The Current Situation, Problems and Countermeasures of the Integration of Big Data and Real Economy in Guizhou

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Abstract. Since implementing the strategy of big data, Guizhou has actively promoted the integration of big data and real economy. In practice, Guizhou Province has achieved a series of preliminary results, not only gave birth to a new large data industry, but also helped Guizhou to obtain the first-mover advantage to a certain extent. The integration has promoted the transformation and upgrading of the real economy, improved the social governance capacity, and improved the quality of public services. In addition, there are some problems in the process of exploration and integration in Guizhou Province, which should arouse thinking and take effective measures.

Introduction

Guizhou implements the big data strategy, promotes the sustained and healthy development of economy and society, and explores a new way suitable for its own development. Guizhou has not only created a new big data industry, but also promoted the transformation and upgrading of the real economy, improved the efficiency of government management and service, and improved the quality of public services for residents. In the process of promoting the integration of big data and real economy, Guiyang has made innovations in the system and mechanism, and made a series of useful explorations.

The Current Situation of the Integration of Big Data and Real Economy in Guizhou

Big Data Industry Ecological Chain has been Completed Layout

After several years of efforts, the construction of big data infrastructure in Guizhou Province has been gradually improved. Famous domestic and foreign related enterprises have settled down. The ecological planning of large data industry, which consists of core business, related business and derivative business, has been basically completed. Big data industry has developed rapidly from scratch. Up to now, there are more than 8900 large data enterprises in Guizhou Province, and the total scale of large data industry exceeds 160 billion yuan, the value-added of Guizhou's electronic information manufacturing industry, led by big data, grew by 86.3% in 2017, becoming a black horse in the industrial economy.

Big Data Industry has Become a New Momentum for Economic Development

Guizhou Province has carried out the "10000-enterprise transformation" and "10000-enterprise integration" projects since 2016. The purpose of the project is to promote the integration of large data and real economy through the establishment of pilot and demonstration and benchmarking enterprises. Up to now, 1210 traditional enterprises have implemented the initial transformation of big data. The effect of the integration of big data and real economy shows preliminarily that big data not only promotes traditional industries to improve quality and efficiency, but also cultivates a number of new growth points, and emerges a number of innovative achievements and unicorn enterprises. The GDP growth rate of Guizhou Province has maintained above 10% since 2014, ranking in the top three in the country, leading the national GDP growth rate. In the GDP ranking released in the first quarter of 2018, Guizhou ranked first in the country with a growth rate of 10.1%.
Big Data has Improved Social Governance and Public Service Level

Guizhou first used big data to improve governance and service capabilities. Guizhou province built a "cloud Guizhou" system platform in 2014. Government information is shared on the cloud platform, and residents can handle medical social security, social credit, public security law enforcement and other matters on the platform without leaving home. The number of registered users of the cloud platform has reached 6.3 million. 335 system applications have been loaded on the platform, and some information application systems of the government are running on it. The administrative approval cycle is speeded up by 75% through the cloud platform, and 220 items can be completed within a working day.

Guizhou Province is also closely integrating large data with public services. Large data is widely used in poverty alleviation, education, medical and other fields. In the medical field, the four-level public medical institutions in counties and townships of Guizhou Province had been connected remotely by the end of 2017, which could share high-quality medical resources. More than 1,500 township hospitals and community health service centers in villages and towns had achieved full coverage of telemedicine, thus solving the problem of difficult medical treatment for the people in remote mountainous areas. The province has achieved remote imaging diagnosis for 50 thousand patients through telemedicine consultation. In the field of poverty alleviation, the "precise poverty alleviation cloud" in Guizhou Province is an innovative achievement that closely integrates large data with precise poverty alleviation work.

Problems in the Integration of Big Data and Real Economy in Guizhou

Although Guizhou Province has made initial achievements in the exploration of the integration of large data and real economy, there are still some problems, such as weak industrial foundation, small scale, insufficient open and sharing of data, relatively lagging behind in the construction of information infrastructure, lack of rules and regulations on data security, transaction, supervision, standards and management, and lack of talents. And so on.

