Research on the Development of Chongqing’s Intelligent Industry Based on the Background of China’s High-Quality Economic Development

Xianhang Xu *, and Ke Chen

School of Management, Chongqing Institute of Engineering, Chongqing 400056, China

Abstract. As an important direction of industrial development, intelligent industry will be the key to upgrade industry and create a new engine for economic growth. Discussing the development of Chongqing’s intelligent industry based on the background of China’s high-quality economic development not only meets the requirements of local development strategies, but also verifies the guiding role of high-quality development theory of industrial development. Through the analysis of the development status and existing problems of Chongqing’s intelligent industry, and then propose suggestions for accelerating the development of Chongqing’s intelligent industry combined with high-quality development connotations.

1 Introduction

At present, China’s economy has begun to turn to the stage of high-quality development. For Chinese cities, industrial high-quality development is the key, and it’s very important to build a modern industrial system through industrial transformation. Many countries regard the development of artificial intelligence as a strategy to win the future, and so do China. In recent years, Chongqing has focused on high-quality development and vigorously developed intelligent industries to promote the transformation of manufacturing. Intelligent industries not only include industries that use artificial intelligence as output, but also industries that design and manufacture products based on related technologies. It has become an important direction for Chongqing’s industrial development and a new economic growth driver. Therefore, it is of significance to discuss the development of intelligent industry in Chongqing based on the background of China’s high-quality development, which meets the requirements of national and local development strategies.

After the 19th National Congress of the Communist Party of China, Chinese scholars have deepened their research on high-quality development. Shi Dan et al. (2018) proposed that high-quality development should include reasonable economic structure, intensive development and sustainable development [1]. Jin Bei (2018) proposed that high-quality development should take innovation and people’s aspiration as the driving force, so as to achieve the all-round development of economy and people [2]. Ren Baoping and Li Yumo (2018) proposed that the key to high-quality development is to build a modern industrial system [3]. Du Yuwei (2019) proposed that restructuring the industrial system is the inherent requirement and realization path for high-quality development [4]. Fang Min et al.
(2019) proposed that high-quality development promotes industrial innovation and structural transformation, forming a modern industrial system [5]. Qin Fangming and Tang Juan (2020) proposed that high-quality development is a new development concept, which includes changing development mode, optimizing economic structure, and enhancing growth momentum [6]. Zhang Tao (2020) proposed that high-quality development should meet people’s comprehensive and sustainable development, and its connotation will be enriched along with social development [7]. Gao Peiyong et al. (2020) proposed that high-quality development should include three aspects: economy, society and governance [8]. Through literature review, it can be found that the current elaboration of the connotation is mainly focused on the macro and meso levels: the macro level refers to the transformation of development methods to achieve stable economic growth; the meso level refers to the continuous establishment of a modern industrial system through industrial upgrading.

2 Current situation of intelligent industry development in Chongqing

Since 2017, Chongqing has implemented an innovation-driven strategy, upgraded traditional industries with “big data intelligence”, cultivated twelve smart industries, and focused on building an intelligent industry ecological chain.

2.1 The top-level design is clear, and the development strategy continues to advance

Relying on its good location and policy advantages, Chongqing has issued the “Innovation-driven Development Strategic Action Plan Led by Big Data Intelligence (2018-2020)” and other guiding opinions to promote the high-quality development of industries. Chongqing takes the development of intelligent industry and industrial upgrading as its development direction to further promote the innovation-driven development strategy, and through urban cooperation to promote the implementation of key projects in various districts and counties, promote the coordinated development of intelligence industries and traditional industries, intelligence manufacturing and urban applications, and enable big data to empower Chongqing’s industry, urban governance, and citizens’ lives.

2.2 The whole industrial chain has been preliminarily established

A large number of intelligence enterprises have been gathering. CR MICRO, AOSL and other companies have built a “chip design - manufacturing - packaging -supporting” integrated circuit industry chain. BOE, HKC and other companies have expanded the new display industry chain. GREE, MIDEA, OPPO and other companies have built the smart home appliance and smartphone industry system. NXP, HIKVISION and other companies build a “core” industrial chain. CMIOT, CETCCQ and other companies have established an “system integration + operation service + hardware manufacturing” internet of things industry chain. The “chip-screen-device-core-network” industrial chain has emerged, and the foundation of the intelligent industry has been consolidated.

2.3 Service platform system gradually formed, and R&D resources continue to gather

With the innovation-driven development strategy, Chongqing’s intelligence industry public service platform has continued to expand, and various new service models have emerged.
The Public Service Platform of AI Resources, Huawei Cloud Center, UNIPower Platform, and Chongqing Industrial Big Data Innovation Center have been completed, and the open platform system is taking shape. While consolidating the public service platform, Chongqing attracts well-known domestic and foreign universities, institutes and enterprises to develop in Chongqing, cooperate to build high-end R&D platforms, and continuously gather high-end R&D resources for industrial development. In addition, Chongqing has also implemented talent projects such as the Overseas High-level Talent Gathering Plan, Hongyan Plan, Ba Craftsman, Haizhi Workstation, etc., to create a talent gathering platform, which has attracted a group of high-end talents at home and abroad.

