A Study on Changes in the Modes of Supply of Public Service under the Background of Big Data

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Abstract—**With the fast development of information technology, the era of big data has come. It is put forward in the Third Plenary Session of the 18th Central Committee of the Communist Party that we will strive for the modernization of the governance system and ability of the nation. As one of the technical approaches of modernizing the government administration, big data can stimulate the innovation in the revolution of governance and modes of service.**

This study probes into the new intonation of the modes of the supply of public service under the background of big data from the angle of government administration. Based on the practical investigation of some government departments, this paper summarizes three aspects of the modes of the supply of public service under the background of big data: Change in structure: from monocentric system to multicentric system; Change in process: from plan-domination to whole-process administration; Change in outcome: from one-aspect evaluation to comprehensive evaluation.

Index Terms—**Big data, modes of supply, public service, public administration.**

I. INTRODUCTION

With the rapid development of information technology, the era of big data has arrived. The Third Plenary Session of the 18th Central Committee of the Communist Party proposed to comprehensively "to promote national governance systems and governance modernization." Big data governance as a path to modern technology, management revolution has spawned innovation and service model effect is bound to transform government functions and institutional reforms to bring new opportunities. Open data, public information, the establishment of genuine freedom and equality of open society are the directions of national governance. The core idea [1] is to use large-scale data surge to change the status quo. [2] As the provider of public services, the government sector is also occupied by a large number of data resources, should establish the concept of big data, and the means and methods of introducing government big data management and public services, to change the traditional command-oriented public management and supply-oriented public service model, open it this guide, a new model of public management and service-oriented demand for the public to provide more high quality, efficient and personalized public services.

II. THE CONNOTATION OF PUBLIC SERVICE PROVISION MODEL

From the point of view of governance, supply mode of public services, the government is to meet the public needs of a particular stage of social development and the design and selection of management tools. Public Service Supply Mode consists of three elements: structure, process and result. With the era of big data technology becoming mature, the model of public service has been quietly changed. In the big data context, the Government that provides the public with the public service has the following features:

First, the demand for public services fully awares that the government in the provision of public services in the process is more targeted, more efficiently operated. Based on comprehensive and real-time big data, the government not only timely and comprehensively grasp the public behavior and information needed to predict the public the kind of public service, and provide the public with more intelligent and convenient public service, as well as citizens demand for multi-level and multi-dimensional segments, which will determine the perception of the surface into the specific needs of the details, provided by the government to make public services more personalized.

Second, with the rapid response, the government can effectively enhance the ability of emergency management and public satisfaction with public services. Based on the real-time data collection and analysis, the government can be able to advance into the traditional post-response prediction and things in response to threats to personal safety and property losses and to minimize public inconvenience in the first time on the sudden public events and demands of the people treated at the same time. Especially when dealing with government mass emergencies, such as the ability to crawl through vast amounts of data to be implemented to grasp public opinion, while improving accuracy of judgment, it is possible to resolve the crisis in public opinion in the signs.

Third, public participation, the formation - the pattern of social governance "government people" are building a co-governance. Government, through the Internet for real-time data monitoring and control of the population through the public network to reflect the problems and timely feedback process, to fully mobilize the enthusiasm of citizen participation. With the power of the people, not only for the government to provide public services and timely feedback supervision effect, and can reduce the amount of administrative costs, which was devoted to public service in more urgent need. By - social governance "government people" to participate in the public utility services to maximize [3].

III. CHANGE OF PUBLIC SERVICE SUPPLY MODE

Government of "public service" change is inevitable choice of China's market-oriented reforms. With further market-oriented reforms, the Chinese government gradually to the "service-oriented" changes from "managed." The arrival of the era of big data, the government provides a strong complement to existing public services, not only to promote public services to personalized, fine transition, while promoting the closure of inefficient public services from the co-efficient savings-type transformation. The root cause of a series of public service transformation that public service provision model has changed.

A. Changes in the Structure: A Single-Center System to a Multi-Center

From the perspective of the main structure, a problem observed by the public service who supplied the actual relationship is to explore a subject or multiple subjects and between. In essence, public service supply structure changes, is the relationship between the changes of government as the representative body of the various elements, in the final analysis is the relationship between changes of government and society. In Ostrom, as the representative of the school system analysis will be only one main supply of public goods, and the supply mode is called "single-site system" generally, which refers to only supply a government body. Institutional Analysis of multiple schools also supply the main mode of public goods called "polycentric system" is a cooperation and competition between them. Organization for Economic Cooperation and Development put the government only supplied a body model called "core governance", a plurality of main supply mode called "decentralized governance."

Before the arrival of the era of big data, the government has been "strong government" popping up, and almost all of the public goods and services are provided by a Government, a virtual monopoly on the supply of public goods, the formation of a so-called "single site" in the supply structure. Governance of this period is the greater part of the original intent of the concept of "governance", the domination and control. However, it is provided by means of a unilateral authoritative government public service, from the teleological seemingly unassailable, but because of birth defects Bureaucracy, so the effectiveness of the provision of public services is increasingly low. With the further development of the market economy, democracy and legal system to further improve, people on the quality and efficiency of public services have higher expectations. "Large" single-site public service provision model has been unable to meet the needs of contemporary society for public service provision.

The arrival of the era of big data, an effective solution to the supply of public services structure existing problems. Through data link, forming a multi-center government and non-governmental forces pattern commonly supply public goods. Public service supply structure from a single center to multi-center transition, not only reflects the governance of "governance" modern meaning, namely multiple subjects involved in; at the same time, also make up the government "bureaucracy" evils from the structure . Involved in the supply of public services through multiple subjects, the demand for public services in the form of data and timely feedback to the relevant authorities, not only to avoid "blind spot service" exists, to ensure "full coverage" of public services; at the same time, also can improve citizens for participation in public service delivery, extensive mobilization of social resources, optimize the allocation of public services structure.

