hour customer advisory service in the Philippines.
2013	DHgate provided online delivery service and launched international eYoubao.
2014	DHgate completed the fourth round financing and launched Russian platform.
2015	DHgate launched multilingual operating site and announced a strategic partnership with Huatai Insurance Group.

through which Chinese products are sold all around the world. It not only use the global payment, such as Visa Cards etc., but also employs more than 30 kinds of online payment tools from other countries, which makes it more convenient for consumers around the world and reduces the platform's cost at the same time [6]. Moreover, compared with traditional foreign trade, the transaction costs of cross-border online shopping are reduced greatly because of the short and smooth selling supply chain of Chinese export cross-border e-commerce.

2.1.3 The linearization of intermediate links and low entry threshold to small and medium enterprises

In traditional foreign trade, commodities reach buyers through a series of complex transactions of inquiry and offer. In contrast, the sellers can sell commodities directly to buyers by export cross-border e-commerce platform avoiding complex intermediate links and less intermediate costs [7]. In this way, export cross-border e-commerce realizes its linearization in intermediate links, as shown in Figure 2. Currently, part of China's export cross-border e-commerce platforms such as DHgate and Alibaba International Station provide cheaper services of customs clearance and international logistics for foreign trade enterprises, which also make it possible for unqualified small and medium enterprises (SMEs) to participate in international trade.

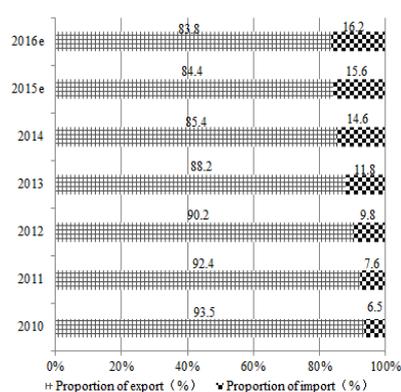


Figure 3. The proportion of China's export and import cross-border e-commerce from 2010 to 2016

Source from: China Internet Network Information Center

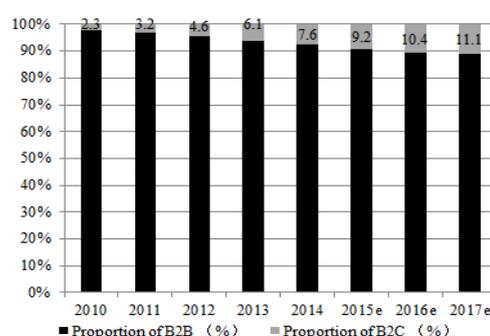


Figure 4. The proportion of China's B2B and B2C cross-border e-commerce from 2010 to 2017

Source from: IRsearch

2.2 The features of market structure in China's export cross-border e-commerce

In 2014, the volume of China's export cross-border e-commerce accounted for 85.4% in total cross-border e-commerce, while import cross-border e-commerce accounted for 11.6%, as shown in Figure 3 above. In which, it shows that China's cross-border e-commerce is still in the early stage of development which focuses on export cross-border e-commerce. But, with high demand for foreign commodities of domestic consumers, the proportion of import cross-border e-commerce will increase.

B2B and B2C are the main models in China's export cross-border e-commerce. In which, the volume of B2B transaction accounted for 92.4% in total China's export cross-border e-commerce in 2014, which occupied absolute advantage, as shown in Figure 4 above. Moreover, the coordination mechanism is lack of effective enforcement for organizing, monitoring and coordinating business activities in different links. Therefore, it is in favor of promoting current development of China's export cross-border e-commerce by improving and optimizing the coordination mechanism of it [8].

