Shuai Guan*

School of Management, Henan University of Science and Technology, Luoyang 471023, Henan, China

*Corresponding author

E-mail: guanshuai@haust.edu.cn

Abstract

As a new international trade situation, cross-border e-commerce has become a link to promote the development of foreign trade and stabilize the international industrial supply chain. China's cross-border e-commerce has grown by more than 30% annually, which is not only a new engine to promote foreign trade growth and a new shortcut to foreign trade transformation, but also a new channel to encourage import consumption and stimulate domestic demand. At the same time, it also provides enterprises, especially small and medium-sized enterprises, with the possibility of better docking the international market and expanding the international market at lower cost. In order to cope with the new order of international trade, Chinese government has launched the initiative of setting up Cross-border E-commerce Comprehensive Pilot Areas, which have made some achievements, but also faces a series of challenges. This paper summarizes their development status and experiences first. Based on the in-depth analysis of the problems and future trends, it puts forward the development strategy to provide reference for the sustainable development of cross-border e-commerce.

Key words: Cross-border E-commerce, Intelligent Logistics, Big Data, Comprehensive Pilot Areas, Cross-border E-commerce Industry Layout

Tob Regul Sci.™ 2021;7(5-1): 3767-3776

DOI: doi.org/10.18001/TRS.7.5.1.151

1. Introduction

With the popularization of the Internet and the promotion of intelligent cell phone, the wave of globalization of e-commerce is inevitable. As a new form of international trade, cross-border e-commerce has become a link to promote the development of foreign trade and stabilize the international industrial supply chain, which has attracted wide attention and research interest of scholars at home and abroad. Digital trade is a prominent feature of the fourth wave of globalization and an organic part of e-com

merce. The European Union (EU) is especially interested in the promotion of CBeC because it is an important tool in its strategy to achieve the Digital Single Market in Europe (Valarezo, Angel, Perez-Amaral,etc. 2018). Digital trade is a prominent feature of the fourth wave of globalization and an organic part of ecommerce. The development of global digital trade has a tremendous impact on the global supply chain, industrial chain and value chain. As a new form of international trade, the advanced stage of cross-border e-commerce development is global digital trade. It will promote the full arrival of the era of digital

trade (ShuZhong M, 2020). In China, crossborder e-commerce has attracted the attention of the government and enterprises because it has become an important part of promoting China's economic growth. In the Chinese government work report for Two Sessions 2019, key words about E-commerce and internet were mentioned lots of times and became hot spot of concerns in the society soon. These terms included Internet+, the cross-border E-commerce, the industrial Internet, the digital economy, the sharing economy, the online and offline consumption, the Internet+education and etc. (Yu L, 2019). With the implementation of the Belt and Road Initiative of China, cross-border e-commerce has become one of the main ways of trade and a new engine pushing the economic and trade development of China and other countries such as Russia (Jiuru Z, 2018; Yun-Peng Y, Jian-Zheng Y, Xuan Z, 2018). More traditional enterprises and brands began to move towards center stage and China's crossborder e-commerce industry was dynamic in 2019 (Zhiyong, L, 2020).

In the process of the cross-border ecommerce transactions, customers care about both the product quality and the logistics service quality while they purchase goods. Actually, retailers are selling product+logistics to customers (Niu B, Wang J, Lee CKM, et al., 2019). The accurate planning and cost-effective management on product delivery are the key factors leading most manufacturing sectors to the success (Kerdprasop N, Chansilp K, Kerdprasop K, et al., 2019). Using a standard neoclassical utility maximization framework, and logistic regression techniques, the results show that being a male is positively related to the probability of practicing Cross-border Ecommerce (Valarezo, Angel, Perez-Amaral, 2018). High attention has been given to the field of intelligent logistics and witnessed its rapid improvements. It would improve management level of warehouse delivery system and do more intelligent work with more challenging tasks (Jinming W, Li H, Fumin Z, 2018). Big data goes far beyond the analysis features used before. Since executives can obtain and measure more valuable information than ever before, they can make better predictions and smarter decisions and achieve precise mana

