

Agglomeration Effect of E-commerce Industry in Ezhou

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Abstract — This article studied the phenomenon of the rapid development of E-commerce industry in Ezhou in recent years. It revealed the effective practices and successful experiences of how to achieve the transformation and upgrading of traditional industries in grassroots-level regions by "Internet +" strategy. Firstly, by comparing with the developing path of other E-commerce gathered cities, using the economic theory of comparative advantage, growth pole theory and theoretical analysis of regional advantages, the fundamental cause of the development of e-commerce and logistics industry in Ezhou was analyzed. And on this basis, referring to two-sided markets theory, Ezhou Municipal Government's successful practices of choosing large B2C e-commerce logistics industry as the leading industry in investment attraction was studied. It was pointed out that while the early introduction of large e-commerce logistics enterprises, the logistics network and other e-commerce infrastructure establishing, e-commerce practitioners scale growth, tacit knowledge spillovers and others, all those aspects have provided a reliable drive and support for the emerging of local small business enterprise clusters. This is a new approach of developing e-commerce industry and leading the upgrading of traditional industries for the inland underdeveloped areas.

Keywords - E-commerce Industry; Agglomeration Effect; Industry Policy

I. INTRODUCTION

E-commerce industry in Ezhou was rapidly developed in recent years. An explosive growth was emerged in Gedian National Economy and Technology Developing District, the main area of e-commerce logistics industry. The central China logistics headquarters of well-known E-commerce enterprises including Amazon, Suning.com and Vipshop have entered Ezhou one by one. A regional e-commerce industry cluster of local small and medium e-commerce entrepreneurial enterprises was preliminary formed with the leading of e-commerce logistics industry and the supports from regional e-commerce headquarters and its enterprise logistics and supporting industrial projects for business services.

Since 2013, based on Gedian Developing District, Ezhou has vigorously promoted the "Central E-commerce Base" project, periodical accomplishment was achieved. This base located in Gedian National Economy and Technology Developing District, covering a planned area of 18 square kilometers, was approved as the first batch of e-commerce demonstration base by the Hubei Provincial Department of Commerce in 2013. Taking this base as its core platform, Ezhou has brought forward an industry planning, and strived to build central China's largest e-commerce base, hoped to build the next billion dollar level value of e-commerce industry base.

Currently, taking E-commerce logistics operation industry as the breakthrough point, Central China E-

commerce Base was settled in by Amazon, Vipshop, Suning E-shop, Shanghai Yishang, Weilong, Nanshan Group, CIIC Group, E-commerce University (Changjiang Vocational and Technical College), E-commerce Incubator for small and middle-size enterprises and other famous enterprises and colleges. With e-commerce logistics industry as its flagship domain, this base has preliminarily built an e-commerce ecosystem closed loop of e-commerce operators, corporate services, cross-border e-commerce, personnel training, business incubation. During Jan. to Dec. 2015, large e-commerce enterprises in Ezhou had accumulated a total online retail sales volume of 6.283 billion yuan and a year on year increase of 74.7%, accounting for 55.2% of the city's total online retail sales volume.

How did Ezhou, a third-tier inner city, develop such a remarkable e-commerce enterprises cluster in a short period? The focus of this study is on this question.

II. LITERATURE REVIEW

Domestic scholars' researches on industrial agglomeration are mostly focused on the study of industrial park, especially those high-tech developing districts. Thought the developing experience of Dalian's industrial parks, Binxiang Li (2009) and other scholars had drawn an analysis on the characteristics of industrial parks around China based on Porter's industrial agglomeration theory content.[6] The study had shown that industrial parks in China are usually composed by high-tech or high-growth small and medium enterprises. And under the influence of

knowledge spillover effect, the agglomeration in park is beneficial for enterprises innovation. However, due to the different stages of development levels of enterprise, coupled with the impact of regional distribution differences, corporate funds configuration is not balanced within the industrial park.

The imperfection of the industrial park research is obvious. It has split the locality of e-commerce activities into tangible spatial locations. The industrial structure changes caused by the e-commerce activities beyond the industrial park and business organizations tropism cannot be effectively explained. Even in the perspective of the industrial parks, the study is in lack of observation and interpretation to the industrial radiation effects and driven effect.