The Integration of Big Data and Real Economy in Guizhou is Still in Its Infancy

The integration of big data and real economy in Guizhou is still in its initial stage. Compared with their own development, the integration of big data and real economy is low, and the application level is not high. According to the Research Report on the development of deep integration of large data in Guizhou Province in 2017, only 20.2% of the enterprises in Guizhou Province realized the comprehensive integration of large data and key business links. 94.6% of the enterprises are still in the primary or intermediate stage of integration. Compared with the national level, the integration of big data in Guizhou is also in a relatively backward position. The development level of integration of large data and real economy in Guizhou Province is 33.81, which lies in the third echelon of the whole country. The popularization rate of digital R&D tools and the numerical control rate of key processes in key industries in Guizhou Province are 14.5 and 12.8 percentage points lower than the national average respectively. The fusion index of people's livelihood and big data is only twenty-seventh in the country.

There are three main reasons for the difficulty of enterprise data fusion. One is that the traditional enterprise concept lags behind and the significance of data fusion is unclear. The other is that the integration work is constrained by the lack of funds and talents for enterprise transformation. The third is that the integration work lacks benchmarking enterprises to learn from.

There is Still a Broad Space for Development, Industry Lacks Leading Enterprises

Guizhou Province has the natural environment and policy advantages of large data industry, but compared with Beijing, Guangdong, Zhejiang and other advanced areas, the development of large data industry in Guizhou Province is still in its infancy. There is still a broad space for development. According to the Blue Book on Big Data: China's Big Data Development Report No.2, Guizhou Province scored 40.24 points, ranking seventh in the 31 provinces' Big Data Development Index,
36.05 points behind Guangdong Province, which ranks first. According to the China Big Data Industry Development Assessment Report (2018), the development level of Guizhou Big Data is 38.35 points, 24.76 points lower than that of Beijing, which ranks first.

In addition, the large data industry in Guizhou Province is still lack of benchmarking leading enterprises, difficult to form a nationwide influence, difficult to lead the industrial ecological development and produce a strong clustering effect, difficult to attract and retain high-level Internet talent. Moreover, Guizhou Province also lacks a large number of innovative small and medium-sized enterprises in data storage, database research and development, data mining and analysis, lack of financial, scientific research and other large data supporting services to support enterprises. According to the "2016 China Big Data Enterprise Ranking List", Guizhou Province has only 9 big data enterprises, far from the 276 enterprises in Beijing, ranking No. 1.

**Lack of Relevant Talents in Big Data Industry Development**

The lack of professionals in big data is one of the important factors that hinder the integration of big data and real economy. On the one hand, the large data industry urgently needs a number of professional research and development personnel, including data mining, statistical analysis, artificial intelligence, data security and other professional technical personnel. On the other hand, the integration of big data and real economy needs high-end management personnel who know both big data and real economy operation. According to statistics, there are 111 "service teams" in Guizhou Province to promote the integration of large data and real economy, but only 33 of them have service support teams in Guizhou. The reason is that there is a great shortage of large data talents in Guizhou and the local talent training cannot meet the demand of large data market for the time being; and in attracting foreign talents, Guizhou lacks the attraction of a first-tier city.

**Big Data Standards, Laws, Regulations and Norms Lag Behind**

The prerequisite for the development of big data is to promote the openness, free flow, fair trade and security protection of large-scale data. And this flow is not confined to Guizhou province. At present, there is a lack of large data related standards, norms, laws and regulations are still lagging behind, the relevant supporting environment is not perfect. For example, in order to solve the "information island" problem, it is necessary to open the data, but how to ensure business information and government information security? How to prevent personal privacy information leakage? These are the key issues to be solved. Since data transactions are involved, the question of ownership of data property rights must be answered. Which data can be opened? How to open up? These are the urgent problems to be solved in the integration of big data and real economy.

**Suggestions on the Integration of Big Data and Real Economy in Guizhou**

The integration of big data and real economy is a strategic task for Guizhou to achieve leapfrog development in the information society. Based on the experience and problems of the integration of big data and real economy in Guizhou Province, we should continue to improve the ecosystem of large data development, perfect laws and regulations, protect data security and personal privacy, build a large data and information economy talent base, lay a solid foundation for development, strengthen innovation and cultivate, nurturing new formats and new energy.