gement finally (Mcafee A, Brynjolfsson E, 2012). Big data technology has been used to establish a comprehensive data analysis platform (Borgi T, Zoghlami N, Abed M, 2017). The ideas of data management have been changed greatly in the following detailed information: from result-oriented to processoriented, namely changing the management object from after-action management to whole life cycle management and management goals from data management to data governance (Nannan T, 2017). With the logistics efficiency increasing, we can collect new types of data to improve the product and process service quality (Dobos P, Tamás, P, Illés, B, et al., 2018). With the application of mobile Internet, Internet of Things, cloud computing and big data cross-border e-commerce technology, has caught up with the development opportunities (HaiYing X, JiaoJie Z, 2019).

development of cross-border commerce in China is in the forefront of the world, forming some regulatory mechanisms and analyzing the problems existing in its development. It has issued policies to set up Cross-border E-commerce Comprehensive Pilot Areas, building cross-border e-commerce platform and ecological circle, providing easy promotion and replicable experience for the development of cross-border ecommerce in China (Hui-Ping D, 2019). It is important to achieve interaction mechanism and integration between the robust cross-border e-commerce and the logistics-related industrial (Lingbing H, Yibo H, Shuaihong W, 2018). At present, with the continuous development of intelligent systems, it has been used in many industries including e-commerce field, such as the supplier intelligent management system in the cross-border e-commerce platforms (Yang Y, 2019). In the development of cross-border ecommerce, the comprehensive pilot areas play a positive role in promoting cross-border ecommerce in China. The main driving force for its development comes from the growth of service support level, the comprehensive development levels, present regional characteristics, economic characteristics and reverse cluster characteristics (WeiHua SU, YuYing W, 2017). Managers can make use of advanced data analysis method and particular management infrastructures to

optimize the logistics and transportation operations and improve the service quality to a higher level (Borgi T, Zoghlami N, Abed M, et al., 2017). Many problems has arisen as a result of serious shortage of talents on cross-border ecommerce, so it is important to setting up and improving the talents' system of cross-border ecommerce (Li Z, Mengting H, 2019).

2. Overview of the Development Status of China's Cross-border E-commerce Comprehensive Pilot Areas

2.1 Development Process of China's Crossborder E-commerce Comprehensive Pilot Areas

Under the background of the current digitalization and the rapid development of global e-commerce, China's Cross-border Ecommerce Comprehensive Pilot Areas were established with the approval of the Ministry of Commerce of China. By the way of gathering ecommerce platform, comprehensive foreign trade services of enterprises, e-commerce specialty of enterprises, and professional services of talent e-commerce together, the experimental zone can not only provide enterprises one-stop comprehensive services such as customs clearance, logistics, financial, professional personnel and so on, but also promote the linkage development of crossborder e-commerce online platform and offline park. The ultimate goal is to build a complete industrial chain and ecological chain of crossborder e-commerce, promoting trade and investment to realize liberalization, facilitation and standardization.

In March 2015, Hangzhou had been approved as the first Cross-border E-commerce Comprehensive Pilot Area in China. From 2016 to 2019, there were 58 cities such as Ningbo and Shijiazhuang approved to establish Cross-border E-commerce Comprehensive Pilot Areas. This way has greatly promoted the development of cross-border e-commerce throughout the country. As a new format, it fully demonstrates its leading role in the innovation and development of foreign trade. While the traditional foreign trade is facing a severe test that has not been seen for many years, cross-

r e-commerce has released huge development potential. From January to February 2020, China's cross-border e-commerce retail imports and exports amounted to 17.4 billion yuan, an increase of 36.7% over the same period last year. Therefore, the Standing Committee of the State Council also decided to add 46 Crossborder E-commerce Comprehensive Pilot Areas in April 2020. So far, the number of Crossborder E-commerce Comprehensive Pilot Areas in China has reached 105, covering 30 provinces, autonomous regions and municipalities. The development pattern of jointing land and sea logistics and east-west two-way mutual assistance has been formed.

