

Research on the Development Status and Countermeasures of Producer Services in Shapingba District, Chongqing, China

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ABSTRACT

Producer service industry is an important support to promote industrial upgrading and economic development. Taking the producer service industry in Shapingba District of Chongqing as a specific research sample, this paper makes an in-depth analysis from the dimensions of intermediate input, degree of specialization, added value, development empowerment, technological innovation and green transformation, deconstructs the current situation of industrial development and weak links, and puts forward countermeasures and suggestions to help the high-quality development of regional economy.

Keywords: *Producer services, Development, Countermeasure research.*

1. INTRODUCTION

The producer service industry belongs to the intermediate supporting industry, and its coverage is the whole industrial chain. It is a very critical support for helping the industry to reduce costs and improve quality and promote the transformation and upgrading of regional industrial structure. The producer service industry is the industrial form of the transformation and upgrading of the manufacturing industry. It is also a key symbol to measure the competitive strength of the manufacturing industry, and it is also a strategic high point to occupy the competitive advantage of the global industry.[1] This paper takes the producer service industry in Shapingba District of Chongqing as a specific research sample, sorts out the current development trend of the industry, and deeply analyzes the shortcomings and outstanding problems in the industrial operation. Combined with the resource endowment, location conditions and actual situation of industrial development in Shapingba District, this paper puts forward feasible countermeasures for optimization and upgrading, promotes the efficient allocation of industrial resources in the jurisdiction and the deep collaborative integration of business forms, and

provides help for the high-quality development of regional economy.

2. BASIC SITUATION OF DEVELOPMENT

2.1 Prominent Intermediate Input Attribute, Effectively Enabling the Industry to Reduce Costs and Increase Efficiency

In recent years, the productive service industry in Shapingba District has shown a stable and positive development trend as a whole. Relying on R&D design, supply chain logistics, financial services and other formats, it has been providing assistance for the transformation and upgrading of local manufacturing industry. During the period from 2022 to 2025, the GDP of the whole region increased from 110.673 billion yuan to 132.260 billion yuan, with an average annual growth rate of 5.4%. The supporting role of producer services in the regional economy is becoming more and more obvious. With the continuous iterative upgrading of local manufacturing industry, the dependence of enterprises on third-party professional services continues to increase, and the core value of

producer services serving the real economy is gradually realized.

In terms of specific aspects, the market demand for professional services such as R&D outsourcing, industrial inspection and process optimization in the leading manufacturing industries such as intelligent equipment and auto parts in the jurisdiction shows a trend of continuous expansion. By purchasing external professional services and divesting internal supporting links, manufacturing enterprises have replaced the traditional mode of self-built supporting departments, thus greatly reducing fixed asset investment and human operation costs. Based on this situation, the region has gradually formed a two-way integrated development pattern of "service helps manufacturing, manufacturing drives service upgrading". With the development potential of the Western Science City, the local industrial chain has achieved network and digital upgrading, which has effectively promoted the transformation of the regional economy towards the "manufacturing + service" two-wheel drive development model.

2.2 Significant Knowledge-intensive Features, Consolidating the Foundation of Regional Innovation and Development

There are many colleges and universities and scientific research resources in Shapingba District, which reserve sufficient talents and intellectual resources for the development of producer services, making the industry show a significant feature of knowledge-intensive. Data show that in 2023, the proportion of employees with bachelor's degree and above in the producer service industry in the jurisdiction is 68.7%, which is 9.2 percentage points higher than that in 2021, and the advantage of talent structure is at the leading level in Chongqing. More than 10 colleges and universities in the jurisdiction can transport more than 20,000 counterpart professionals to the industry every year. Coupled with the policy dividends of local talent introduction and cultivation, large-scale talent gathering in turn promotes the quality and upgrading of the industry, and successfully forms a virtuous cycle mechanism of "talent gathering - industrial upgrading - talent retention".

