New Features, New Challenges and New Paths of Government Data Governance——Based on the background of digital government construction

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Abstract. The construction of digital government is an important tool to promote the modernization of government governance system and governance capacity, the rise and development of big data provides new ideas and methods. In this context, it is an inevitable trend to apply big data technology to various fields of government governance and to continuously optimize the government data governance system. By analyzing the characteristic factors of government data governance, this paper explores the problems and deficiencies of the government's big data governance system from three aspects: internal management, external environment and data itself, and puts forward decision-making suggestions for promoting the construction of digital government, and promotes the continuous optimization of the big data governance system and achieve high-quality economic and social development.

Keywords: digital government; government governance;   implementation path

1. Introduction

The rise and rapid development of big data has had a significant impact on many fields such as my country's society, politics, and economy, and it has also pointed out the direction for the government's governance system and governance capacity. The Fourth Plenary Session of the 19th Central Committee of the Communist Party of China proposed to use big data technology to improve the government governance system, and the 2021 government work report proposed to accelerate digital development and improve the level of digital government construction. It can be seen that the national level has put forward higher requirements for government data governance in the context of the big data era. Local governments in my country should place governance modernization in the context of the era of big data, deeply analyze the opportunities and challenges they face, and look for a new path for the implementation of government data governance based on the shortcomings of current government data governance, and strive to build a digital government.

2. The concept of government data governance

At present, the academic community has not reached a consensus on the concept and connotation of government data governance. Through the inductive analysis of the existing literature, it is found that scholars mostly conduct research from three perspectives: macro, meso, and micro [1].

Definition Perspective	Representative Point of View
Macro view	As the main body of governance, the government is responsible for data governance at the national strategic level of industry, economy and even the entire society.
Meso view	The government's governance of data resources generated in the processing of social and public affairs, involving issues such as government data governance systems, data resource utilization and sharing, etc.
Micro view	The government's governance of the data resources generated in the administrative management process is mainly the governance of the data stored in the information system.

Table I. The concept of government data governan

Based on the sorting out of existing academic viewpoints, this paper believes that government data governance refers to the systematic and comprehensive sorting, distribution and analysis of social data by government agencies in collaboration with other governance entities, making scientific and reasonable decisions, and effectively safeguarding the interests of the masses. In recent years, many domestic scholars have improved government data governance capabilities from different research perspectives and fields, and maximized the positive role of big data governance at the government level.

3. The positive impact of big data on the government governance system

3.1 Improve the Scientific Nature of   Government Decision-making

Government decision-making is an important part of the communication and interaction between the government and the social masses. As the main body of decision-making, the government will incorporate the interests of the masses into the decision-making system and then transform it into policy output [2]. It can be said that the level of government decision-making is related to the effectiveness of government governance. The collection and processing of information and data is the basis for policy decision-making.   Therefore, the rapid development of big data technology has brought a positive impetus to government decision-making and provided technical support for government decision-making. On the one hand, it can form a comprehensive and scientific understanding of decision-making objects. On the other hand, it can improve the efficiency of government decision-making. Under the background of accelerating the construction of digital government, governments at all levels have gradually formed an analysis and decision-making model based on big data technology, forming a model of big data collection, cloud computing analysis, and online and offline two-way information feedback, and constantly promoting the decision-making model from "experience-based" Shift to "scientific".

3.2 Promoting the Mrecision of Public Services

In the context of digital government construction, governments at all levels use big data to continuously improve service levels, oriented to meet the needs of the public, and to improve the level of precision in public services. The first is to use big data technology to optimize the administrative examination and approval procedures, so as to achieve "more data travel, less errands for the masses", effectively shorten the work time and streamline the work process, which not only improves the efficiency of government department registration and administrative approval, but also reduces the time and labor costs [3]. Second, with the continuous improvement of people's living standards, the demand for public services and products is also higher. The rise of big data has provided the conditions to meet the diverse needs of society, and the "Internet+ government services" model has gradually become popular, using government affairs websites, APPs, small programs, official accounts, etc. to provide convenient services for the masses, and cover all aspects

of public health, food safety, production and operation, and effectively promote the transformation of government services from "simple" to "diversified".