In the aspect of e-commerce agglomeration effect research, there are quite a few studies on specific cities and specific industry groups, the different approaches like competitiveness research or agglomeration effect research was formed. Part of the studies focused on the use of industrial clusters competitiveness research. Wanqiang Xu (2009) had empirically researched the competitiveness of Wuhan photoelectron industry clusters by using GEM quantitative model. While other studies explored the industrial clusters' development strategies and paths. Degang Chen had drawn a normative analysis on the development strategies of e-commerce industry clusters in Wuhan. In addition, domestic scholars have also conducted a lot of comparative study of e-commerce industrial agglomeration paths and trends in Shanghai, Wuhan, Hefei, Nanning, Xiamen, Yiwu and other places (Dingfu Jiang 2012, Guozhen Hua 2011 and Zhihao Chen 2012).

Most of these studies are focused on the manufacturing, high-tech industries, modern service industry and other tertiary industries or general industry. They are lack of attention to other industries such as commerce, logistics and agriculture cluster effect. Most studies on e-commerce industry are normative research. From the viewpoint of research objectives, the specific study on e-commerce industry in non-core cities, like the "8+1" cities group around Wuhan reminds to be expended.

III. THE ANALYSIS OF THE E-COMMERCE DEVELOPMENT MODEL CHARACTERISTICS IN EZHOU

We can find three development model of the existing e-commerce industrial park.

Firstly, Yiwu e-commerce wholesale model. When e-commerce has not yet become popular, there are some areas of industrial agglomeration phenomena emerging, such as Zhejiang Yiwu small commodity wholesale market. Yiwu has a size of nearly 200,000 shops, bringing together more than 170 kinds of commodities; its market involves more than 200 countries and regions. When the prevalence of e-commerce starts to flow, relying on its existing market entities and government's support of traditional trading's transformation into e-commerce, Yiwu had eventually become the center of national online trading, the center of

global online marketing and highland of cross-border e-commerce.

Second, the resource integrated e-commerce model in Shanghai. Different with Yiwu, Shanghai is an industrial cluster promoted its development by government. Shanghai has its own historical, geographical, economic advantage and the policy support from government. Since 1990s, although manufacturing and other labor-intensive industries were gradually given way to capital and technology-intensive industries; still the tobacco industry, communications equipment, computers and other electronic equipment industry clusters' effect is expanding and growing.[6]

Thirdly, Central China satellite clusters model in Wuhan, Hefei and other cities. For most E-commerce industry clusters in central and southwestern China cities, there is no strong market advantage or policy support as the original foundation. Taking Wuhan and Hefei as the example, in most central China cities, the industrial development in those cities are very alike to Peter's satellite clusters model. The enterprises are mostly small or middle size, relying on external and sporadically dispersed business.

The above cities have strong policy support as booster. Its development model of e-commerce industrial park is similar to the Shanghai model of development. Therefore, there are three models of e-commerce industrial park development existing in China. Those models are mainly distinguished by whether it gets government promoting or not before its establishment.

The developing model of e-commerce industry agglomeration in Ezhou is based on the strategy behavior of leader e-commerce enterprise. The local government gave play to regional advantages in order to bring in major e-commerce enterprises.

Together with Amazon China (Amazon will be used for short hereinafter), the developing district had built Prologis logistics park. Amazon is the global leading B2C retail e-commerce enterprise. Its technical capabilities and service delivery model is the paragon for e-commerce. Amazon has placed its e-commerce self-logistics center for central China in Ezhou, hereby, completed its logistics territory stitching across the country.

This project was co-funded by global famous manufacturer, retailer and the third party logistics company. It owns total investment of 1.2 billion yuan, covers a land of 573 acres; its construction scale is 300,000 square meters. Its phase I project was ready completed 113 acres and a construction scale of 50,000 square meters. The phase II Project will be 385 acres and a construction scale of 250,000 square meters. It has come into operation in July, 2015, and will be completed in 2016 expectedly. After the completion, there will be tax revenue of 60 million yuan expectedly and it will offer 2000 jobs for local people.

Completion and operation of the Amazon Ezhou warehouse center, has provided a typical role model for other large domestic B2C business. Using Amazon's strategic location for reference, JD has located its Asia I

warehouse at Yangluo town, Wuhan, which is just across river to Ezhou. It has provided a reference to Vipshop, Suning Online, Yhd.com and other major online retail enterprises to place their center China logistic headquarters in Ezhou.

The e-commerce park applied Logistic Agglomeration Effect; and built E-commerce Headquarter Economy.