During this period, the industry knowledge spillover effect has been continuously released, which has effectively activated the innovation vitality of the region as a whole. Relying on the deep cooperation between universities, research

institutes and enterprises, Shapingba District has established a regional innovation model with scientific and technological services, technological research and development, and achievement transformation as the core content. In 2023, the turnover of technical contracts in the region reached 4.73 billion yuan, an increase of 29.6 % compared with the previous period, of which more than 65% of the contribution came from producer services. In 2023, the added value of producer services accounted for 21.4% of the region's GDP, of which the contribution rate of knowledge-intensive formats to the industry was as high as 78%, and the per capita added value was 2.3 times that of the traditional service industry.

2.3 High Added Value of the Industry, Driving the Upgrading of the Regional Economy

At present, the producer service industry in Shapingba District is no longer limited to the low-end positioning of traditional industrial supporting and auxiliary support, but goes deep into the core production, R&D and value-added links of manufacturing industry, which has become the key driving force for stimulating regional industrial value-added and promoting high-quality economic development. For three consecutive years, the contribution rate of producer services to GDP growth has exceeded 35%. Among them, such as industrial design, high-end testing, technical consulting and other high-end high value-added business growth has made a breakthrough, professional, high-end production services have been widely recognized by the market.

The characteristics of high value-added industries have played a role in continuous optimization of regional economic and industrial structure. From 2019 to 2025, the proportion of producer services in the tertiary industry in the region increased from 41.2% to 48.7%, completely replacing the traditional trade industry and becoming a key force in promoting regional economic growth. With the support of the continuous development of the industry, the old model of the extensive development of the regional economy has been effectively changed, and the overall development trend is stable and good, which has laid a solid foundation for the continuous upgrading of the regional industry.

2.4 Deeply Empowering the Real Economy and Accelerating Industrial Integration and Quality Improvement

Shapingba District regards industrial digital transformation as a key point, and constantly promotes the productive service industry to take root in the real economy and serve the real economy. At the same time, the region has established a full-chain digital service model, carried out digital transformation diagnosis for enterprises, and formulated customized transformation plans, covering local leading industries, helping enterprises to reduce energy consumption per unit and improve equipment operation efficiency. The effect of digitization on industrial development is very obvious.

Supply chain services have been improved in terms of quality and efficiency, which has effectively alleviated the operating pressure of physical enterprises. Relying on the location advantages of the new land and sea channel in the west, the timeliness of local cargo tracking has been greatly optimized, the inventory turnover rate of enterprises has also been greatly improved, and the comprehensive logistics cost of small and medium-sized manufacturing enterprises has declined to a certain extent. The trend of industrial integration development continues to deepen. In 2023, the added value of producer services accounted for 21.4% of GDP, and the contribution rate to manufacturing growth exceeded 40% for three consecutive years.

2.5 Helping Technological Innovation and Unblocking the Transformation Link of Scientific and Technological Achievements

Under the influence of a new round of scientific and technological revolution and industrial transformation, the development logic of producer services has gradually shifted from the initial "demand dependence" and "mutual support" with manufacturing to the higher-order form of "development leading".[2] R&D design services play a key role in promoting regional industrial innovation iteration, and provide strong support for the upgrading of local manufacturing and emerging industries in key technologies. The industry service model has also achieved iterative upgrading. From the past simple drawing design and technical consultation, it has gradually transformed into a full-process technical solution covering product

development, production optimization and iterative upgrading. It can help enterprises shorten the product development cycle by more than 30%, provide comprehensive help for the development of emerging industries such as intelligent manufacturing and new materials, and effectively improve the innovation ability and regional radiation influence of Shapingba industry

The increasingly perfect technology transformation supporting services have broken the barriers between the innovation chain and the industrial chain. With the help of the closed-loop innovation service model in the Shapingba area of the Western(Chongqing) Science City, the intelligent transformation rate of local manufacturing enterprises has been significantly improved. Financial, legal and other supporting services have been continuously improved. By the end of 2025, the loan balance of financial institutions in the jurisdiction was 1.09 trillion yuan, an increase of 43.4% compared with 2021, of which technology-based small and medium-sized enterprises accounted for 21.5%. At present, a group of intellectual property rights, science and technology legal service institutions have gathered in the jurisdiction. In 2024, the number of technical contracts filed exceeded 2,100, the success rate of patent dispute mediation exceeded 90%, and the complete industrial innovation service ecology has been initially established.

