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The Transformation of Government Governance Model from the Perspective of Big Data

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Abstract: *The information age has become the main feature of the development of the times. Promoting the modernization of the national governance system and governance capabilities is the overall goal of comprehensively deepening reforms. It is also the requirements and challenges that social and economic development and technological progress pose to the country and government in the new environment. This article uses literature research methods and logical deduction research methods to find that traditional government governance models have important characteristics such as the economicization of governance goals, the hierarchical governance of governance structures, and the proceduralization of governance methods. Therefore, it is necessary to use new technologies such as big data to realize the transformation and application of science and technology, the transformation and innovation of thinking, and the transformation of government governance mode.*

Keywords: *big data, government governance, social governance*

1. Introduction

Government governance is the government's governance of social and public affairs, and the government governance model is an organic combination of ideas, structures and operating methods. In recent years, the pressure on government governance has gradually increased, and the innovation of related governance theories and the improvement of governance capabilities are urgently needed. In this regard, the state has specifically studied several major issues in advancing the modernization of the national governance system and governance capabilities, with particular emphasis on "establishing and improving the system and rules for administrative management using technological means such as the Internet, big data, and artificial intelligence. Promote the construction of digital government and strengthen data is shared in an orderly manner and personal information is protected in accordance with the law". In order to respond to the requirements of the times, promote the transformation of the government governance model.

2. Traditional government governance model

2.1 One-sided pursuit of economic indicators

The goal of government governance is to manage public affairs and meet the needs of individuals in society, that is, goals and needs are linked together. Under the traditional background, material or economic social needs account for a large proportion of the overall structure, which directly determines that the main goals of government governance and public management present the characteristics of economicization, that is, the main purpose of government governance is to improve Economic indicators, and as far as possible to meet the material needs of citizens, such as basic living security such as clothing, food, housing, transportation, and social material security required for individual development, rather than diversified needs. Some scholars call this theory and practice GDP supremacy or GDP growth doctrine [1]. At the same time, a purely economic management method can easily cause problems such as the widening gap between the rich and the poor and the uneven development of urban and rural areas. In fact, the current level of China's economic development has been greatly improved compared to the past. According to official data from the National Bureau of Statistics, China's GDP in 2004 was US$1.93 trillion, accounting for 4.4% of the global total, ranking sixth in the world. After more than ten years of development, China's GDP has reached US$99.09 trillion in 2019,

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accounting for more than 16% of the global total, ranking second in the world. With the continuous economic development, the material needs of Chinese citizens have been continuously met, and its overall demand system has gradually expanded. The blind pursuit of economic development and meeting the material needs of social members is no longer the only goal and significance of social governance and management. Other aspects should be paid attention to needs of citizens. Coupled with the networked and data-based social contact methods, people can receive different types of information in their own homes and increase their awareness of the world. On this basis, people's needs will be richer and more diversified. The traditional purely economic government governance goals may be overlooked in terms of needs other than material and economic development. At the same time, there may be shortcomings in the efficiency of serving citizens' overall demand system, social governance and public management, so it needs to be diversified reform. Moreover, in the context of big data and other technologies, this diversified reform will inevitably require the power of technology.

2.2 The management approach presents a programmatic mode

If the government governance process is broken down into small links, then traditional government governance manifests itself as following scientific and rational logical thinking, and accomplishing governance goals with specialized division of labor, strict processes and regulations. In this mode, the vertical and horizontal transmission and delivery of information have very obvious procedural characteristics. This feature makes the traditional government governance model limited to a fixed framework [2]. At the same time, from the perspective of all social elements participating in the governance process, its behavior also has relatively solid characteristics, which is not conducive to the value display and creativity of the subjects in social governance function release.