After the Amazon project, the development district started to focus on the VIPshop project and Suning online projects as its core. Different with Amazon, those two enterprises choose to locate their operation center in Ezhou because of the geographical advantage of Ezhou.

The central China logistic center of Vipshop also serves as the supporting physical store for customer experience and merchandise display. Signed on October 2013, this project has a total investment of 1.6 billion yuan and a construction scale of 660,000 square meters. Currently, its phase I project has completed the investment of 1.2 billion yuan and a construction scale of 450,000 square meters on October 2014. The phase II project began construction on September 2015. It will build a construction scale of 210,000 square meters. In the year 2014, VIPshop had paid 120 million yuan's tax. In 2015 it is expected to pay 180 million yuan for tax and provide more than 3000 job positions.

The Suning project in Ezhou serves as serval category's e-commerce purchasing center and intermediate center of central China and nationwide for Suning group. Signed in December 2013, its total investment is about 1 billion. Its phase II project has already began construction on.

June 2015, and the construction scale is about 300,000 square meters. It's expected to be completed and start operating in 2016. After the completion, there will be yearly tax revenue of 80 million yuan expectedly and it will offer 2000 job positions.

Ezhou government have already established the comprehensive supporting facility in order to improve creating e-commerce whole industry chain service.

On the basis of large e-commerce enterprises had stationed their central China operation center in Ezhou, Ezhou municipal government started to bring in large comprehensive supporting facilities of e-commerce services. There are several main investment attraction projects currently building, as follow:

1) Shanghai Yishang e-commerce operation center. The project's annual output will reach 2.5 billion.

2) Weilong (Gedian) modern logistic park. This project has a total investment of 45 million U.S. dollars. Its construction scale is about 100,000 square meters.

3) Central China international smart logistic park. This project has a total investment of 2.5 billion yuan. Its construction scale is about 870,000 square meters. Its annual output will reach 6.2 billion yuan.

4) Gedian, Hubei cross-border e-commerce service platform. This project has a total investment of 500 million yuan. Its construction scale is about 10,000 square meters. It's expected to be completed and start operating in 2016 and increase about 1 billion yuan's export sells turnover.

The e-commerce park also try to activate cultivating e-commerce human resource and incubate start-up enterprises.

Firstly, Ezhou municipal government has actively brought in external facilities to cultivate local e-commerce human resource and promoted the establishing of E-commerce College. This project was invested by Changjiang Vocational College. It is an integral moving project and this campus will sever as the professional technical personnel cultivation base for central China e-commerce industry. Signed in January 2014, this project has a total investment of 600 million and covers a land of 600 acres; its construction scale is 300,000 square meters. There will be about 20,000 students on campus after the completion of integral moving.

Secondly, the central China e-commerce base should serve as the incubator for small and middle size e-commerce enterprises to solve the problems for local start-up entrepreneurs.

IV. THE ECONOMICS ANALYSIS ON THE E-COMMERCE POLICY OF EZHOU MUNICIPAL GOVERNMENT

Choosing Gedian, which is adjacent to Wuhan, to develop e-commerce, Ezhou municipal government's main considerations is the integrated logistics transport and radiation ability of Wuhan city circle. However, there are many cities located in Wuhan city circle, why Gedian Developing District in Ezhou is the preferred location for developing an e-commerce logistic cluster?

According to the principles of the comparative advantage theory, Wuhan is a land-linked transportation junction. It's cross regional logistics and transport capacity is more developed comparing with Ezhou. Nevertheless, as a city with more than 10 million residents, the urban traffic in Wuhan is inferior to the intercity traffic from Ezhou to Wuhan. Wujiashan logistic transportation center, Tianhe airport and Yangluo port, the major transportation centers are all close to Wuhan Ring Expressway and Suburb Expressway, which is close to the Third Ring Expressway. Instead of transportation from downtown Wuhan to those logistic centers, transportation from Ezhou takes less time on the contrary. This constitutes the logistics costs depression for Ezhou among Wuhan city circle.

Secondly, the land price of Wuhan determined that the cost of in-city warehousing and logistics would remain high. Under the agriculture-based economic structure of Ezhou, the low price of commercial land brings the cost saving of logistics. It is a rare bargain for low-cost pursuing e-commerce enterprises.

Essentially speaking, e-commerce is eliminating the production and circulation detour by means of informatization, thereby reducing the social transaction costs. When facing the two costs saving choices in Gedian district, e-commerce enterprises would surely choose Ezhou to arrange their central China logistics layout.