2.6 Leading Green Transformation and Supporting Low-carbon Sustainable Development

Under the guidance of the "double carbon" strategic goal, the producer service industry has become the key supporting force for the green and low-carbon transformation of industry in Shapingba District. At present, within the jurisdiction, many industrial technology services and environmental impact assessment design institutions are deeply involved in the green upgrading of manufacturing enterprises. They will routinely provide enterprises with a series of professional services such as carbon emission accounting, energy efficiency detection and diagnosis, pollution control scheme customization and so on. With the help of various modes such as government purchase service and park coordination, green service is fully integrated into the whole process of industrial production. In addition, the industry green service model has been continuously upgraded, from the initial single end-of-pipe pollution control technology output to the

closed-loop service that can now cover the entire production cycle of the enterprise. Its service focus has gradually shifted towards low-carbon design at the source and energy-saving control in the whole process, thus becoming the core driving force for industrial green transformation.

The steady development of green finance has laid a solid financial foundation for the development of low-carbon industries. The financial institutions and state-owned platforms in the jurisdiction take the initiative to carry out the layout in the field of green economy, and guide social capital to flow accurately to energy-saving and low-carbon projects by setting up risk compensation funds and optimizing the credit approval process. At present, the local state-owned platform is actively preparing for the green industry fund, trying to solve the financing difficulties and expensive financing problems faced by small and medium-sized green service enterprises. The contribution of producer services in the fields of green supply chain construction and enterprise carbon footprint tracking accounts for nearly 40%, which continuously promotes Shapingba to move towards the highland of green service-assisted industries.

3. DEVELOPMENT CHALLENGES FACED

3.1 Imbalanced Industrial Structure, and Insufficient Supply of High-end Services

From the perspective of the internal structure of the industry, there are obvious structural shortcomings in the producer service industry in Shapingba District, which shows the overall imbalance of overcapacity in low-end services and insufficient supply of high-end quality services. According to the industry data of 2024, the revenue proportion of traditional low-end services such as logistics warehousing and business agents is as high as 58.7%, while the proportion of high value-added formats such as R&D and design, intellectual property operation, high-end testing and scientific and technological achievements consulting is only 22.3%, and its growth rate is lower than the industry average for a long time. Most of the existing technology service platforms can only provide basic information docking and business consulting services. It is difficult to deeply participate in the core production links such as enterprise technology upgrading and industrial

chain collaborative optimization, and the overall service level is at a low level.

The integration of industry and service is not enough, which further limits the improvement and upgrading of the industry. In 2024, the proportion of producer service outsourcing of local manufacturing enterprises is only 31.6%, which is significantly lower than the average level of more than 45% in the Yangtze River Delta region, and the penetration rate of high-end professional services is less than 12%. And high-quality high-end service resources are mostly concentrated in large state-owned enterprises, small and medium-sized manufacturing enterprises are difficult to reach, the popularity of services is not enough. The jurisdiction has rich scientific and educational resources, but these resources have not been transformed into industrial development advantages. The proportion of high-quality scientific research achievements in local colleges and universities is less than 18%, and a large number of high-quality technical resources and scientific and technological achievements have been lost to the field. From the perspective of market players, the whole industry presents the characteristics of "small, scattered and weak". More than 90 % of enterprises are small and micro enterprises, lack of leading enterprises to lead and drive, industrial agglomeration effect and scale effect are difficult to achieve.