At present, the goal of promoting the sound development of cross-border e-commerce in different regions by setting up a Cross-border E-commerce Comprehensive Pilot Area has been initially achieved. They were set up in different stages and regions with effective measures to promote their developments have been well implemented. It has promoted the development of cross-border e-commerce in various regions, and also strongly supported local production enterprises and foreign trade enterprises to expand international trade by this new model.

2.2 Development Status of China's Crossborder E-commerce Comprehensive Pilot Areas

2.2.1 China's Cross-border E-commerce Industry Map Has Initially Taken Shape

In 2019, with the improvement of logistics distribution efficiency, the change of people's consumption concept and the introduction of various favorable policies, China's cross-border e-commerce has entered a stage of rapid growth. It has promoted the sustained and rapid growth of cross-border e-commerce import and export scale, and also contributed to the initial formation of China's cross-border e-commerce industry map.



Figure 1 Map of China's Cross-border Ecommerce Industries

It shows that the Cross-border E-commerce Comprehensive Pilot Areas. as connecting manufacturers, importers and exports retailers, and numerous supporting industries unprecedented, has made important contributions to the development of China's cross-border e-commerce. According to the data from iiMedia Research, the scale of crossborder e-commerce transactions in China has reached 910 billion yuan in 2018, and is expected to exceed 12 billion yuan in 2020, reaching 1.27 trillion yuan.

2.2.2 China's Cross-border E-commerce Enterprises Continue to Explore Emerging Markets

In 2019, with the continuous intensification of trade frictions between China and the United States, the total trade volume between China and the United States decreased significantly year on year. As shown in the Figure 2, on December 8, 2019, the General Administration of Customs released the imports and exports data of goods trade for the first 11 months. It showed that the total value of trade between China and the United States was 340 billion yuan, down 11.1% from a year earlier. Among them, China's exports to the United States decreased by 8.4% to 2.64 trillion yuan, and China's imports from the United States decreased by 19.5% to 763.05 billion yuan. Moreover, ASEAN has replaced the United States as China's second largest trading partner.

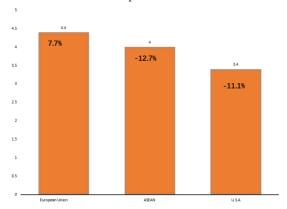


Figure 2 Import and Export Value of Goods Trade in Each Region in the First 11 months of 2019 (trillion RMB)

With Sino-US trade frictions, the cross-border e-commerce industry has to face several negative effects such as longer customs clearance time, more stringent officials, and lower orders. Therefore, on the one hand, cross-border e-commerce companies are accelerating brand registration and enhancing their awareness of intellectual property protection. On the other hand, they have also begun to pay more attention to the development of emerging markets and actively explore new markets in the ASEAN, EU and the Belt and Road Initiative.

2.2.3 China's Main Cross-border E-commerce Platforms Accelerate Offline Layout

In 2019, China's mainstream cross-border ecommerce platforms have accelerated the layout of new offline retail stores. Koala Global Factory Store's first offline store, opened in April 2019. Consumers can experience online and offline price synchronization, use black card membership discount coupons and other services when they arrive at the store. AOMYGOD.com continue to expand the national dual-line purchase model and the total number of new retail stores has reached 75.

While helping more international brands enter the Chinese market, China's cross-border e-commerce platforms are also gradually moving towards globalization. AliExpress, as a global cross-border e-retailer's platform of Alibaba, has brought new retail to Europe and opened offline store "Ali ExpressPlaza" in Spain. Suning.com has introduced 150 Italian brands to Chinese consumers and will open 150

smart experience stores in the form of shop-inshop in China in the next three years.

With the increasingly fierce competition of cross-border e-commerce, the mode of online and offline integration has become an inevitable trend.