3. THE DEFICIENCIES OF THE COORDINATION MECHANISM IN CHINA'S EXPORT CROSS-BORDER E-COMMERCE

From the analysis above, we can know that there are numerous problems of the coordination mechanism in China's export cross-border e-commerce currently. The existing coordination mechanism is a "linear" mechanism in which the participants are of single species and the contact between the links is not tight [9]. When risks or problems occur, enterprises can only rely on self-coordination. In this fragile coordination mechanism, the development of enterprises can only count on self-discipline and self-regulation, which are unable to carry

out effective interaction with other enterprises. Once the problem of an intermediate link appeared, other links would not react quickly and prevent losses efficiently. In a word, the coordination mechanism of China's export cross-border e-commerce is full of hidden troubles and defects on account of many uncertainties, which will be shown in the following points.

3.1 The weak awareness of enterprise brand and backward cross-border trade service

The core enterprises such as cross-border e-commerce operators are mostly SMEs. For they hesitate to try the innovativeness of business model for lack of funds or technology, most of them still adopt traditional marketing model. There is weak awareness of enterprise brand and intellectual property in a plenty of Chinese enterprises and counterfeit and shoddy products are flooding the market^[10], which not only make foreign consumers experience shopping unpleasantly but also damage the reputation of enterprises and electronic business platform. This circumstance make merchants and platform lose their sustain development force.

Payment and logistics are two unavoidable difficult tasks in the cross-border e-commerce service. At present, the third-party payment is the main way of payment in China's export cross-border e-commerce, but its safety and convenience still need improving^[11]. In the aspect of international logistics, there are two most prominent problems, such as high cost and low aging, could not be solved. Nowadays, overseas positions, international express and postal packets are the main methods in China's international logistics, which are at a slow speed or high-cost and risk of cargo backlog.

3.2 Low security in information and lack of standardized credit evaluation system

Export cross-border e-commerce platform is a virtual Internet platform. On this platform, buyers and sellers do not need to meet when they deal so that they are uncertain of the identity of each other. Simultaneously, different nations have different criteria for the determination of the identity for their different laws in virtual platforms^[12], which provide an opportunity for criminals to cheat and obtain illegal benefits by masquerading or embezzling other person's identity.

The enterprises and consumers are global in export cross-border e-commerce platform, who have different purchasing habits, selling habits, communication modes and payment methods, that make it impossible to establish a standard credit evaluation system to evaluate the sellers' and buyers' credit.

3.3 Too many enterprises and fierce competition

Due to the low entry threshold, there have been influxes of many enterprises in the industry in recent years, which led to the fierce competition. Besides, homogeneity is a stubborn problem in many goods in China. Among the numerous identical commodities, an enterprise had to depress the commodity prices if it aimed to gain new customers and gained advantage in the competition^[13]. Besides this, the target customer groups of cross-border e-commerce are those who thought that the commodities on the website were cheaper or they could not buy with money locally, which determine that the price war between cross-border e-commerce enterprises is inevitable and intensify fatherly the competition between enterprises.

4. CASE STUDY ON DHGATE

DHgate is the first website that offers online cross-border transaction services for SMEs in China, which is also the leading online trading platform in the world. Its main business model is B2B cross-border trade, principally selling electronic products in some developed markets, such as Europe, America and Australia.

Since its inception in 2004, DHgate has strengthened its operational capacity. It insists the exploration in supplier selection, product upgrading and supporting services and enhances collaboration with overseas enterprises for mutual promotion and restriction. Eventually it formed a more mature business model for its development. DHgate adopts commission system which means users can register on DHgate for free and DHgate will charge fees after the successful transaction between sellers and buyers. Besides, DHgate provides translation tools on the platform for the sellers and buyers who are from different countries and regions in the

world to help them communicate more smoothly. DHgate has had 1.2 million domestic suppliers, 5.5 million buyers and 25 million kinds of commodities by 2014. It ranked the first in Asia-Pacific region and the sixth in the world among the e-commerce sites. DHgate's events are summarized as shown in Table 1.