3.2 Low Level of Innovation, and Not Smooth Achievement Transformation Channel

The most prominent problem is that in the field of integrated circuits, high-end chip manufacturing technology is still monopolized by foreign enterprises, which restricts the development of electronic information industry,[3] and is the key bottleneck restricting the high-quality development of producer services in Shapingba District. In the past three years, the R&D investment of producer service enterprises in the jurisdiction is not only lower than the average level of Chongqing, but also more significant than that of the eastern advanced regions. Most local service enterprises have conservative business ideas, attach importance to short-term revenue and despise long-term innovation, and generally lack R&D investment willingness and capital investment ability. The normalized collaborative R&D mechanism between universities and local enterprises has not yet been fully established. The basic research results of universities are out of line with the needs of the

market industry, and it is difficult to quickly achieve market-oriented landing. Limited by factors such as financial pressure and innovation risk, most of the local small and medium-sized service enterprises copy the existing service mode, mainly based on homogeneous operation, and the motivation of independent innovation is seriously insufficient, resulting in the overall innovation level of the industry at a low level.

The situation that the transformation channels of industry-university-research are not smooth further highlights the shortcomings of industry innovation. Within the jurisdiction, the rate of local effective docking and landing of scientific research achievements in colleges and universities is less than 15%, which is much lower than the national average. There are many problems in information asymmetry, unclear definition of intellectual property rights, and imperfect income distribution mechanism, resulting in a large number of high-quality scientific research achievements stuck in the laboratory, and it is difficult to enter the market.

3.3 Mismatch of Talent Supply and Demand, and Shortage of High-end Talent Reserve

There is a big gap and difficulty in retaining high-end compound talents, which has become a key factor restricting the industry to upgrade towards high-end and intelligent. Compared with the surrounding areas with advantages such as Liangjiang New Area and Chengdu High-tech Zone, local enterprises are lacking in salary, career development space and industrial ecological competitiveness, and the outflow of high-end talents is more obvious. Moreover, most of the existing practitioners have a single skill and can only adapt to the traditional basic service industry, which is difficult to meet the development needs of emerging high-end services. The local talent policy is mainly based on universal support. There is a lack of precise incentive policies for the shortage of jobs in the productive service industry and high-end talents, and the regional talent absorption and retention are insufficient.

The disconnection between talent training in colleges and universities and the actual needs of the industry has further aggravated the mismatch between talent supply and demand. The relevant professional curriculum models of colleges and universities in the jurisdiction are biased towards theorization, and the content update is lagging behind, and the practical training scene is relatively

simple, which leads to the weak practical ability of graduates and the lack of adaptability. The three shortcomings of insufficient talents, low quality and structural imbalance not only restrict the development of the industry, but also lead to the outflow of some high-quality industrial projects and weaken the core competitiveness of the region.

3.4 Fierce Regional Competition, and Limited Development Momentum of the Industry

There are many obstacles to the technology diffusion between regions in China. The important reason is the lack of producer services with specialized division of labor, economies of scale and knowledge spillover effects.[4] In the pattern of integrated development of Chengdu-Chongqing economic circle, the producer service industry in Shapingba District is facing fierce regional homogenization competition. Such as Liangjiang New Area, Jiangbeizui Central Business District, Chengdu High-tech Zone and other surrounding key areas, are constantly increasing the layout of high-end producer services, relying on more perfect industrial ecology, more favorable support policies, more advantageous supporting resources, Shapingba local enterprises, talents, projects have a strong siphon effect, resulting in regional market share continued to be squeezed.