2.2.4 China's Second Echelon Cross-border Ecommerce Platforms boom

Within China's cross-border e-commerce industry, Alibaba has been in a leading position. Since Alibaba Group and Netease have reached strategic cooperation and completed the acquisition of NetEase Koala in September 2019, Alibaba occupies half of the cross-border e-commerce industry.

With the deepening and development of cross-border e-commerce, Pingduo and Suning, which are in the second echelon of China's cross-border e-commerce industry, have also begun to exert their efforts including Pingduo cooperating with Amazon to jointly snatch the cake of cross-border e-commerce and Suning acquiring Carrefour, China. The latter's acquisition has further strengthened Suning's international supply chain and greatly enhanced Suning's market position in the retail sector.

3. Experience and Problems in the Development of China's Cross-border Ecommerce Comprehensive Pilot Areas

The establishment of Cross-border E-commerce Comprehensive Pilot Areas is of great significance in responding to the new international trade order, giving play to China's leading advantages of endangering the world's first echelon of e-commerce, seizing the commanding heights of cross-border e-commerce, and exploring the promotion of online WTO construction.

3.1 Experiences in the Development of China's Cross-border E-commerce Comprehensive Pilot Areas

3.1.1 Building a Comprehensive Service System for Cross-border E-commerce

In the process of building comprehensive servic

e system for cross-border e-commerce, the most widely replicated and popularized experience in the whole country is the Six Systems and Two Platforms implemented in Hangzhou Crossborder E-commerce Comprehensive Pilot Area. Six Systems include cross-border e-commerce information-sharing system, e-commerce credit system, financial services system, intelligent logistics system, risk provention and control system and statistical monitoring system. Two Platforms include the online integrated information service platform, that is, the single window platform, and the offline integrated park platform.

In the process of promoting it in Zhengzhou Cross-border E-commerce Comprehensive Pilot exploration and innovation Area, were constantly carried out. A cross-border ecommerce talent training and business incubation platform and a quality and safety achieve svstem were added to liberalization, standardization and facilitation of cross-border e-commerce.

3.1.2 Creating a Cross-border E-commerce Ecosphere with Deep Integration of Online and Offline

The Cross-border E-commerce Comprehensive Pilot Areas of different cities in China have many experiences in helping to form a closed transaction loop among small and medium-sized enterprises by the big data. It covers the whole process of cross-border ecommerce transactions, including releasing information, making a deal, regulatory services, financial and logistics services and so on. It also helps to form a cross-border e-commerce ecosphere with deep integration of online and offline further. For example, in terms of online ecosphere construction, Hangzhou Cross-border E-commerce Comprehensive Pilot Area aims to build data base by setting up a single window covering B2C and B2B to link finance, logistics, third-party integrated service platform and other integrated services. In terms of offline ecosphere construction, it adopts a diversified layout to accelerate industrial agglomeration and promote the transformation and upgrading of traditional manufacturing and foreign trade enterprises. Finally, an integrated development having regional characteristic advantages and

cross-border e-commerce is expected to be realized.

3.1.3 Forming the Advantages of Industrial Cluster Development

At present, the Cross-border E-commerce Comprehensive Pilot Areas in various cities in China have become the gathering places for leading enterprises of cross-border e-commerce, cross-border logistics enterprises, Internet financial service enterprises and innovative and entrepreneurial enterprises. It has more and more strong industrial attraction and strong development potential. The development of clusters has formed a industrial specialized division of labor and a socialized collaborative relationship, formed an ecological group of symbiosis of different enterprises, and produced a strong scale effect and brand effect.

Hangzhou Cross-border E-commerce Comprehensive Pilot Area has gathered wellknown multinational cross-border e-commerce enterprises at home and abroad, such as Alibaba, Netease Koala, Wish and eBay. There are about 8000 sellers of foreign trade or manufacturing enterprises engaged in cross-border e-commerce. Moreover, there are also more than 200 airlines and more than 80 shipping companies providing 24 hours a day global online logistics services. It is a financial service center composed of Alipay, UnionPay and other Internet financial enterprises with cross-border payment and acceptance licenses. As an important industrialized city in the central region, Zhengzhou has formed a group of superior and characteristic industries, including automobile and equipment manufacturing, textile and new materials electronic clothing. of information technology, food processing and handicraft. With the mutual integration and promotion of industrial base and cross-border ecommerce in Zhengzhou Cross-border Ecommerce Comprehensive Pilot Area, its export strength of B2B cross-border e-commerce is constantly increasing.