**Improve Laws and Regulations, Protect Data Security and Privacy**

The healthy development of big data industry must be based on the construction and perfection of standards, laws and trade norms. Therefore, in the area of data security, it is necessary to introduce the basic laws and regulations on data operation and security as soon as possible, especially the Personal Information Protection Law. Strengthen the construction of network security system, speed up the research and development of data security technology, and intensify the crackdown on violations of data security. Enterprises and government departments should focus on integrating data resources, strengthening data security and intellectual property management, and establishing and improving standards and norms for data resource management.
Build Big Data and Information Economy Talent Base, Lay a Solid Foundation for Development

Talents are the scarcest resources for the development of large data. In order to solve the problem of shortage of big data talents in Guizhou Province, we should make joint efforts in many aspects. One is to establish a government-led, University and enterprise cooperation, the construction of Industry-University-Research trinity of big data professional personnel training base and training base. Secondly, local colleges and universities should be encouraged to set up big data-related specialties and establish cooperative training mechanism with enterprises and scientific research institutes to form a big data research team integrating production, teaching and research. Third, optimize policies, improve treatment, improve the talent introduction mechanism, attract high-end talent to work in enterprises or scientific research institutes, give full play to the role of leading figures. Fourth, intensify training, visit and research model units, learn advanced experience, give full play to the growth potential of local talent.

Promote Application and In-depth Integration, and Promote Transformation and Upgrading of Traditional Enterprises

The integration of big data and real economy in Guizhou Province has achieved initial results, promoting the transformation and upgrading of some leading traditional enterprises. In view of the problems arising in the integration, it is suggested that Guizhou Province should intensify its efforts to implement the strategy of large data and continue to promote the breadth and depth of the integration of big data and real economy. One is to mobilize the media to continue to publicize the theory and practice of modern information technology such as big data to drive economic growth and social development, and firmly establish the concept and thinking of big data. Secondly, we should continue to break down the obstacles in the mechanism, promote the construction of national large data comprehensive test area, find the difficulties and pain points, and solve the problems pertinently. Thirdly, we should continue to deepen the "transformation of thousands of enterprises" and "integration of thousands of enterprises" projects, cultivate various types of advanced models, and summarize and promote them.

Continue to Foster Market and Market Players, and Promote the Rapid Development of Big Data Industry

Guizhou should promote the healthy and rapid development of the big data industry, and enhance the competitiveness of Guizhou's big data industry. Firstly, we should support the cooperation of "production, learning and research" in big data science research, continue to encourage technological innovation, model innovation, product and service innovation, and business innovation, reward and set up a model for innovative achievements that have made significant contributions; secondly, we should continue to increase the variety and number of big data enterprises, foster healthy big data industry ecosystem, give full play to the role of big data test area. On the one hand, continue to attract well-known big data leading enterprises to settle in Guizhou. On the other hand, encourage the rapid growth of local innovative enterprises. Thirdly, we should intensify our efforts to cultivate the market players of large data industry, investigate the needs of enterprises, innovate the mechanism and system, and promulgate targeted support policies. Fourthly, data sharing should be encouraged, and mechanisms and modes of large-scale data exchange and transaction should be explored in multi-dimension. The construction and operation of data exchange, service and trading platforms should be encouraged. Fifth, we should encourage the construction of large data industrial parks and incubators, increase investment and promote the formation of a good environment for collaborative innovation of big data. Sixthly, through the investment of funds, we should guide industry innovation and rapid development, continue to increase financial support, improve the investment and financing system of social funds, and increase support in tax revenue and land security.
Continue to Promote the Integration of Big Data and the Real Economy, Guide the Development of Breadth and Depth

Promote the breadth and depth of the integration of big data and real economy. Firstly, taking the integration of government affairs and livelihood with big data as a breakthrough point, the relevant enterprises should be guided to speed up innovation, continue to deepen their efforts in the fields of government affairs, medical care, education, transportation and tourism, and let the public experience firsthand the changes brought to the economy, society and life by big data, so as to form a good public opinion environment for integration. Second, expand the cultivation scope of typical cases and pilot demonstration projects, analyze and summarize their characteristics and experience, increase media publicity, guide other enterprises in all aspects of production and operation to speed up the pace of integration with big data. Thirdly, around the characteristics of Guizhou's industry, large data fusion innovation is carried out in marketing, production, supply chain management and other links to drive enterprises to improve quality and efficiency, and new services, new formats and new models are created. Fourthly, we should promote the integration of big data with agriculture, rural areas and farmers, promote the application of big data in agricultural products trading, traceability and poverty alleviation, innovate business forms, and enhance farmers' enthusiasm for returning home to start their own businesses.

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