Specifically, in the process of government governance, in addition to the government and its related departments, all social subjects are also the subjects of governance of public affairs. In recent years, the theory of diversified governance has gradually been recognized by the academic community. It is one of the difficult problems that need to be broken through in the theoretical community to give full play to the governance value and function of various subjects in society. Typically, such as enterprises, social organizations, and the public, because they have a special status in the governance structure that is different from the main body of the government, the activity space is closest to the people's livelihood at the grassroots level and the reality of the market, so they know the market demand and people's livelihood best. In this sense, encouraging and absorbing all subjects of society to participate in governance is an important cornerstone for strengthening and innovating social governance. The procedural and command-based government governance methods limit the creativity and fundamental role of various subjects in society. In fact, this is an obstacle to the transformation and application of the theory of multiple subjects. Another defect of programmatic governance is that it is difficult to deal with emergency and non-recurring social events. The important content of government governance and social management is the prevention and control of risks and the management of social events. The occurrence of non-recurring social events may have the characteristics of suddenness, urgency, and particularity, and procedural preset governance methods cannot effectively respond. Non-recurring social events and sudden social risks, and the prevention and control value of non-recurring risks of various subjects in society may be subject to procedural and mandatory governance requirements, and can't effectively resolve social crises.

2.3 Hierarchical trend of governance structure

The concept of governance structure was first applied in the field of corporate management. According to Michael Porter's theory of competition, from the strategic decision-making level to the specific operation level, a series of production and operation activities of an enterprise are distinguished from each other and related to each other value chain [3]. The competitiveness of an enterprise depends on the comprehensive competitiveness of the entire value chain. Porter's value chain thinking reflects the hierarchical structure of business management, and the corresponding flat structure. The characteristics of the two are different in the number of levels, the steepness of the shape, and the degree of power concentration. The characteristics of the hierarchical structure include multiple levels, steeper shapes, fewer elements at each level, and a dedicated interface for information transfer between levels, and it takes a long time to upload and release information. The shortcomings of this structure are that it first reduces the efficiency of information transmission. In the governance process, the information is transmitted at multiple levels, which can't achieve better results in time; secondly, it increases the cost of governance, that is, the interface setting in the governance structure, personnel

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allocation, etc., the delivery mechanism consumes part of the organization's overall resources; once again reduces the quality of governance, but also increases the possibility of information distortion. The hierarchical governance structure is also very common in the government governance system. The government governance has passed a long time and more levels of information transmission during the operation process, and its governance efficiency may be reduced, and according to the centralized characteristics of the hierarchical structure, the government governance process there may be multi-level rent-seeking in the government, which further increases the cost of governance compared to the enterprise. That is to say, the drawbacks of the hierarchical governance structure of the enterprise may be more serious in the process of government governance.

The application of hierarchical structure in the traditional government governance model has its practical basis. China has a vast territory and the characteristics of administrative divisions determine the need to establish more governance levels in order to achieve effective overall social management. At the same time, technical limitations determine the bureaucratic mode of instruction transmission and information feedback. In the context of data technology, the transmission of data information has broken through the limitations of time and region, and can realize borderless and real-time transmission [4]. Therefore, in the transformation of government governance structure, data information technology and network technology play a very important role.

3. The transformation of government governance model from the perspective of big data

3.1 Transformation of perception from economics to diversification

First of all, the concept of perception is the clarity of demand. For example, in the traditional government governance model, economicization is a single economic demand, and its perception method is measured by economic indicators [5]. Under the background of new social development, economic development has reached a certain level, people’s needs have begun to show a diversified trend, that is, they include multi-dimensional needs such as spiritual interests and development interests, which expand the goals and value system of government governance. On this basis, simply using economic indicators as the perception standard is no longer suitable for the development of the times, and a diversified demand system is more difficult to measure. At this time, the new perception function provided by big data technology can be used to obtain citizen demand data, and use this as a benchmark to form a citizen demand database, analyze, evaluate, and predict changes in citizen behavior patterns and demand systems, so as to achieve the effect of enhanced perception.

In China, the traditional data collection mode is generally written and paper-based. For example, in the public service field, information about residents or user needs is collected by filling in questionnaires and interview materials. Because these forms may have defects in terms of time, cost and accuracy, in the context of big data, networked data collection methods and user demand perception models can be used to accurately realize demand perception and further improve public services efficiency and reduce the cost of upfront services. In addition to the public service sector, new data technology can be used in public security and system optimization to improve perception, understand social development needs more accurately, and improve the supply efficiency of public goods and other aspects.

3.2 The transformation of superior efficiency from programmatic to intelligent

The general meaning of optimization is to seek better solutions. Every aspect of governance needs to adopt data and new thinking to form the overall maximum efficiency. In the context of big data, data and network technologies can improve the proceduralization and rigidity in the traditional government governance model, and form a smart government governance method and social element integration situation.

