Design of Inland Free Trade Zone Operation Management Information System Based on Big Data Platform

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Abstract: In order to understand the design of inland free trade zone operation management information system, a research on the design of inland free trade zone operation management information system based on big data platform is put forward. Firstly, this paper analyzes the use of big data analysis tools to comprehensively reform and innovate the operation and development model of government and enterprises in the free trade zone with three application platforms: public information service platform, comprehensive trade business platform and comprehensive supervision platform. At the same time, it puts forward feasible solutions to the problems of talents and funds. Secondly, it describes the construction of the audit mode of inland free trade zone under the background of big data. The free trade pilot zone is an important strategic measure of the country, focusing on institutional innovation, and it is an important way for the country to try first and form a development experience that can be popularized. Finally, the safeguard measures of the audit mode of inland free trade zone under the background of big data are summarized. Applying big data technology to the construction of the audit mode of inland free trade zone is not only in line with the requirements of the times and technological development, but also an important measure to promote the benign development of inland free trade zone.

Keywords: big data; Inland free trade zone, operation management

1 Introduction

With the promotion of the Belt and Road strategy, the construction of inland free trade zone has become one of the core contents of China's implementation of the free trade zone strategy. The construction of inland free trade zone came into being on the basis of alleviating the operating pressure of traditional coastal free ports and free trade zones. It can not only alleviate the pressure of goods storage in coastal ports, but also promote regional economic development and infrastructure construction, and also play an obvious role in attracting foreign investment and developing offshore finance. In order to give full play to these functions, inland free trade zones have introduced new economic and financial institutional arrangements. These institutional arrangements may bring certain risks. How to build a good institutional constraint of inland free trade zone has become a concern of all sectors of society.

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"Big data" is an information asset that needs new processing mode to have stronger decision-making, insight and process optimization ability to adapt to mass, high growth rate and diversification. The Outline of the Thirteenth Five-Year Plan puts forward "implementing the national big data strategy", which shows that the era of big data has really arrived, and the integration of free trade zone and big data is a historical necessity. The construction of inland free trade zone has changed greatly from the background of the times, domestic and international objective environment and people's subjective cognition. How to use the concept and analytical tools of big data to scientifically promote the reform and innovation of inland free trade zones is an urgent milestone. At the same time, the big data strategy can be implemented by taking economic and trade models such as free trade zones as carriers. It can be said that the free trade zone and big data are mutually supportive, harmonious, complementary and inseparable [1].As shown in Figure 1:

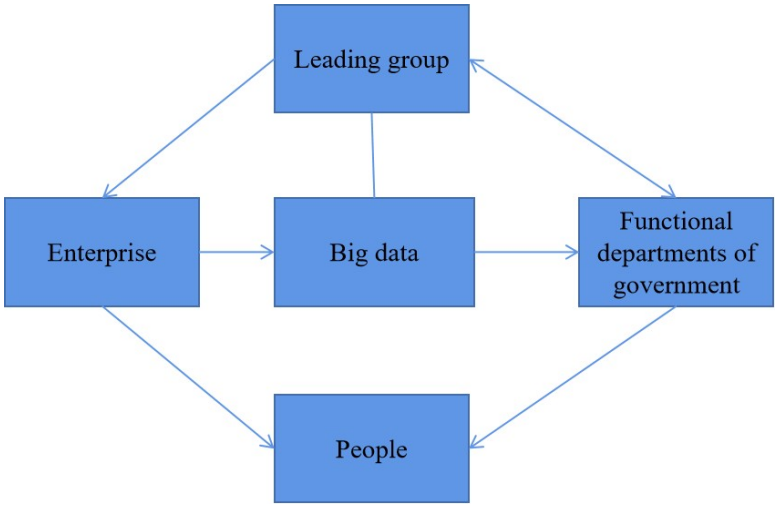

Figure 1 Big data management framework of free trade zone

2 Construction of Big Data Application Platform in Free Trade Zone

2.1 Public information service platform

The platform includes self-service inquiry of public information such as industry and commerce, taxation, customs, quality inspection, food and drug supervision, public security, and online approval of cross-departmental business in the Free Trade Zone. Under the traditional business process, there are some problems such as repeated approval of the same item by different departments, mutual recognition of departmental results, delay of approval process, etc. The platform can realize the sharing of basic raw data, real-time data and mutual recognition of stage approval results by government functional departments, and enterprises can self-check the approval progress and track and remind the overdue approval departments. The standardization, digitization and convenience of government process greatly reduce the pressure of window service and improve efficiency and accuracy. At the same time, enterprises have saved the cost of "leather shoes", reduced the time cost, and provided a

convenient way for people to effectively supervise government services[2]. As shown in Table 1:

Table 1 Traditional Management of Free Trade Zone

Leading group of free trade zone			
industry and commerce	taxation affairs	customs	quality testing

2.2 Trade integrated business platform

The platform is designed for the characteristics of many foreign trade enterprises, logistics gathering and financial gathering in the region. Traditionally, the business activities of enterprises have poor timeliness, sharing and coordination, which will lead to problems such as overstocked inventory or short supply, broken capital chain or idle funds. In terms of refined management and precision marketing, enterprises can achieve a qualitative leap in business activities with the help of big data analysis and application. The trade integrated business platform includes several sub-platforms: customer information platform, order management platform, logistics platform, payment platform, quality information platform and credit platform.

On the customer information platform, enterprises can screen their target customers in the huge customer information base, gain more business opportunities, and even learn more about the credit and public financial reports of target customers. On the order management platform, enterprises can analyze past orders according to big data to predict the future demand of this product, so as to effectively control costs and reasonably arrange business activities such as raw material procurement and product production.

2.3 Integrated supervision platform

The platform includes monitoring, early warning, intervention, public opinion analysis, public safety monitoring and early warning of abnormal data of the above two platforms.

The comprehensive supervision platform does big data analysis, early warning and tracking of suspicious transaction reports against money laundering. Because it is necessary to monitor and prevent not only the money laundering risk of payment platform through financial institutions, but also the money laundering risk through trade departments and specific non-financial institutions, the comprehensive supervision platform must be given full power to retrieve relevant data of customs, taxation, industry and commerce, public security and other departments of the public information service platform, and monitor and analyze suspicious transactions and money laundering behaviors in the real economy sector in a timely manner; According to the big data analysis of abnormal data of the platform, it can also do tax evasion and dishonesty prediction of enterprises. The application of these big data has changed the traditional working mode, improved the accuracy of prediction, and can prevent abnormal special events before they happen[3].

Public safety is the premise and guarantee for the operation and development of FTZ. Conduct big data analysis on videos and images monitored in real time in the area, find anomalies, and make early warning and intervention. For example, if there are people who have escaped from the internet in the crowd, face recognition technology can locate suspicious people from video

images in seconds, and fuzzy recognition technology can find illegal vehicles in traffic flow. Once an abnormality is found, it will automatically warn and track, and if necessary, the system will automatically send intervention instructions to control the situation in the first time. Similar big data analysis tools can also realize the assessment, early warning and intervention of the danger degree of people gathering in public places and wandering in special areas. As shown in Table 2:

Table 2 Three Application Platforms of Big Data Center

Comprehensive supervision platform	Public information service platform	Trade comprehensive property platform
Public opinion monitoring	Industry and commerce, taxation and customs	Logistics platform payment platform
Public safety early warning	quality testing	Quality information platform
Monitoring and analysis platform abnormal data	public security	Credit platform

3 Construction of Audit Mode of Inland Free Trade Zone under the Background of Big Data

The Pilot Free Trade Zone is an important strategic measure of the country, focusing on system innovation, which is an important way for the country to try first and then form a development experience that can be popularized. China's free trade pilot zones currently include coastal free trade zones and inland free trade zones. Inland free trade zone mainly relies on local characteristics and regional development characteristics, and pays attention to the combination with local characteristic industries and professional service industries. In the context of the gradual popularization of advanced technologies such as big data, Internet and cloud computing, we are committed to building an inland free trade zone audit model that integrates advanced technologies to promote the sound development of inland free trade zones[4-5].