4.1 The evidences for the DHgate's success

4.1.1 Employing professional talents and innovating marketing methods

DHgate has experienced the ordeal from various aspects by now. DHgate's current CEO Wang Shutong is one of the entrepreneurs who first launched e-commerce in China. Her accumulation of human resources and management experience in e-commerce industry contributes to gaining more chances for DHgate's financing. DHgate laid emphasis on innovation and upgraded its operating platform constantly to meet the requirements of buyers and sellers as well as provide better user experience. Also, DHgate offered effective information flow and reliable funding stream for cross-border trade. Furthermore, DHgate used the EDM (Email Direct Marketing) model to expand overseas market with low cost efficiently and continually created new customers.

4.1.2 Emphasizing intellectual property and cooperating with high quality enterprises

In the process of development, DHgate attached great importance to the protection of intellectual property rights. For the choice of cooperative enterprises, DHgate always preferred enterprises which focused on intellectual property protection with good reputation, such as Google mentioned in Table 1. DHgate's high quality products attracted a large number of users. Its transaction size achieved an eight times increase in 2007. Through laying stress on intellectual property rights and cooperating with high-quality enterprises, DHgate has enhanced its operation capacity and won a good reputation in the international market. It also contributed to the further development of associated enterprises.

4.1.3 Taking advantage of favorable national policy and developing diversified payment methods

In 2014, State Administration of Taxation and Ministry of Finance announced the preferential tax policies of export retail in cross-border e-commerce by issuing *The Notice of the tax policy of export retail in cross-border e-commerce*. In 2015, more supporting policies on cross-border e-commerce were introduced which gradually eliminated the problems in payment, logistics, customs declaration and inspection as well as financing. By virtue of these favorable national policies, DHgate reformed and upgraded actively and also strengthened the cooperation with other enterprises. For example, it obtained the fourth round financing in 2014 to launch a multilingual operating site in 2015, which contributed to expanding the international market.

As for payment methods, DHgate started their payment service by cooperating with PayPal. Nevertheless, PayPal, which was preferred by customers from United States and Oceania, is not suitable for all consumers. European is accustomed to visa card or Moneybookers. Therefore, DHgate tried to reach agreements with Visa International Service Association and other payment institutions or enterprises. DHgate provided various payment methods, including visa card, Moneybookers, Western union and worldpay etc. Moreover, DHgate opened up local payment service in other nine countries, such as Britain, Australia, France and Germany.

4.2 The deficiencies of DHgate's e-commerce system

4.2.1 Over-reliance on third-party payment platform

In terms of payment method, DHgate mainly depends on third-party payment, which is its most serious problem when comparing with other cross-border e-commerce platform. If a third-party payment company claims to increase pay rates or cease cooperation, DHgate is facing a high risk of payment on account of the lack of its own payment platform.

4.2.2 Imperfect credit evaluation system and high-cost logistics

Credit evaluation system is an essential part for the cross-border e-commerce. DHgate's credit evaluation system demonstrates the seller's integrity and operational capacity according to the buyer's assessment to the seller. However, DHgate is more inclined to protect the rights of the buyer, so it is not very strict with the

management of the buyer's integrity. Otherwise, all commodities will be delivered to the overseas enterprises or consumers by logistics in the cross-border e-commerce. But both domestic and international logistics are the bottleneck in the development of China's cross-border e-commerce. Unfortunately, DHL failed to make breakthrough in logistics. As a result, its logistics cost remains high today.

5. THE IMPROVEMENT STRATEGY OF THE COORDINATION MECHANISM IN CHINA'S EXPORT CROSS-BORDER E-COMMERCE BUSINESS MODEL

According to the theory of coevolution, the essence of the development and promotion of China's export cross-border e-commerce is concerted evolution. The evolution of an enterprise will cause changes to other enterprises, thereby driving the evolution of the entire export cross-border e-commerce system. Therefore, the improvement of the operating conditions of an enterprise in the export cross-border e-commerce system can lead the progress and optimization of the other enterprise during their development, so as to achieve the perfection of the coordination mechanism among enterprises.

