Research on Cluster Development and Mode Selection of the Producer Services: Zhejiang Province as an Example

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Abstract—In the current market environment, the producer services has gradually become a major value added part of the value chain, and all the countries in the world take the producer services as a new economic growth pole. This article unified producer services' own characteristics, and elaborated the necessity and the evolution mechanism of the producer services. The article explored the mode selection of cluster development, setting Zhejiang Province as an example.

Keywords-producer services; cluster development; mode selection; Zhejiang

I. THE SIGNIFICATION AND FUNCTIONS OF PRODUCER SERVICES

Producer services refers to the service industry which provides the safeguard service that in order to maintain the industrial production process continuously, and to progress the promotion of industrial technology, the industrial upgrading and the enhancement of production efficiency. Producer services are proposed by American economists Browning and Singelman on the classification of service industry. Supporting services which are directly related to manufacturing, are new industries developed independently from the services sector of manufacturing. It is not in itself providing consumers with direct, independent service effectiveness. It exists dependent on manufacturing enterprises. It runs through the upstream, midstream and downstream sectors of production in all, and takes human resources and knowledge capital as the main investment. Introducing the specialized human resources and knowledge capital to manufacturing is the key link accelerating to fuse the second and third industries. The industrial main scope includes: Modern logistics industry, international trade, Information Services, Finance and insurance industry, Modern Exhibition Industry, Intermediary services and so on.

In the production of modern enterprises, the main value-added part of business value chain is not processing, but rather the research and design of the product, market development and other production services chain. Value-added part provided by producer services throughout the value chain is growing more and more. The development of modern technology has gradually reduced the difference of production process; product differentiation of material has not become the primary means of business competition. Instead, the differences of service have become the main competition of enterprises. Enterprises manufacturing value chain are transferring to direction of the enterprises services value chain. Producer services access to the upper and lower ends of manufacturing sector in the form of means of production, and it has become the main factor to catalyze value-added of manufacturing value chain.

II. THE CLUSTER DEVELOPMENT TREND OF PRODUCER SERVICES

A. The Inevitability of the Cluster Development of Producer Services

As the development of producer services has the characteristics of increasing returns to scale, it relies on the human resources, information, technology and the market significantly.

The characteristics of increasing returns to scale determine the market size will directly affect the producer services development. As the producer services are "space divided", their services are out of geographical restrictions, this may provide a cluster development for producer services. The cluster of producer services will effectively expand the "social network", and the market size can be rapidly expanded. Producer services are different from general services sector, it has features of knowledge-intensive, space divided, innovative overflow. The features of knowledge-intensive and innovative overflow note that the development of producer services dependent on the human resources, information, and knowledge quite large. Cluster development will be very conducive to human resources gathering, information sharing and knowledge spillovers and will bring the highly efficient on the use of resources and the drop-down transaction costs, thus formed the external economies of scale.

Relevant research data also shows that in 1985, the United States' 90 percent of producer services jobs concentrated in metropolitan areas and that was 83 percent of total metropolis employment. Except banks, the producer services in non-metropolitan areas were below 1.0. At home, the Yangtze...
River Delta world-class manufacturing base attracts the producer services to Shanghai, Hangzhou, and other central cities gathering.

B. The Typical Cluster Mode of Producer Services

A variety of producer services incompatible with the formation of the aggregation model, there are four typical patterns:

The first mode is Marshall new industry area mode around Tokyo. It focuses on the development of new products related to industry, and has formed a technological innovation enterprise cluster; some focus on the financial information services, and has formed the financial industry cluster. Their common feature is mainly small businesses concentrated, with complex specialized division of labor cooperation and competition internal clusters, with low correlation cooperation to the external enterprises.

The second mode is the axle-gathering mode of Manhattan business district. Manhattan business district concentrates big banks, insurance companies, stock exchanges and more than 100 headquarters of large companies, which attracted a large number of personnel services, accounting services and other related businesses concentrated. The main feature is that takes one or more key enterprises as the core and other enterprises around the core businesses along the value chain in the direction of upstream and downstream and do multi-directional cooperation, then form industrial clusters.