According to industry growth pole theory of economic development, the developments of a local industry cluster is not balanced, but some of the industry taking the lead in growth have driven other industries to follow. Development within the industry is the same. Usually there are few leading companies taking the lead of accelerated growth in the beginning, then driving other companies within the industry

to follow. In this process, the leading industry or the leading enterprise is called as the growth pole. In the process of Ezhou e-commerce district developing, Amazon is the leading enterprise, and the e-commerce logistic industry is the growth pole. In order to bring in Amazon, great efforts were made by the district at the beginning of investment attraction.

In order to bring in Amazon, many local benefits were given up by the district. Firstly, although Amazon logistic is physically in Ezhou, but its registration location is Beijing, local government cannot obtain taxes revenue; secondly, amazon logistic is highly automated, it can only offer hundreds of job positions. Comparing with the thousands of job positions offered by subsequent entering e-commerce enterprise, its employment driving effect is relatively limited. But, as the e-commerce leading enterprise, Amazon's successful experience of logistic site selection and operation is a great reference for the other enterprises within the industry. After Amazon, other e-commerce enterprises entering Ezhou central e-commerce base is more like herd behavior. The relocating of Vipshop headquarter from Guangzhou to Ezhou, is directly influenced by Amazon. After all, to follow the logistic arrangement of Industry benchmark enterprise is a high success rate strategy.

This demonstration effect has achieved a positive feedback on the development of e-commerce logistics industry. More and more e-commerce enterprises are following the steps of forerunner. The enterprises in Central China e-commerce base are gradually forming an industrial cluster, and downstream spinoff effect is formed for the supporting industries.

Local e-commerce basis could be supported by utilizing crossover network externalities and forming two-sided market effect. Tirole and Armstrong proposed the concept of cross-network externalities for market structural analysis.[2,4] Cross-network externality refers to the network economy. While two or more different networks accessing a network platform, each added joining node will bring additional value for another network user. The market features built by cross-network externalities is called two-sided market structure.[1]

There are many bilateral market structures existing in e-commerce industry. To utilize bilateral market structure effect will efficiently promote the development and popularization of local e-commerce in Ezhou. To draw an analogy analyze those e-commerce developed regions in China like Yiwu, Hangzhou, Shenzhen and Shanghai, we can see that some of those cities like Yiwu had brought the first pot of gold to enterprises by accessing source of goods from powerful commodity wholesale market; some of them like Hangzhou and its circumjacent cities Jiaxing, Haining and Xiaoshan had formed local e-commerce clusters by the policy guidance from local government; while some others like Shanghai and Shenzhen had promoted the co-developing of the e-commerce cluster by utilizing local information technology and financial service advantage. However, those models are developed on the foundation of superior merchandise supplement, capital, technology, human resource and other factor endowments. Those models are not

suitable for an underdeveloped inland city like Ezhou to effectuate the leapfrog development of e-commerce. Factor endowment theory cannot provide an explanation to the rise of e-commerce in Ezhou. While bilateral market theory is more convincing for the conditions of Ezhou.

Employee flow under the bilateral market condition and knowledge spillovers play important role of development of e-commerce industry in Ezhou.

After the bringing in of the first e-commerce logistics enterprise to developing district, Ezhou had brought in a wave of outside investment and operation. In this process, massive e-commerce enterprises had entered the developing district which led to many local business services inclined to e-commerce clients. E-commerce industry is employment-intensive. Their employees are usually young, highly educated and highly mobile. Those people have a very good foundation for e-commerce innovation and business initiating spirits. Their working experience in mature e-commerce enterprises will promote the knowledge recessive flowing into local traditional enterprises along with the e-commerce personnel, and meanwhile motivate their business initiating spirit.

According to the author's investigation to the famous e-commerce enterprise Vipshop central China operation headquarter, among their 2,600 local employees, the monthly natural loss rate is 3%, which means the annual loss rate is 36%. Excluding the influence of periodical labor tide brought by "Nov, 11th online shopping festival", the personnel flow rate of e-commerce highly outclassed traditional industry, which is less than 10%. Those young people who left mature e-commerce enterprises with e-commerce operation and practical ability, has a high learning ability and pioneering spirit. When joining different industry or sectors, they are easy to propagate their e-commerce knowledge to new job position. This kind of knowledge spillover, very alike to the inter-enterprises human resource flow in Silicon Valley, U.S., is continuously bringing the enrichment of mutual knowledge system and promoting business starting up round by round. This is the most valuable achievement for Ezhou brought by the e-commerce enterprises.