3.2 Problems in the Development of China's Cross-border E-commerce Comprehensive Pilot Areas

While gaining valuable development experience, Cross-border E-commerce Comprehensive Pilot Areas in China also have a series of development problems such as uneven development level, single development direction of the park, and lack of professional talents.

3.2.1 The Development Levels are not balanced

Due to the different degrees of openness of regional economic systems throughout the country, there is a big gap in the development level of e-commerce industries and e-commerce service ones in different regions, resulting in a serious imbalance in the development of Crossborder E-commerce Comprehensive Pilot Areas. For example, since first-tier cities such as Hangzhou, Beijing, Shanghai, Guangzhou and Shenzhen have a highly open economic system, they can attract the participation of large international companies at home and abroad to involve in cross-border e-commerce global resource allocation and have a better export foundation. In contrast, because Zhengzhou is located in the inland, its e-commerce industry is congenitally inadequate. There are many private small and micro enterprises lacking strong demand for cross-border e-commerce exports. This also objectively causes the imperfection of local e-commerce service enterprises.

3.2.2 The Operation levels Need to be Improved

At present, there are two main development modes of Cross-border E-commerce Comprehensive Pilot Areas in China, namely, joint development of government and relevant enterprise groups or individual enterprises investing and developing separately. Different investment and development modes determine their management mode and profit mode. For a long time, the construction of Cross-border E-commerce Comprehensive Pilot Areas have generally focused on attracting investment and neglected operating management. Due to the diversity of enterprise types and business types

in Cross-border E-commerce Comprehensive Pilot Areas, its poor management will not effectively solve the different demands of enterprises. As a result, the loss of enterprises would greatly affect the attractiveness and development potential of the Cross-border E-commerce Comprehensive Pilot Areas.

3.2.3 Cross-border E-commerce Platform Services Need to be Improved

Presenting a trend of all-round and deepseated cooperation in the world, the emergence of cross-border e-commerce is becoming a highly competitive new format and engine within the field of international According to Accenture Research, it shows that global cross-border online shopping penetration rate will exceed 50% and the global cross-border e-commerce market will exceed trillion US dollars in 2020. The rapid development of cross-border e-commerce has attracted many enterprises to enter this field. But it is also facing the problem of high customer cost and insufficient user experience. According to iiMedia Research, more than 30% of cross-border consumers have a poor consumer experience on the platform in 2018 and nearly 70% of customers are not satisfied with the after-sales service of cross-border platforms. Faced with the situation that the scale of cross-border e-commerce users in China exceeds 100 million, it has become a top priority to improve the service quality of crossborder e-commerce platform.

3.2.4 Cross-border E-commerce Professionals are Scarce

Since 2013, China's cross-border e-commerce industry has entered a stage of rapid development. The transaction scale of cross-border e-commerce industry increased from 290 billion yuan in 2013 to 1.05 trillion yuan in 2019. Behind the rapid growth of industrial scale, there is the huge demand for professional cross-border e-commerce talents. But at present, most of the talents engaged in cross-border e-commerce related industries are talents in e-commerce, international business, international trade and other fields. The industry urgently

to train high-end application-oriented and subject-oriented talents to meet the enterprises' needs and promote the development of the industry.

4. The Development Trend of Cross-border E-commerce and Development Strategies of Cross-border E-commerce Comprehensive Pilot Areas

China has become the global cross-border ecommerce highland with the largest transaction scale and a high-speed growth trend. Analyzing and conforming to its development trend, it is of great significance for Cross-border E-commerce Comprehensive Pilot Areas to formulate forward-looking and targeted development strategies for deepening its development.