The scale of local enterprises is relatively small, and the brand influence is not strong, which makes the regional competitive disadvantage further magnified. Within the jurisdiction, more than 90% of the productive service enterprises have annual revenues of less than 5 million yuan. There is no local leading enterprise or benchmark enterprise to lead, the service mode is single, and the service standardization degree is low, so there is no way to form scale advantage and brand effect. Most local enterprises focus on local scattered business, lack of market expansion ability, and have been in a weak position in large-scale project bidding and high-end market competition. Homogeneous competition has led to the phenomenon of low-price involution in the industry, coupled with the continuous rise of comprehensive costs such as manpower, space and operation, the overall gross profit margin of the industry has declined year by year. The shrinking profit space makes most enterprises unable to carry out technology research and development, model innovation and talent cultivation, and eventually falls into a vicious circle of "low price competition-profit decline-innovation

weakness", which seriously limits the long-term sustainable development of the industry.

4. SUGGESTIONS FOR HIGH-QUALITY DEVELOPMENT

4.1 Optimizing the Industrial Structure and Promoting the Development of High-end Integration

The industry has structural problems of low-end overcapacity and insufficient high-end supply. It is necessary to focus on the core track of high-end services. It focuses on cultivating high value-added industries such as industrial design, high-end inspection and testing, intellectual property operation, scientific and technological consulting, and achievement transformation. Relying on the strategic advantages of the Western Science City and the scientific research resources of local universities, it makes up for the shortcomings of high-end services in emerging industries, and establishes a full-cycle industrial service model covering R&D, production, sales and iteration. As an important carrier of patient capital, the government industrial fund has an important impact on industrial development.[5] Through the introduction of special support policies and the optimization of resource allocation methods, it guides high-quality resources such as capital, talents and technology to gather in high-end formats, completely changes the pattern of low-end service leading industries, and promotes the industry as a whole to the high-end development of the value chain.

It is necessary to continuously promote the two-way integration of industry and service, and solve the development contradiction of "strong manufacturing industry but weak service industry" in the region. The industry can establish a public service platform for manufacturing service transformation, and customize digital transformation programs for manufacturing enterprises of different sizes and types. Governments shall encourage local leading manufacturing enterprises to separate internal supporting services, cultivate independent and professional service market players, and vigorously develop service-oriented manufacturing. There will be a must to actively promote new formats such as equipment life cycle operation and maintenance, personalized technology solutions, and product value-added services, continuously increase the proportion of service income of manufacturing

enterprises, and promote industrial development from a single product sales model to a "product + technology + service" integrated comprehensive model.

4.2 Strengthening Innovation Drive and Smooth Achievement Transformation System

It is essential to firmly establish the status of enterprises as the main body of innovation and stimulate the internal innovation power of the industry. Governments shall integrate various policy tools such as financial subsidies, tax relief, and innovation special funds, accurately support enterprises to set up their own R&D institutions, and conduct in-depth technological innovation and service model upgrades in the subdivided fields. They can also establish a dynamic identification, assessment and support mechanism for R&D platforms, and provide stable policy and financial support for enterprises that continue to carry out innovative R&D. It is a necessity to guide small and medium-sized service enterprises to abandon the idea of homogeneous low-cost competition, take the differentiated development path of "special and special", focus on sub-sectors to shape core competitiveness, and stabilize the foundation of industry innovation and development.

An integrated industry-university-research collaborative transformation platform should be established to eliminate obstacles to the landing of scientific and technological achievements. The government leads and organizes the resources of universities, scientific research institutes, industry enterprises and associations to form a whole-chain achievement transformation mechanism of "R&D - docking - pilot - landing - iteration". We will improve supporting systems such as intellectual property sharing, income distribution, risk sharing, and value compensation, and encourage university researchers to actively participate in industrial development by means of technology investment, project cooperation, and part-time entrepreneurship, effectively reduce the cost of enterprise achievement transformation, and promote local high-quality scientific research achievements. Landing locally and achieving industrialization.