Mature e-commerce logistics system's cross network externalities could provide service to local agricultural products e-commerce.

Excluded the industry in Gedian developing district and the steel industry in Echeng district, the economy system of Ezhou is mainly dominated by agriculture. The aquatic products from Liangzi Lake are very famous. The fruit-planning like local blueberry and shaddock have reached a considerable size. However, the export channels and local products promoting are still in a great shortage for traditional agriculture. But, the mature local e-commerce logistics system and operation from e-commerce enterprises have created new chances for them. SFbest, JD Home Delivery and YHD Supermarket have already launched their online sales of agriculture products. Benefit by the regional advantages and logistics convenience, it will be a hot spot for local agricultural e-commerce. "Hui Life", a local company has arranged its two-way business in village already. By its

logistics system, it delivers online sold commodities to village, and purchases farming products from farmers through its network sites in villages. Thus, it had connected the last one mile for village e-commerce. Ezhou municipal government attached great importance to this model. The officers who stationed in the villages have promoted and helped the business development, and expected effect has been achieved.

The development of e-commerce industrial cluster bring self-enhancement of e-commerce logistics to enhance the agglomeration effect.

According to the network positive feedback theory, once a network industrial scale broke the threshold, it would inevitably bring about the development of related industrial cluster. Developing of those clusters would accelerate the continuously expanding of original network in return. Along with the expanding of e-commerce enterprises in Ezhou, the third-party supporting logistics service providers are entering Ezhou successively. Famous domestic express company Shunfeng had started its arrangement in Ezhou. Shunfeng freight airport was began construction in Yanjiao town and the construction will be completed in 2017. At that time, Shunfeng will relocate its central China aviation hub warehousing center into Ezhou. And benefited from the freight airport, the delivery services of e-commerce enterprises in Ezhou will get on a new stage. Domestic express will be delivered within one day, and foreign express will be delivered by the next day. This will offer a powerful cross-border logistics channel to the starting-up cross-border e-commerce enterprises. This is a typical example of e-commerce leading the infrastructure developing of supporting logistics enterprises; and logistics enterprises infrastructure back feeding e-commerce industry and facilitating its expanding.

V. CONCLUSION AND SUGGESTIONS

To conclude, the results show that we can draw the suggestions about the policies of developing e-commerce industry in Ezhou:

Advantages of project resource, media and government resource could be fully utilized, by which the full-scale, integrated, free supporting and communication could be provided for start-up enterprises. Attentions for the integrating of supporting industries and traditional industries needs to be paid to, through which various types of enterprises in Gedian could achieve their co-development. Local government could also improve the development of information infrastructure which e-commerce depends on and make overall arrangements for the information infrastructure including fundamental networks, data records center, telecommunication broadband, technology researching and other services. The common e-commerce support services like in-base information security, credit, payment, logistics, data storage and others could be introduced and improved, through which input costs for e-commerce enterprises would be reduced. The cloud computing based service platform for small and middle size enterprises needs to be built, on which enterprises can operate their on-line business and effectuate quick financial

settlement, online financing, electronic payment and other functions. Last but not least, cloud computing supporting effect for finance digitization could be reinforced and the digitization of online trading within the industrial park could also be promoted. Those strategies will eventually strengthen the ability of the base, making it the e-commerce service center for Hubei, even overall central China region.

The government could provide the encouragement policies to enhance the exploring of cross-border e-commerce. Firstly, policy supporting needs to be strived for cross-border e-commerce. Secondly, a cross-border e-commerce trading platform needs to be built. Thirdly, cross-border e-commerce business needs to be carried out actively. For those stationed e-commerce enterprises, the park manager can lead them to initiate their cross-border e-commerce business.

Try to expedite the development of rural e-commerce. Mature operators should be selected to expedite the development of rural e-commerce platform; to build network, logistics delivery and other infrastructure. By integrating and utilizing the "farm shop" which has developed from "thousands villages and towns" market construction leading by ministry of commerce in "13th Five Year Plan", village level farmers' online shop can be gradually built. With EMS postal service and service from private logistics enterprises like Yuantong and others, a power rural e-commerce network and delivery system can be established. Thus both the rural area's needs of production means, industrial products and the urban area's needs of agricultural and sideline products will be satisfied.

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