4.1 The Development Trend of Cross-border E-commerce

4.1.1 Digital Transformation of Cross-border E-commerce

The current cross-border e-commerce sets international procurement, international production, international sales and international logistics in one. Imperfect import and export transportation system leads to many problems in cross-border transactions, such as transportation cost, low efficiency, cross-border transactions, poor consumption experience and so on. The digital transformation of crossborder e-commerce is imperative. Building a smart logistics system based on big data is one important part of it.

Intelligent logistics formally integrates the Internet of Things and sensor network with the Internet. It uses advanced technologies such as big data cloud computing and artificial intelligence to carry out fine dynamic and scientific management in logistics information supply chain management, transmission, route planning, warehouse transportation reserve optimization and market forecasting. It helps logistics to realize the automation, visualization, controllability, intelligence and networking. Ultimately, it would improve the utilization rate of resources and productivity level. Therefore, it is the guarantee and

direction for the sustainable development of cross-border e-commerce.

4.1.2 Transformation of Cross-border E-commerce Mode

Being a new normal of foreign trade, export cross-border e-commerce has become an important support force for China's foreign trade and an important force to provide highquality products to global consumers. During this process, the Chinese seller group continues to develop from the Pearl River Delta to the Yangtze River Delta then to the inland. The sellers is also more diversified including traditional manufacturing enterprises, traditional foreign trade merchants and traditional wellknown brand dealer. They constantly join the export cross-border e-commerce industry to open up new business growth opportunities. The transaction model is undergoing a transition from B2B to B2C and M2C will become one of the main forms. Therefore, by improving the cross-border e-commerce service system, it will be promising to enhance the advantages of trade industry and the export competitiveness of small and micro enterprises.

4.1.3 Cross-border E-commerce Service Industry as the Focus of Development

Cross-border e-commerce is extending from commodity trading to services including financial, cultural and medical services. The transformation of trading objects from tangible goods to intangible services is an inevitable trend in the development of cross-border ecommerce. Cross-border e-commerce service industry mainly includes three types. The first one is import and export services such as customs clearance, logistics and finance for small and micro enterprises. The second one is cross-border e-commerce brand services and the last one is cross-border e-commerce financial services. Taking cross-border e-commerce as the medium, an important direction to be planned is to make the cross-border service industry unique at this stage.

4.2 The Development Strategies of Crossborder E-commerce Comprehensive Pilot Areas

4.2.1 To Build Intelligent Logistics System with Big Data Technology

The realization of intelligence function in intelligent logistics relies on advanced science and technology, including Internet of Things data technology, technology, big computing technology and various intelligent technologies to complete various information transmissions based on the electronic data exchange platform. This platform is the logistics public information platform. In the Initiative of the Belt and Road, the most important thing is to connect the logistics information platforms of various countries and realize information sharing. Therefore, the construction of logistics public information platform in the Cross-border E-commerce Comprehensive Pilot Areas is not only the only way to build an intelligent logistics system, but also a good opportunity for the deep integration of the Belt and Road construction.

To build a logistics public information platform, we should build an aviation logistics information system and a logistics business information platform. The former solves the problem of electronic data's exchange, record, optimization, realizing storage and information sharing of each node enterprise including home and abroad enterprises. Then it could fundamentally improve the overall efficiency of logistics service supply chain. The latter provides services such as matching online payment information transactions, dissemination, location tracking, technical consultation and industrial dynamic analysis. It could realize the interconnection and resource exchange among Cross-border E-commerce Comprehensive Pilot Areas, manufacturing or enterprises government commercial and departments.

4.2.2 To Build International Multimodal Transport System

International multimodal transport is an important symbol of modern international logistics. During the logistics transportation

process of cross-border e-commerce, the time taken for trunk transportation is far less than the time taken for the transfer between different modes of transportation. However, most of the transportation in goods cross-border commerce activities must involve multiple modes of transportation. Coordinating and effectively linking up various international modes of transport will directly affect the overall efficiency of cross-border logistics. Therefore, international multimodal transport is an inevitable trend to be carried out. It is also one of the important construction contents in the Cross-border E-commerce Comprehensive Pilot Areas.

