Research on the Reform of Public Management under the Background of Big Data

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Abstract: Big data has the characteristics of large amount, diversified data, low value density and fast speed. The unique and new thinking provided by big data has laid the foundation for learning innovation, scientific and technological innovation and management innovation. The combination of big data science and management science results in big data management. Big data has functions of unique collection, storage, analysis, value mining and prediction, which has brought great revolution to public management. This work analyzed the important function of big data in promoting public management and researched on the reform of public management.

1. Introduction

Public management is the emissary of public power, which determines the process of allocating public resources in the public domain. The allocation of public resources by public power is not arbitrary [1]. The scientific allocation of public resources must be based on a detailed understanding of the public domain, otherwise the allocation of public resources will be distorted and ultimately lead to the waste and invalid allocation of public resources. Traditional public management is based on the repeated comparison of historical experience, so-called "taking history as a mirror can know up and down" [2]. Although historical vertical comparisons can still gain experience, it is not the only way but even an old methodology.

2. The important function of big data in promoting the reform of public management

2.1 The function of data collection

Nowadays, the data is growing in the three-dimensional explosive way, that is, the same kind of data is growing rapidly, the data growth rate is accelerating, the new data sources and new data types are increasing. In this case, the traditional data collection method is powerless, however, the big data technology supported by cloud platform can make massive, fast and diverse data realize software and intelligence [3]. Therefore, big data can provide diversified and pluralistic information for public management, so that it can present a more real objective reality. Big data provides enough information for public opinion debates and consensus. The important link of public management is consensus reached by public through participation and consultation. The premise of participation and consultation is that the public can know information fully, since the asymmetric consultation is unequal consultation, and this kind of consultation is difficult to reach consensus [4]. In this case, big data can play the role of providing diversified and pluralistic information. As a result, big data and cloud computing have achieved a thorough paradigm for most decisions.

2.2 The function of data management

Data management of big data is based on the intelligent management of cloud platform, and it includes not only the management of big data, but also the management of big data results. From the aspect of public management, the management of big data itself is reflected in the fact that the government can have virtual technology for virtualizing cloud hardware, programming technology for all kinds of data and cloud service platform technology for big data to use service. The management function of big data using results is reflected in the national legislative ability to adapt

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to the big data using in big data era, that is, to strengthen the management of the big data using results through effective legislation [5].

2.3 The function of analysis

Data is only a set of lifeless data without analysis, and only the data analyzed by technology can be "vocal" and can be used for prediction and public decision-making. Without big data thought, it is difficult to obtain analytical function of big data. Analytical function of big data is not only to analyze big data than has already been "vocal", but also to reorganize all kinds of data that has already existed and is about to be excavated. Since the core of big data is prediction, therefore, after combining the traditional analysis method, big data should first use all or more data to establish the prediction model, second combine a variety of analysis models and techniques to improve the results, third create a closed-loop environment in which new knowledge can be applied to the production model, fourth construct a real-time prediction model, and finally focus on the application of prediction model technology [6]. It is the core content to reorganize the data in the process of thinking so as to excavate the new value of the data for big data analytical function.

2.4 The function of data mining and data reconstitution

In the process of public management, it always pays attention to important data and structural data that can be logically expressed by two-dimensional table structure to make public decision-making, thus neglecting abundant so-called unimportant and non-structural data. However, these data objectively has an important impact on public decision-making. Isolated data is worthless. Non-structural data cannot be found to be valuable since it is isolated, but big data technology can make full use of non-structural data through mining and restructuring functions [17]. In particular, the algorithm is used to construct the correlation of the data and mine the value of the data. The scattered data is integrated and processed through cloud technology on the cloud platform to become internally relevant big data, which is finally applied to the process of public management.