3 Problems in the development of intelligence industry in Chongqing

3.1 The innovation ability needs to be improved

Chongqing’s intelligence industry has grown rapidly, effectively driving the development of the industrial chain and traditional industries. This has accelerated industrial technological innovation to a certain extent, but the pattern of weak overall innovation capabilities has not been broken. First, it’s difficult to build a industrial technology innovation system in a short time due to the lack of technology leaders and high-end R&D platforms. Second, there are few R&D enterprises and the overall innovation capability is weak, the industry-university-research cooperation with domestic and foreign research institutes is insufficient, and the efficiency of technological achievements transformation is low. Third, the number and awareness of scientific and technological service organizations are lagging behind, which cannot meet the needs of rapid market development.

3.2 The cluster effect did not show up

For a long time, the automobile and electronic manufacturing industry take a large proportion in Chongqing’s industrial. Chongqing’s intelligence industry as a latecomer, its industrial heritage, technology accumulation, and talent reserves lag behind the Yangtze River Delta and Pearl River Delta regions. Even though some enterprises have gathered in the park, industrial clusters and synergies are far from being formed. The development of Chongqing’s “chip-screen-device-core-network” intelligence industry chain is uneven. The localization of core components matching rate is low, and many companies purchase most of the core components from other places. Problems such as low-end products and market marginalization have emerged. It is difficult to form an industrial cluster effect in the short term, and the industrial chain still needs to be continuously improved. This has become a shortcoming restricting the sustainable development of Chongqing’s intelligence industry.

3.3 The total supply of talents is insufficient

Talents are the foundation of industrial development. Chongqing has introduced a batch of high-end talents in the field of intelligence through a series of talent development strategies, but the leading talents are handful. At the same time, many cities in China are vigorously developing the artificial intelligence industry, and the battle for talent is getting fiercer, and the supply of high-end talents is far behind the needs of the industry. Universities are the main positions for the cultivation of industrial talents. Universities in Chongqing have only opened artificial intelligence undergraduate majors in recent years, and the disciplinary foundation in the field of intelligence is generally weak. In addition, the application of
artificial intelligence is strong, and the curriculum and teaching requirements are high. It is difficult to build a scientific and professional talent training system in a short term. The quantity and quality of talent training cannot meet the needs of industrial development.

4 Suggestions for the development of intelligent industry in Chongqing based on high-quality development

4.1 Consolidate the innovation service system and enhance independent innovation capabilities

In accordance with the concept of “government guidance, enterprise leading, supported by colleges and universities, international cooperation and market operation”, more professional institutions should be introduced and cultivated through the agglomeration and radiation effect of the platform, so as to further consolidate the industrial technology innovation service system. Through the construction model of “a little allocation by the city, a little investment by the district, and a little investment by the enterprise”, accelerate the promotion of domestic and foreign intelligent industry enterprises and projects in various districts and counties. And with the help of hatch funds and industrial consortia, implement joint research and industrialization of industry common technologies, strengthen research in industrial foundation and application fields. Give full play to the role of the platform in driving, deriving and incubating, promoting the construction of a technological ecosystem, achieving a virtuous circle of “R&D → pilot test → industrialization → capitalization”, and continuously improve the innovation capabilities of Chongqing’s smart industry.

4.2 Accelerate the coordinated development of industries and build modern industrial clusters

In combination with the development direction of Chongqing’s intelligent industry chain, the government should strengthen policy support. Customize policies to support industries and enterprises, and use fiscal funds to support the industry precisely, and promote the common development of manufacturing and enterprises. Set up special funds to subsidize manufacturing enterprises to transform into intelligent production. While guiding the development of traditional industries to intelligent production and product intelligence, it also expands the application space for intelligent industry enterprises. With an open market and preferential policies, it will attract high-end intelligent enterprises to fill up the shortcomings in the industry chain and further increase the industry’s localization support rate. At the same time, it can accelerate the integration with different industries and realize the coordinated development of intelligent industry and other industries. By continuously optimizing the industrial layout, accelerating the clustering of industries in industrial bases and parks, and building modern industrial clusters supported by intelligent industries.

4.3 Improve the talent guarantee and break through the talent bottleneck

According to the needs of different levels of talents in Chongqing’s intelligent industry, the government should formulate targeted talent introduction and education measures, further improve the talent guarantee mechanism, and break the bottleneck of talents in the industry. First, continue to rely on Overseas High-level Talent Gathering Plan, Hongyan Plan, Ba Craftsman and other major projects to attract top talents in the intelligent industry worldwide. Second, with the help of the human resources market and headhunting
companies to introduce mid-to-high-end talents who understand both technology and business, support the implementation of various projects, and improve the professional skills and quality of professionals through various trainings. Third, encourage intelligent industry companies to strengthen cooperation with universities inside and outside the city, help universities optimize discipline construction, deepen the reform of talent training mode, accelerate the formation of a joint training system for industrial application-oriented talents, continue to develop talents together, and provide reserve talents for industrial development.

5 Conclusion

Intelligent industry is the main direction of Chongqing’s industrial development, and it is also the key to achieve industrial upgrading and build a modern industrial system. This article analyzes the development status and problems of Chongqing’s intelligent industry, and propose suggestions for accelerating the development of Chongqing’s intelligent industry based on the connotation of high-quality development, which can provide reference for the government to formulate relevant policies, and also help to verify the guiding role of high-quality development theory at the meso level industry. However, due to the wide coverage of Chongqing’s intelligent industry, incomplete industry statistics, and limited data available, this article only analyzes the development of the industry from a qualitative perspective. There are certain limitations. In the future, it is necessary to strengthen the collection and sorting of data, and further accurate research on the industry.

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