The third mode is satellite platform-gathering mode of south Scotland District. In 1970 the south Scotland government introduced many preferential policies and financial development, attracted a large number of financial giants operating in the region, and formed a financial industry gathering areas. The main characteristics of this mode are that preferential policies has played an important role in the cluster over the next vertical business linkages associated mainly horizontal linkages relatively small.

The fourth mode is a government-led concentration mode. This model is similar to the axle-some mode, and it takes large state-owned enterprises, scientific research institutions under government control as the core, attracting supporting SMEs (Small and Medium-Sized Enterprises) to form a concentrated area.

III. THE INTRINSIC EVOLUTION MECHANISM OF PRODUCER SERVICES

A. One of the Driving Factors in Cluster Development: Market-Oriented

Researching the formation of producer services cluster from the perspective of market-oriented, a necessary condition of producer services can be found that markets are relative concentration and have a certain size. As the existence of mass production enterprises, it has attracted a producer-related services enterprises and local enterprises to move into the slow fission, format gather preliminary formed. At the same time, accompanied by a development of clusters, the market's dependence on clusters gradually increased, demanding for more services, in turn, further creating a powerful external stimulus the to development of clusters. Under this kind of demand stimulation's function, enterprise quantity sharp growth, cluster's plan can expand rapidly. Simultaneously, the expansion of clusters' scale, making the clusters' internal competition of enterprises increased. The appropriate market competition can reduce costs and improve service quality, and it is beneficial to long-term development of cluster. The excessive competition will form clusters' internal waste of resources, urges the cluster to develop the formation "the growth upper limit" As shown in Fig. 1. Afterward development, the market and so on external variable no longer is the predominant factor, cluster's own innovation ability, the approaches to cooperation, the market strain mechanism, the cluster's culture and so on endogenous variables become the leading collection factor.

B. The determining factors of Cluster Growth: Talent Gather and Knowledge Spillovers

Human resources are the core elements of the development of the service industry. Because the production service industry is the knowledge intensity industry, the main investment is knowledge; therefore it highly requests for talents. Along with industrial gathering, the cluster will have

![Figure 1. The Initial Period Form of the Growth Upper Limit](image-url)
market scale effect. That is, in the industrial clustering, the nominal and real wages of workers will be higher than other non-concentrated areas, thus forming a powerful attraction of human resources. In other words, industry people gathered at the same time the gathering will bring talent, and for the production of services, the talent is concentrated in the industrial development of basic elements.

The knowledge overflow is the main endogenous variable which the production service cluster grows. The knowledge is specially the recessive knowledge is the Service firm non-uniformity guarantee. The recessive knowledge and dominant knowledge's different lying, the recessive knowledge is very difficult to record and the dissemination, the recessive knowledge's dissemination relies on between the people the short distance contact and the exchange face-to-face. The industrial cluster this region pattern of enterprises way can provide the good platform for the recessive knowledge dissemination. The recessive knowledge's dissemination forms one kind of knowledge spillover effect, must read to the production service industry cluster is the grade of service, the innovation class of service has the important meaning, the guarantee cluster's long-term development.

IV. THE MODE SELECTION OF THE PRODUCER SERVICES' CLUSTER DEVELOPMENT OF ZHEJIANG PROVINCE

The “massive economy” is the main support of Zhejiang Province’s superiority industry and regional economies. At present, Zhejiang’s distinctive advantages in industries and regions in China are also the industries and regions that "massive economy" is well-developed. Relying on the "massive economy" support industries and regional development, Zhejiang is the notable characteristic of the manufacturing sector. But along with the market further development and the industrial scale's expansion, many massive economies starts for the characteristic manufacturing industry to appear develops the bottleneck. Is facing the innovation insufficiency, the enterprise homogeneity strong initiation competition take the small and medium-sized enterprise as the main body Zhejiang manufacturing industry, the development not to be possible to hold excessively continues and so on many questions, urgent needs to design, training, the physical distribution, financing and the technical assistance and so on modern production service industry and so on exterior support exterior supports.

As a result of the development of Zhejiang manufacturing industry, three big industry belts formed, named Hangzhou bay, Wen-Tai coast and the Jin-Qu-Li highway, as shown in Fig. 2. The three belts have big differences in industrial development maturity, industrial type and so on. The interior industry similarity within the belt is high, and thus the development direction is explicit. Based on this characteristic, Zhejiang producer service clusters can be classified into three levels. The first level is, Marshall new industry area pattern, based on the industry belt. The second level is a gathering to various central cities within the industry belt. The third level is the establishment of industry clusters in central cities.