Aviation logistics is one of the important means to develop cross-border e-commerce in the inland cities because it can provide more route resources and transport goods to the destination in the shortest time. Zhengzhou Cross-border E-commerce Comprehensive Pilot Area is actively implementing the Zhengzhou International Air Cargo Hub Strategic Plan. First, it hopes to build Xinzheng International Airport into an international logistics center in the Asia-Pacific area. Then it hopes to establish a global air cargo network through Luxembourg, the European and American logistics center to make every effort to enhance the economic influence of the central urban area.

4.2.3 To Introduce and Cultivate Management Talents

Talent is the most important premise for any cause. As the new concept and new format in recent years, while the Cross-border Ecommerce Comprehensive Pilot Areas are developing rapidly, there are not sufficient talent reserve. Because there is not much theoretical and practical experience, many cross-border e-commerce managers are groping for learning and progress under the new situation. Although China's cross-border ecommerce has made extraordinary achievements, it has encountered bottlenecks and new problems from the macro-level situation of the entire industry or from the perspective of the micro-practice of the enterprise. It is calling for the cultivation of new cross-border e-commerce talent.

In view of the development needs of Crossborder E-commerce Comprehensive Pilot Areas, local governments should formulate plans for the introduction of well-known cross-border ecommerce enterprises and high-end talents in province. the whole We should comprehensively strengthen the linkage between schools and enterprises, establishing a unified logistics personnel training system in the whole province and vigorously training applied and compound talents to meet the needs of Cross-border E-commerce Comprehensive Pilot Areas.

5. Conclusion

At present, on the one hand, the spatial development pattern of regional economic development with industrial clusters as the core and cross-border e-commerce as the tool is The taking shape. administrative region economy is transforming into the urban economy agglomeration and the economy finally. In this process, cross-border ecommerce has become one of the driving forces to promote regional economic development. On the other hand, the digital revolution of crossborder e-commerce industry is sweeping the world. In addition to the third-party giant platform operation mode such as Amazon and eBay, the more flexible and free brand export mode has increasingly become a new outlet for cross-border e-commerce. According to the World Internet Development Report 2018 and China Internet Development Report 2018, the global digital economy in 2017 reached 12.90 trillion USD and China's total digital economy has exceeded 27.2 trillion RMB, contributing 55% to GDP growth.

development The of cross-border commerce, especially export cross-border ecommerce, is closely related to its own industrial supporting services. As the main stage for cross-border e-commerce industries, the Cross-border E-commerce Comprehensive Pilot Areas have great responsibility to push them forward. In 2017, the relevant departments of the Chinese government issued a series of measures to further promote logistics cost reduction and promotion. In 2017, the relevant departments of the Chinese government successively issued several documents, such as

Opinions on Reducing Logistics Cost and Increasing Efficiency to **Promote** Development of the Real Economy, New Generation Artificial Intelligence Development Plan, which put forward to develop intelligent logistics and promote the achievement of industrial automation. In the future, with the help of the application of big data, intelligent logistics and intelligent park will be formed in the Cross-border E-commerce Comprehensive Pilot Areas. The linkage mechanism among shared logistics intelligent logistics, intelligent manufacturing will be formed, too. Therefore, this will be of great significance to the rapid development of the whole crossborder e-commerce industry.

Acknowledgements

It is supported by 2019 China National Social Science Fund (19BJY179, Research on Global Economic Rebalancing, Value Chain Restructuring and China's Foreign Transformation and Upgrading), Universities Philosophy and Social Sciences Innovative Team Support Program (2019-CXTD-05), Henan Universities **Applied** Research of Philosophy and Social Sciences' Major Project (2018-YYZD-05).