3.1 Build a big data audit platform for inland free trade zones.

Actively introduce advanced technologies such as big data, Internet and blockchain to build a big data audit platform for inland free trade zones. Under the idea of an integrated and all-round audit pattern, an integrated big data audit platform system will be formed, including the national big data audit platform, the provincial government big data audit platforms, and the big data audit platforms of enterprises and units in the inland free trade zone. The big data audit platform should not only ensure the vertical interconnection from the national audit platform to the audit platforms of enterprises and units in inland free trade zones, but also open up the interconnection of provincial audit platforms and the horizontal interconnection of audit platforms in inland free trade zones. Such a vertically interconnected and horizontally interconnected big data audit platform is not only a necessary move to adapt to the current technological development and practical needs, but also a basic prerequisite to ensure that the big data audit model in the inland free trade zone plays its role[6-7].

3.2 Establish the data system of big data audit platform in inland free trade zone.

Establish and improve the data collection system, data storage system, data security system and data analysis system of the big data audit platform in the inland free trade zone. Each subsystem in the whole big data audit platform system should perform its duties and play its due role. The data acquisition system is responsible for collecting data from the Internet, national audit platforms and other provincial audit data platforms, as well as various audit data collected and collated by audited units and audit institutions. The storage system classifies and stores the collected data through various file data storage techniques. The data security system is responsible for optimizing all data and scheduling them as needed. The data analysis system calculates and analyzes the relevant data according to the audit requirements to achieve the purpose of risk early warning and prevention[8].

4 Safeguard measures for the audit mode of inland free trade zone under the background of big data.

Applying big data technology to the construction of audit mode of inland free trade zone is not only in line with the requirements of the times and technological development, but also an important measure to promote the benign development of inland free trade zone. However, the current big data technology is still immature, the integration of big data and related technologies is not deep enough, and there are still some problems in the development of inland free trade zones. Therefore, in order to ensure the implementation of the audit mode of inland free trade zone based on big data, measures need to be taken from the following aspects.

4.1 Further improve the audit system.

Big data technology is not mature enough, its development is not perfect enough, and the combined application of big data technology and audit work needs time to verify and improve. From the current reality, the new audit system has not been popularized. As a new development system, the inland free trade zone still has a lot of room for improvement in its audit work. Therefore, it is necessary to speed up the improvement of the relevant audit system. First, on the premise of investigating the inland free trade zones and audit institutions at all levels, we will step up the formulation of relevant guidance on the big data audit work in the free trade zones, improve various criteria systems, and clarify various relevant audit procedures and standards; Second, in the process of carrying out audit work, we should pay attention to the connection with practice and revise and improve the theoretical system in time according to actual needs. Of course, the revision and improvement here includes not only the revision of government departments according to actual needs, but also the flexible revision made by audit institutions according to actual work.

4.2 Do a good job in the application of related technologies.

The construction of big data audit mode in inland free trade zone depends on the application of various advanced technologies such as big data, Internet and blockchain. In this context, governments at all levels, audit institutions, inland free trade zones, enterprises and institutions should actively do a good job in the introduction of advanced technologies and technical

equipment. First of all, on the basis of perfect internal operation of each institution, it should be interconnected with other big data audit platforms, give full play to the technical advantages of big data, and gradually realize the deep integration of big data and audit work. On the basis of ensuring the operation of the big data audit platform in the inland free trade zone, the audit work is further accurate, timely and efficient. In addition, according to the actual situation, we can also adopt the form of service outsourcing, establish a strategic cooperative relationship with external technical teams, and sign a long-term service agreement to realize the application of related technologies and update and upgrade them in a timely manner[9-10].

5 Conclusion

The road to reform and innovation in the free trade zone in the era of big data is the road to big data. The basic function of big data center is to connect big data resources inside and outside the region, inside and outside provinces and cities, at home and abroad, and use big data technology to serve government and enterprise users in the region as needed. At the same time, the more important extension function is to take the FTZ as a whole platform form, display information openly and transparently in the public view, provide a display platform for FTZ enterprises across time and space, and feed back external market information more effectively and accurately.

As the value of big data is more and more recognized, big data transactions are gradually coming into people's sight. In the era of big data, the reform and innovation of the free trade zone has rules to follow and is profitable, which will surely drive the government and enterprises in the region to forge ahead together and create a unique road for the operation and development of the free trade zone.

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