4.3 Improving the Talent System and Consolidating the Support of Industrial Talents

As the core carrier of knowledge and technology, human capital is a key element of innovation activities and plays an indispensable supporting role in the development of producer services.[6] Cities can carry out precise targeted talent introduction measures to make up for the gap in high-end compound talents. In view of the shortage of industries such as industrial Internet, high-end industrial design, transformation of scientific and technological achievements, and green low-carbon services, a talent support policy specifically for the producer service industry has been introduced to provide special subsidies and project support for industry leaders and high-end innovation teams. It is necessary to vigorously promote the flexible talent introduction model of "talent enclave", break through the limitations of geography and household registration, and flexibly introduce external high-end intellectual resources, so as to accurately match the needs of high-end industrial development.

It is also necessary to further promote the integration of industry and education and cultivate suitable talents that are in line with local conditions, promote local universities and vocational colleges to optimize the professional curriculum, reduce the lagging theoretical courses, and add practical and digital courses that are in line with the actual situation of the industry. We can vigorously promote the school-enterprise double tutorial system and order-based talent training mode, jointly establish training bases and jointly develop industrial projects, so that students can deeply participate in the practice of enterprise production and service, and effectively improve the degree of job adaptation. The city government shall integrate regional education and industrial resources, establish regional industrial training centers, achieve seamless integration of college teaching, job training, and market employment, steadily increase the employment rate of professional talents, and stabilize the foundation of local talent supply.

4.4 Optimizing the Business Environment and Enhancing Regional Competitive Advantages

For producer services, the government should expand the advantages of opening up these industries by optimizing the business environment,

providing policy support, and deepening international bilateral and multilateral cooperation,[7] and guide enterprises to develop in the direction of differentiation and specialization, so as to get rid of the dilemma of low-cost involution in the industry. Small and medium-sized service enterprises should be guided to abandon the homogenization of business ideas, focus on the subdivision of the track for careful cultivation, and then shape the exclusive technical advantages, service barriers. It will be important things to encourage enterprises to use digital technologies such as big data and artificial intelligence to upgrade intelligent, customized and refined service capabilities, continuously improve service added value and customer stickiness, and promote industry competition from traditional price competition to comprehensive strength competition of quality, technology, brand and service.

An industrial collaborative development alliance can be established to promote the development of enterprises. The government-led industry collaboration public service platform is built to break the development situation of enterprises fragmented and scattered operations, and promote enterprises in the region to share technical resources, market channels, talent teams and public service resources. It is essential to support small and medium-sized enterprises to jointly carry out technology research and development, participate in major project bidding together, integrate regional scattered industrial resources, cultivate industrial cluster advantages, and promote the transformation of regional industrial competition mode from individual to industrial ecological cooperative competition.

5. CONCLUSION

This paper takes the producer service industry in Shapingba District as the research object, systematically sorts out its development status, and clarifies that the regional industry has the core advantages of reducing costs and increasing efficiency to empower the real economy, gathering scientific and educational resources to highlight knowledge-intensive attributes, high value-added business forms to lead economic quality improvement, and remarkable achievements in scientific innovation and green empowerment. It has formed a good development trend of two-way integration of "manufacturing and service", and has become an important support for the high-quality development of regional economy. At the same

time, the study found that there are still many shortcomings in the development of producer services in Shapingba District, such as the imbalance of industrial structure, the insufficient supply of high-end services, the low level of innovation, the poor channel of achievement transformation, the mismatch of talent supply and demand, the shortage of high-end talent reserves, and the fierce competition of regional homogeneity, which restrict the development of industrial scale, high-end and cluster, and hinder the improvement of regional industrial core competitiveness.

In this regard, combined with the resource endowment and development reality of Shapingba District, this paper puts forward targeted development countermeasures from the four dimensions of industrial structure optimization, innovation-driven empowerment, talent system improvement and business environment upgrading, deeply explores the advantages of science, education and location, implements various optimization measures, solves the pain points of industrial development, promotes the deep integration and collaborative upgrading of producer services and manufacturing, and builds a solid industrial foundation for regional industrial transformation and upgrading, high-quality and sustainable economic development.

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