5.1 Upgrading supporting services and promoting enterprises' awareness of brand

While enhancing payment security by using advanced technology, China should strengthen cooperation with other countries to establish an authentic, accurate and complete credit system of cross-border payments. Also, China ought to collaborate with many other payment enterprises to realize the diversification of payment method. In terms of logistics, local logistics enterprises are supposed to improve infrastructure continuously and draw lessons from the advanced management skills from foreign logistics enterprises. In this way, they can accomplish their own evolution and enrich their business scope and content. Meanwhile, they can intensify cooperation with foreign logistics to establish logistics alliance in cross-border e-commerce.

China's enterprises in export cross-border e-commerce can gradually get rid of the inferior imitation and homogenization in products by attaching importance to the protection of intellectual property rights and brand management. At the same time, enterprises can expand the international market and establish their own brand with superior products and service.

5.2 Improving Credit Evaluation System and issuing guiding and supporting policy

The credit evaluation system of cross-border e-commerce should be fair and equitable in the protection of buyers and sellers' rights. When implementing high credit constraints for sellers, the supervision and management of buyers' credit should be reinforced. The authenticity of assessment from buyers and the quality of buyers can be guaranteed via the real-name certification of overseas buyers. The government should issue relevant laws and regulations to regulate the user registration on export cross-border e-commerce platforms and supervise the reality and legality of the user information dynamically. The government should have more cooperation and exchanges with other countries to develop a reasonable dispute settlement mechanism as well as safeguard the legitimate rights and interests of cross-border business and consumers in various countries.

5.3 Cultivating professionals and innovating business model

The universities should cultivate professionals in cross-border e-commerce actively to reserve high-quality human resources in the management and technology of cross-border e-commerce. The talents who understand product, technology, marketing and industry regulations are in great need. They are able to change the existing outdated business model drastically, promote innovation and evolution of China's export cross-border e-commerce business model and improve the overall situation of export cross-border e-commerce industry.

5.4 Strengthening the construction of industrial environment

Cross-border e-commerce's sustainable development is inseparable from the support of other businesses and industries. In addition to logistics enterprises and payment enterprises, investment and financing institutions, industry associations also play an important role. Investment and financing institutions can provide financial services, which are crucial to cross-border e-commerce's overseas business expansion and optimization. Industry

associations can develop realistic industry standards and provide reasonable development strategies for the development of cross-border e-commerce, which is of great significance.

In allusion to the existing features, market structure and problems in China's export cross-border e-commerce, this article proposes the coordination mechanism and improvement strategy of China's export cross-border e-commerce by combining the theory of coevolution with the above improvement strategy.

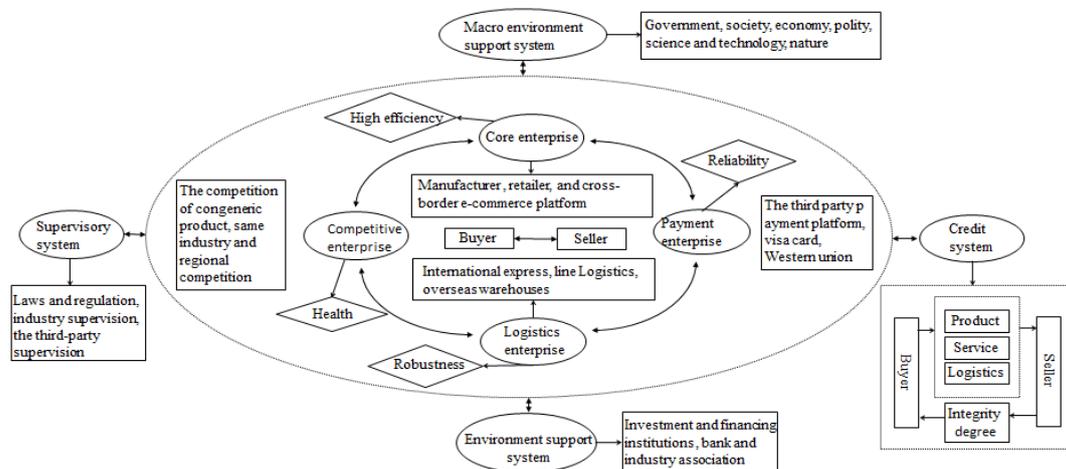


Figure 5. The innovative business model of China's export cross-border e-commerce