B. Officer Rank System

From the perspective of understanding of the process, to discuss how the problem is supply, supply of public services is a dynamic process consisting of many aspects of composition, including the development of much of what the supply and supply plans, financing, funding, allocation of funds in all aspects to determine supply methods, organization of human resources, the use of the material means of production, and outputs specific maintenance and protection or monitoring use and so on. Government public service provision process, from the traditional to the main program to manage the whole process is now gradually changing.

Before the arrival of the era of big data, the process of government in the supply of public services, the demand for public services is often based on the last phase of the report to determine the type and quantity of the next phase of public services. This is one of a major flaw is that the supply of public services Government's plan to develop the actual changes never catch up with the demand for public services. Public services to meet the needs of society lag, often caused public discontent, but this is not the public sector deliberately, but it is limited by objective conditions. Public service demand information collected is not timely, comprehensive, and the demand from the generation to generation plan long period, resulting in the process of supplying public services become public service constraints should play utility.

Along with the Internet of Things, cloud computing, big data is widely representative of the new generation of information technology, the supply of new public service model becomes "smart city" of the main features. Through sensor technology for the detection of various aspects of urban management and comprehensive perception, data form reflect the operating status of each urban public goods and services, the basic demands of the people real-time feedback, timely processing of public goods and services produced in the course of running contradictions and problems. Relying on data accuracy and effectiveness of government departments in the process of public service provision, the plan for the development of public services, financing, investment and protection or repair and inspection of the entire process, and can be in the form of data feedback, truly real-time, the whole process of management of public service provision.

C. Results of Changes: Unilateral Comprehensive Evaluation to Evaluation

From the outcome of the public service supply point of understanding, we need to discuss is the final evaluation of public goods, including output - input costs further accounting, distribution of the final product, on consumer preference satisfaction (to be understood as the realization of the extent of public interest) and the like. This is related to the public sector, which can completely and accurately perform its functions related to the national economic and social

development and well-being of every citizen [4].

Since the current evaluation of the supply of public services is still in its infancy, insufficient institutionalization of various public services of evaluation, not standardized; unscientific assessment system, especially a lot of local governments in the evaluation of public services, will be one-sided public goods as the number of indicators to assess performance of public services; assessment body single long this "top-down", enclosed assessment model has been unable to meet the current requirements and the public demand for public services. It is this public not to serve the main public service orientation, resulting in low efficiency of public services. The reason it is not sound public service evaluation system caused.

Establish a sound and effective public service evaluation system, not only to the supply of public services evaluation theory innovation, and should draw big data and other high-tech means, for the supply of public services in the process of planning, budgeting, management process and citizen participation combined. Based on the data and other means of transformation in public service, provision model evaluation methods reflect the following three new features: First, evaluate the contents of the transition from economic efficiency to effectiveness, quality. Evaluation of public service provision, if it continues to economy and efficiency as an evaluation criterion, is bound to be sacrificing the quality of public services to pursue cost savings criticism, while the use of big data tools, the ability to evaluate the focus to quality of public service provision and public the effectiveness of services, maximize public satisfaction; second is to evaluate the main extended from public organizations to the public. Initial evaluation of the supply of public services, mainly as a review of the higher authorities to control the lower sector of tools, evaluation results too subjective evaluation of the influence of the body, ignoring the supply of public services serve the community in mind. With the advent of the era of big data, evaluation of the main supply of public services extended to the public by a public organization, improve public satisfaction at the same time, a more complete evaluation system for the supply of public services; Third, the evaluation criteria to diversify from a single shift . Since the assessment of traditional public service values, a single efficiency measurement efficiency orientation cannot balance the conflict between efficiency and other values, and therefore, with the technical means and other large data subject and the object of public services will be supplied to the organic combination of public value diversity and diversified services targeted to promote the diversification of public service provision model evaluation criteria [5].

IV. CONCLUSION

It is the direction of future national governance to open data, information and building a real opening society of freedom and equality. The core idea of big data is to change the status quo by size increasing. As the provider of the public service and the owner of the big data resource, the government should have the big data outlook, and apply its methods and approaches in to the government administration and public service. In this way, it can changes the traditional public

administration modes of order-orientation and the public service modes of supply-orientation, create the new public administration and service modes of human-orientation and demand-orientation, and provide better, more efficient, more personalized services to the public.

Government financing and financial investment in the state sector is the development of related industries quit, the only way to improve the market economy, which is the boundary behavior of the government to provide public goods and quasi-public goods target return. This will also increase the supply of intangible public goods, increase the proportion of fiscal expenditure metastatic, optimize the structure of fiscal expenditure currently offers the possibility.

Government involvement in resource allocation condition (public goods or quasi-public goods areas) is that the government cannot force the private sector deprived of the right to participate in public goods or quasi-public goods market supply. So, whether state-owned economy is not efficient to give private capital into the industry with equal qualifications, in order to compare the efficiency of both, and improve efficiency in the competition, in order to make the denunciation of the future financial investment does not always produce supply too much oscillation, so that the financial resources to focus on the provision of public goods.

Privatization of Public Utilities is a market mechanism in the expansion of the public sector, which would greatly reduce the scope of government activity and resource allocation activities in the field of activity, government investment in favor of suppressing the scale is too large, too wide areas of investment income generated by decreasing law.

Because it is a political decision-making process on the supply of public goods nature, the optimization of public goods supply mechanism is a political democratization. But the democratization of political system should be designed to the market situation of economic development as the foundation, focusing on market forces play an important role in optimizing the supply of public goods mechanisms.

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