A. Hangzhou Bay Industrial Belt

Hangzhou Bay industrial belt (hereinafter refers to as Hangzhou Bay), located northeast of Zhejiang Province, taking Shanghai as the center of the Yangtze River Delta.
South Wing, including Hangzhou, Jiaxing, Huzhou, Ningbo, Shaoxing, Zhoushan. The region has good natural conditions and rich economic resources. Besides, its economic output is big and the level of development is high. In addition, the region has a large number of industrial clusters, such as Jiashan wood industry, the Haining leather warp knitting, textile and chemical fiber of Xiaoshao area, Cixi home appliances, Shengzhou neckties, Yuyao plastic and Ningbo clothing. Take Hangzhou as the center, the two sides along the Qiantang River to Shaoxing, Ningbo, Jiaxing, Huzhou in the emerging high-tech industry cluster is taking shape. Well-developed manufacturing is the market foundation of the producer services, focusing on cultivating scientific and technological research and development, creative design, finance, education and training, culture media, and other technology-intensive producer services, developing vigorously the seaports, airports and other professional logistics platform.

The second level to Hangzhou, Ningbo, Jiaxing centre for the gathering. The main objective of Hangzhou is to build headquarters base, the creative industry park, the software industry park, financial CBD and other industries concentration with high radiation and develop technology research, information services, creative design, finance, education and training, culture media, and other industries. The main objectives of Ningbo and Jiaxing are to build science and technology parks, logistics parks, a new type of specialized markets and develop research and development of software, software outsourcing, and other industries.

B. WenZhou and Taizhou Coastal Industrial Belt

This industrial belt includes two in-class city of Wenzhou and Taizhou, bordering on Ningbo and Shaoxing, South facing with Fujian, West connecting Jinhua, Lishui. It locates at economical developed area with fruitful in resources, marine resource, tourist resources, shallow seas and tidelands resources, and non-metallic mineral. The area has many developed industries, such as automobile motorcycle and spare parts, medicine chemical industry, mold plastic, clothing machinery, water pump valve, domestic electric appliances, green agricultural product, aquatic product processing, clothing, daily necessities processing, and so on. Large quantities of rich vigor's professional markets located in small cities and some massive economies already formed the characteristic industry. The characteristic industry, the professional market, and the small cities formed a trinity development pattern. Wen-Tai coast, Wenzhou and Taizhou as the central industrial belt with the private economy developed, many SMEs in the industrial cluster features, and actively develop science, technology, training, circulation, finance and other professional services. The establishment of the logistics park, micro-CBD, a new professional industry.

C. JinQuLi Industrial Belt

JinQuLi region is in the southwest in Zhejiang Province, and Jinhua, Quzhou, and Lishui are the three-class city. JinQuLi region is positioned as the main economic corridor and ecological barriers. Compared with Hangzhou Bay area and Wen-Tai coastal area, along the Hang-Jin-Qu and Jin-Li-Wen highways, JinQuLi industrial belt is in the lower level of industrial development. However, the development in JinQuLi area is greater flexibility, more malleable, and higher ecological requirements. In the area, industrial clusters have been gradually formed, such as automobiles, household commodity, metal machinery, fluorine chemicals, and food processing, building materials.

The JinQuLi industrial belt takes Jinhua, Yiwu, Quzhou and Lishui as the center. It is suitable to develop the logistics park, technology park and the new professional services such as market concentration producer services, through good foundation for the professional market, focusing on promoting the producer services such as international trade, exhibition and so on, relying on highways and railways, vigorously develop the transport hub of logistics.

V. CONCLUSIONS

The development of the cluster of producer services sector is an inevitable trend. The gathering process has spontaneous factors and also artificial impetus factors. This article, based on the inevitability and the evolution of gathering process, has discussed the idea that Zhejiang producer services have been gathering to the central cities on the basis of three big industrial belts and formed a three-level development mode, industrial belt--central city--industry cluster area. This article did not discuss the role of government in the process of producer services cluster. In the future research, it is suggested to discuss the strategies of producer services cluster.

REFERENCES