3.3 Promote the Openness of Government Information

The rise of big data has broken the phenomenon of information barriers between government departments, between the government and the public, and between the government and the market, enabling the real circulation of data and information, and effectively promoting the opening and sharing of data. First, the government can use big data, cloud computing and other technologies to quickly collect data information and establish a database, formulate data-related norms and standards, set data access permissions, integrate resources of various departments, and improve data sharing efficiency. Second, big data makes government administrative processes more open and transparent, and the public can effectively supervise the behavior of government agencies and public officials through big data, prompting government departments to strengthen public service awareness in ideology and action, comprehensively promote the disclosure of government information.

4. Challenges facing government data governance

As a strategic resource, big data brings both development opportunities and new challenges to the government governance system. Based on the specific practice of the existing governance system of local governments, the article analyzes and sorts out the challenges faced by government data governance mainly in the following three aspects: internal management, external environment and data itself [4].

4.1 Internal Management

First, the application of data thinking and the transformation of data assets are related to the level of government data governance. In the context of digital government construction, some government agencies have insufficient awareness of big data, lack a systematic understanding of data value and security risks, and worry that shared data will be misinterpreted, leaked, or increase workload, and data governance thinking has not changed. As a result, data information cannot be effectively developed and utilized.

Second, government data governance is in urgent need of high-quality big data talent teams, coupled with the existence of confusion in the setting of data roles, the lack of coordination between the government in collecting and processing data, resulting in the government's inability to accurately locate the needs of the masses and provide accurate public services.

Third, at present, government data still faces integration obstacles in the process of in-depth integration. There are overlaps and gaps in the business scope between departments, and information barriers still exist, resulting in the inability of digital government construction to be deeply integrated with reforms in other fields. In addition, there is the dilemma of data sharing in the vertical management system. It is necessary to apply for data sharing step by step on demand, the approval procedures are cumbersome, the data sharing cycle is long, and the efficiency is low.

4.2 External Environment

The depth and breadth of the participation of various departments in the development and utilization of government data is essentially a reflection of the balance of data interests between the government and different social entities. Attracting the attention and participation of different subjects in government data governance activities and expressing their demands for data resources is an important part of government data governance [5]. Due to the large differences in information acquisition and feedback capabilities among people in different regions, education levels, and age groups, the gaps in the ability to obtain data and information in areas where big data technology has not been popularized and the elderly and vulnerable groups have gradually increased, and the

phenomenon of digital divide has continued to increase, government data governance activities are also difficult to fully promote. Therefore, government departments need to build an open, fair and convenient data environment for multiple governance subjects, use policy means to encourage value-added utilization behaviors of different groups, and create public well-being in an inclusive, trustworthy and sustainable way.

4.3 The Data Itself

First, the level of data quality is an important guarantee for government data governance, and data quality has always been a difficult problem faced by government data governance. First of all, in terms of top-level design, the "Outline of Action for Promoting the Development of Big Data" issued by the State Council only proposes data sharing and openness, but does not specify which data can be shared. Governments at all levels have differences in standards for data collection, storage, and processing, making data difficult to share, flow, and integrate. In addition, some governments believe that the larger the amount of data, the more it can meet the standards of data governance, and they do not perform operations such as "cleaning, deduplication, and classification" on the data, resulting in frequent data fragmentation, data redundancy, invalid data and other problems.

Second, data sharing has two sides. With the expansion of the application of big data in the field of government governance, the corresponding issues of data privacy security and data authority are gradually exposed [6]. The traditional government governance system is relatively closed, and the risk of data privacy and security is small. Today, there are many channels for data and information dissemination and the speed of dissemination is fast. Once data is leaked or maliciously misappropriated, it will bring uncontrollable social risks. For example, some APPs maliciously collect users' online shopping, online learning and other data, and use illegal permissions to read personal privacy information when users have weak security awareness. When the government makes public decisions and provides public services, it also involves a large amount of private data of citizens. How to ensure that the government and related data platforms do not abuse or disclose citizens' privacy is also a major problem in government data governance.

5. Paths and suggestions for building a government governance system under the background of big data

5.1 Transforming Data Governance Philosophy

In the context of digital government construction, the use of big data to promote the government governance system must transform the concept of data governance, and guide the construction of the government governance system with the thinking of advancing with the times. First, the government should strengthen the concept of openness and sharing of government data, strengthen the coordination of various departments, and break the narrow thinking of data. It should not only focus on the quantity of data, but also on the quality of data, the efficiency and effect of data utilization. Second, strengthen the concept of public service, insist on implementing the concept of serving the people into administrative affairs, continue to deepen the reform of "decentralization, management and service", and strive to build a data service-oriented government.