Specifically, government governance in the context of big data should first reflect standardization and humanization, and build smart government service platforms, such as smart government online platforms and standardized government affairs platforms, to achieve the integration and integration of government affairs; secondly, create an intelligent office system, change the paperless and procedural cumbersome governance process, and optimize the governance environment; thirdly, an automatic optimization and personalized office system can be built within the government and its departments, and it can be efficiently connected with the external environment; Finally, build a government cloud data center, use virtualization technology, storage management technology, and data resource

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management technology to achieve high security, efficiency, high utilization and low-cost government data processing, and generally improve the traditional programmatic governance method , to give full play to the scientific and technological value of big data, cloud computing and smart technology to realize the wisdom and dataization of overall government governance.

3.3 Collaborative transformation from hierarchical to flattening

Collaboration is the collaboration of multiple governance entities, and the original structure is perfected. Under the traditional government governance model, the hierarchical characteristics are first reflected in the layer-by-layer transmission of governance instructions and information feedback, which has defects such as low efficiency, high risk of information distortion, and high governance costs. The flattening is to compress the hierarchy and break down the barriers of time and space, so as to reduce the cost of governance and reduce the possibility of information distortion. In a flat governance structure, governance efficiency will be greatly improved. For example, when a sudden social incident occurs, the traditional hierarchical information transmission mode will greatly slow down the event processing speed, and the social damage will be further expanded during the information transmission process, while the flat information interaction mode will transmit the incident and handle the incident in a short time [6]. Instruction, even real-time processing mechanism can be realized. In fact, flat structural changes are very difficult to achieve in traditional enterprises or governance frameworks, including the setting of interfaces and the allocation of resources. In the context of big data technology, an information exchange platform can be built to realize real-time information sharing, which can effectively reduce the level of information transmission. The focus is on the flattening of resource management, flattening of workload management, flattening of interface and orchestration management, and the flattening of performance management, etc., and technical support such as cloud computing further provide the physical layer foundation for the improvement of government governance structure and the creation of information sharing platforms.

At the practical level, a data-based governance and supervision system can be built, combined with new technologies such as the Internet, Internet of Things, artificial intelligence, and blockchain to strengthen and innovate social supervision, and use the technological advantages of rapid mining, precise analysis and real-time monitoring of big data technology, such as grid-based digital platform management mode, comprehensive data monitoring system, data and risk early warning system, data-based statistical analysis system, etc., highlighting the virtuality, platformization and integration of modern governance structures. This is not only conducive to optimizing the government's organizational structure, improving the overall governance capacity of the government, but also conducive to social participation in public governance and supervision, reducing governance levels, making up for the defects of information asymmetry under the traditional governance structure, and realizing decentralization in the true sense and flattening.

3.4 Integration and transformation from singularity to networking

Network governance itself is a new type of theory and development trend in the field of public management, which mainly emphasizes intercommunication, sharing of resources and information, and achieving the goal of common governance. The main value of new technologies such as big data technology is sharing and interaction. Therefore, the background of big data is the opportunity for the transformation of networked government governance and management models, forming a collaborative integration of overall social governance information and data.

At the practical level, the above-mentioned integrated system and overall system can be realized through the construction of data-driven systems, such as the establishment of a big data technical support system, the use of data analysis and parallelization, and visualization technology to reduce the deviation of information transmission between subsystems, and more accurately integrate different fields or to create a new type of data-based think tank and its support system, and promote its market-oriented operation, which is conducive to gathering market players, experts and talents in various fields and other social forces, and provides an important contribution to the improvement of the overall quality of government governance value. Compared with the traditional singular connection, this kind of connection can exert the function of social individuals, and it is also conducive to the use of data technology to break the time and space barriers of social connection.

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4. Conclusion

The modernization of the national governance system and governance capabilities and the improvement of government governance capabilities are new requirements at the national strategic level and new needs in the process of social development in the new environment. In the context of big data, the economicalization of governance objectives, the proceduralization of governance methods, the hierarchization of governance structure and the simplification of contact methods in the traditional government governance model cannot adapt to the new public demand system. People's needs are increasingly diversified, and social connections have begun to shift from face-to-face to cloud and cyberspace. As managers of social affairs, the government and its departments should give full play to the scientific and technological value of emerging technologies such as big data in the governance process, and change governance thinking.

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