REFERENCES

- [1] Valarezo, Angel, Perez-Amaral, etc. (2018): Drivers and barriers to cross-border e-commerce: Evidence from Spanish individual behavior. Telecommunications Policy, 42(06): 464-473
- [2] Ahmad, M., Beddu, S., binti Itam, Z., & Alanimi, F. B. I. (2019). State of the art compendium of macro and micro energies. Advances in Science and Technology Research Journal. Volume 13, Issue 1, March 2019, pages 88–109 https://doi.org/10.12913/22998624/103425
- [3] Jiuru Z. (2018): Influential Factors and Strategic Analysis on the Development of Cross-border Ecommerce between China and Russia under "the Belt and Road" Initiative[C]. The 30th China Conference on Control and Decision (2)
- [4] Yun-Peng Y, Jian-Zheng Y, Xuan Z, et al. (2018): Research on the Influence Spreading Model of Policies and Regulations in the Cross-border E-commerce Trade. China Business and Market, (01): 55-66.
- [5] Zhiyong L. (2020): New Features of Chinese Cross-Border E-Commerce: Branded, Refined and Diversi

- fied. China's Foreign Trade, 578(02):54-57.
- [6] Niu B, Wang J, Lee CKM, et al. (2019): "Product+logistics" Bundling Sale and Co-delivery in Cross-border E-commerce Journal of Electronic Commerce Research, 19(4): 915-941.
- [7] Kerdprasop N, Chansilp K, Kerdprasop K, et al. (2019): Anomaly Detection with Machine Learning Technique to Support Smart Logistics – Computational Science and Its Applications-ICCSA.
- [8] Jinming W, Li H, Fumin Z. (2018): Swarm Robotics Control and Communications: Imminent Challenges for Next Generation Smart Logistics – Journal of IEEE Communications Magazine, 56(7): 102-107.
- [9] Mcafee A, Brynjolfsson E. (2012): Big Data: The Management Revolution Journal of Harvard business review, 90(10): 60-6, 68, 128.
- [10] Borgi T, Zoghlami N, Abed M. (2017): Big data for transport and logistics: A review – 2017 International Conference on Advanced Systems and Electric Technologies (IC_ASET). IEEE.
- [11] Nannan T. (2017): Revolution in Data Management Ideas in the Era of Big Data: From the Result to the Process Journal of Information Studies: Theory & Application, (2): 12.
- [12] Dobos P, Tamás, P, Illés, B, et al. (2018): Application possibilities of the Big Data concept in Industry 4.0 – IOP Conference Series Materials Science and Engineering: 448.
- [13] HaiYing X, JiaoJie Z. (2019): Research on the Innovation Path of Cross-border E-commerce Development in China under the Background of Big Data. Value Engineering, (32):145-146.
- [14] Hui-Ping D. (2019): Construction and Growth of Platform Ecosystem in Cross-Border E-commerce Comprehensive Test Area: Taking Qingdao Cross-border E-commerce Comprehensive Test Area as an Example. Journal of Qingdao Agricultural University(Social ence), (02):51-56.
- [15] Lingbing H, Yibo H, Shuaihong W, et al. (2018): Analysis of Integrated Development of Cross-border E-commerce and Logistics Industrial Chain in Context of Industrial Fusion. Logs Technology, (07): 20-22.
- [16] Yang Y. (2019): Research on the Optimization of the Supplier Intelligent Management System for Crossborder E-commerce Platforms Based on Machine Learning – Journal of Information Systems and E-Business Management, (01): 1-20.
- [17] WeiHua SU, YuYing W. (2017): Statistical Research on Development Level of China's Cross-Border E-Commerce in Comprehensive Pilot Areas – Journal of Business Economics, (06): 13-22.
- [18] Li Z, Mengting H. (2019): An Analysis of The Demand Caused by the Local Economic Development for Talents on Cross-border E-Commerce Based on Internet+. Journal of Guilin Normal College, (03): 75-79
- [19] Bifei T, Lulu D. (2019): International entrepreneurship path of Chinese new ventures based on cross-border e-commerce. Science Research Management, (09): 149-158