5.2 Innovative Compound Data Talent Training Model

The use of big data to promote the construction of digital government must play an important role in the support of data talents. If government data governance is to keep pace with the times, it is necessary to excavate, cultivate and use a large number of compound talents who understand both professional knowledge and management knowledge. The first is to actively introduce digital professional talents, openly recruit data talents with strong technical ability and good coordination ability for the society including universities, scientific research institutions, and enterprises, and

expand and strengthen the talent team of big data governance of governments at all levels [7]. The second is to increase the training of data talents, actively provide professional trainings related to data science, cloud computing, Internet of Things, etc., focus on the actual needs of the development of various regions, support industry-university-research institutes to jointly build training bases, and strengthen digitalization through school-enterprise cooperation. Efficient connection between talents and market demand. The third is to encourage public administration incumbents with diverse forms, rich content and a wide audience to carry out digital skills training, and use a combination of online and offline methods, including data mining, data security and other courses, to continuously improve the capabilities of digital government practitioners. The fourth is to advocate the establishment of a resource bank of big data governance experts in various regions, give full play to the role of third-party personnel for political advice, give full play to the active role of social resources such as think tanks in government big data governance, and provide solid talent support for promoting the modernization of government governance .

5.3 Optimize Government Data Governance Structure

From the perspective of the data governance structure system, the traditional governance structure is relatively closed, and there are problems such as overlapping departmental functions, decentralized management, and low work efficiency, which are not conducive to the establishment of a government data governance system. First, optimize the organizational settings of the government data governance system, such as establishing a government data governance committee, responsible for data sharing, resource co-construction, overall coordination, and enhancing the strategic height of digital government departments. Second, optimize the management functions of the government data governance system, establish a clear data management system, reasonably divide the powers and responsibilities of various departments to upload, collect, and share data, and strengthen the coordination of digital government management between departments. At the same time, break through the barriers of departments, levels and regions to realize the whole city, strengthen the data exchange mechanism, simplify the approval process in the vertical system, and ensure the timeliness and accuracy of data.

5.4 Promote Public Participation in Government Data Governance

With the continuous development of big data technology and the continuous increase of government investment, on the surface, my country's government data governance is becoming more and more abundant in terms of supply, and the ways of public services are more diversified, but in-depth research will find that social citizens often It is a passive recipient of public services, coupled with the existence of the digital divide, resulting in a low degree of citizen participation in government data governance. First of all, in the context of digital government construction, the concept of "citizen participation, government-civilian interaction" should be integrated into government data governance, and more social citizens and organizations should be involved in governance practices to create an open and democratic government governance system. Secondly, as a micro-organization that directly perceives public data needs and implements government data governance policies, the grassroots government should broaden the channels for citizens to participate in data governance, communicate with the public more, build a mechanism for effective interaction and mutual trust between the government, citizens and society, and open up public The "last mile" of service.

5.5 Improve Data Quality and Security Protection

First of all, when building a government data governance system, we should not only pay attention to the quantity of data, but also pay attention to the quality of data. The government should refine the types, scope, and standards of data sharing through scientific legislation, strengthen the education and training of data management grassroots personnel, and continuously track the entire process of data collection, processing, integration, sharing, and exchange, and eliminate debris in a

timely manner. Invalid data with high volume and low capacity, and establish a complete data quality assurance system. Secondly, the government should solve the conflict between open data sharing and personal privacy protection, attach importance to data security legislation, establish data information supervision and data circulation risk warning mechanisms, and create a good environment for the government to improve its data governance capabilities. In addition, in the process of building a government data governance system, we should pay attention to the improvement of key data security technologies such as data access and data encryption, and strengthen exchanges and cooperation with technical support units such as scientific research institutes, universities, and enterprises, so as to provide strong support for the construction of digital government [8].

In short, combine cutting-edge government data governance theories with specific practical activities to tap the intrinsic value of data, break down government barriers, optimize the data governance environment, improve public service levels, strengthen public decision-making participation, and achieve government, society, and public participation. It is the implementation path of the government's big data governance system under the background of digital government construction.

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