3. Big Data Promotes the Great Reform of the Public Management Connotation

3.1 Promoting the management structure of public management to change from closed to open

The traditional public management is restricted by the public power, and the operation of the public power is objectively closed, such as the confidentiality and national security, and the participation of social organizations and market organizations is relatively low. This kind of closeness determines the phenomenon of power rent-seeking in the process of public resource allocation. Even if there is no rent-seeking problem, the public power will fall into the "Tacitus trap" due to social mistrust caused by its closeness [8]. On the contrary, big data is completely different. Big data runs on the Internet and cloud platforms, and the public management in big data era is naturally open. Market groups, social organizations and even individual people can exist in the framework of public management. In this process, the general public has become a member of the management framework, and managers and demanders transform instantaneously to achieve national participation in management, but the edge of the management subject and object becomes blurred. This kind of openness shows that the original single governance model changes to the pluralistic co-governance model.

3.2 Making public management change from hierarchical management of bureaucracy to flattening structure

Hierarchical management of bureaucracy is a pyramidal governance structure, which results in the inverse pyramid structure of resource allocation, and the more public resources are obtained by the departments closer to the tip of the pyramid tower. Such public management is ultimately unsustainable, and most of the discontent in society comes from it. The distribution of public resources emphasizes the fairness on the basis of procedure, while the hierarchical management of bureaucracy lacks fairness although it has procedures [9]. Therefore, the hierarchy within the

bureaucracy plays a decisive role in the allocation of public resources. However, big data is completely different. Big data beat the rigid structure of horizontal division of labor and cooperation with the vertical hierarchical system. Data sharing and joint decision-making within the government will ultimately eliminate the decisive role of bureaucracy in the allocation of public resources, and at the same time eliminate the gap between departments in terms of public resources.

3.3 Further clarifying the boundary between the public management and political management

Traditional public management is the process more based on the security of political ideology, and involves all collective actions and personal rights conservation related to economic interests into the government antagonism and even the political demands of subverting the government, so the rigid stability becomes the normal state of public management. The result is often far from the actual goal, which further aggravates social contradiction [10]. In fact, most collective action and safeguarding action are aimed at economic interests and have nothing to do with political demands. The monitoring of big data will provide public managers with all of these situations clearly. Person-to-person monitoring used to be adopted, but people often make subjective judgments on everything, and even deliberately conceal objective facts for certain purposes. They will report the social actions for economic demands to social actions for political demands, and the result is obvious. Big data is different, since it adopts technical monitoring and technical analysis, including the monitoring of human behavior.

3.4 Promoting the public management to change from strengthening the management of people to the management of data

Traditional public management serves the social order, so it focuses on standardizing human behavior and making it orderly. In this management framework, people are the goal of public management but not the object of management services. However, in the public management of big data, one is data management, since data is the most critical object of management, and the safe operation of data on the cloud platform is a prerequisite for public management under the condition of big data. Therefore, the management of data is the priority. Only by effectively managing the data can effective public management be achieved. In other words, the management of data is the most important part of public management. The other is to use data to serve the public. Public management of big data changes from direct management to direct service for people, which is a fundamental change in public management.

3.5 Changing from passive response to predictive decision of public management decision-making

Traditional public management is always a passive public decision-making, that is, only when a certain phenomenon appears, public decision-making will be made for the purpose of strengthening or preventing the recurrence of the phenomenon. Such a decision is tantamount to buying a new public decision at the price previously paid. Under the technical background of big data, using big data to make predictive decision can avoid the phenomenon of buying future public decision with historical cost. Big data can realize the data support of "full sample" and help public management make predictive optimization decisions since big data not only builds large scale and various types of data, but also has the fast computing power of cloud computing.

4. Summary

Big data objectively provides a new thinking way and technology for public management to deal with the operation of power within public power, the allocation of public resources by public power, the protection of social security and the response to social problems, which is also the biggest difference between public management and traditional public management in big data era. Under the background of big data, the public management has changed from closed management structure to open management structure, from hierarchical management of bureaucracy to flattening structure,

from the structure of vague boundary to the clear boundary between public management and political management, from the focus on human management to the management of data and from passive public decision-making response to active optimization decision-making based on big data. However, change also means risk, and big data will also pose a new challenge to public management.

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