As shown in Figure 5, in the cross-border e-commerce, there are mutual promotion and constraints among the core enterprises, payment enterprises, logistics enterprises and competitive enterprises in terms of the commodities trading between buyers and sellers. The core enterprises mainly include manufacturers, retailers, cross-border e-commerce platform and export enterprises. Manufacturers produce high quality products and the cross-border e-commerce platforms provide export enterprises a platform on which export enterprises can sell the domestic goods to global buyers. Correspondingly, retailers have greatly enriched the goods and services on the cross-border e-commerce platform. After concluding the transaction between buyers and sellers, the fund can be delivered via the third-party payment or payment tool of the platform. And then the commodities will be transported to the customs by domestic logistics enterprises. Finally, the commodities will be sent to foreign consumers or businesses after customs inspection. If the retailers or the platform have built overseas warehouses, the commodities can be directly sent to foreign consumers or businesses without customs inspection. In development process of cross-border e-commerce, enterprises should also pay attention to the competitors. The interactive relationship of enterprises, such as enterprises of the similar products, enterprises of the same industry and enterprises in the same region, should include both competition and cooperation. Emphasis should be placed on the reciprocity and mutual benefit between enterprises, so as to achieve "win-win" goal instead of competing perniciously for customers and market and ultimately making various enterprises suffer losses.

Cross-border e-commerce industry is also inseparable from the support of other systems, such as macro environment support system, credit system, environment support system and supervisory system. In China, the macro-environment consists of government, society, economy, politics, technology and nature. If an industry wants to survive and develop, it must always focus on the development direction of national policy and social economy, which will be greatly beneficial to the enterprise's operational performance. Meanwhile, a supervisory system should be set up by government, industry and the third-party regulatory body, in order to regulate the development of cross-border e-commerce from the perspectives of government, laws and industry. Furthermore, the investment and financing institutes are supposed to carry out relevant business to provide financial support for the development of cross-border e-commerce. Industry associations should become more mature in guiding and restricting the development of cross-border e-commerce. Finally, the credit system, which is of great

importance to the development of enterprises in an era of credit, should be built to restrain both the sellers and the buyers. Through the system, buyers can evaluate sellers' commodities and services. And sellers can also make assessments of the integrity of buyers, which can be the reference for later buyers and sellers.

6. CONCLUSIONS AND PROSPECTS

After ten years' development, China's export cross-border e-commerce has made some achievements, making a significant contribution to stimulating China's foreign trade growth, optimizing the foreign trade structure, extending the living space of export enterprises and the increasing the convenience of transaction for domestic and foreign consumers. However, there is still much room for improvement of it in finance and the construction of credit system, which are the two problems needed to be solved in the future.

The development trend of China's export cross-border e-commerce can be seen in the following aspects. Firstly, the product categories and sales market will be more diversified. On one hand, the diversification of products can meet the differentiated demand of consumers from different countries and regions. On the other hand, the diversification of target market will bring new business growth point to China's export enterprises. Secondly, the proportion of B2C cross-border transactions will experience a steady growth and synergic development with B2B cross-border transactions. Thirdly, China's export cross-border e-commerce will be more mobilized. With the development and progress of advanced technology, the mobile export cross-border e-commerce will occupy a greater proportion in the entire export cross-border e-commerce. Finally, the export cross-border e-commerce system and the links of trading will be more mature in the collaborative development.

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