

## Smart Public Decision-Making Model In The Era Of Big Data

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**Abstract** We are now moving toward a new era ——Big Data Era,which is completely different from the past. As a important strategic resource in the big data era ,the big data is causing huge change not only in the economic sphere but also in the whole society,including the social governance. In the era of big data The mode of policy making should convert form the original small-scale digital management which relies on the intuition and past experience to the Smart Public Decision Making which based on the analysis of big data ,fully making use of the big data technology and tremendous amount of information behind the data , so as to enhance the scientificity and effectiveness of policy making ,realizing the modernization and innovation of government governance. On the basis of big data technology this paper expatiates the meaning and characteristics of intelligent decision making, discusses the operation mode of intelligent decision making is discussed. Furthermore in order to further develop the power of the public, proposes to apply the crowdsourcing into the smart decision-making mode so as to improve the scientific 、 democracy and effectiveness of public decision-making.

**Key Words:** big data; smart; smart public decision—making; crowdsourcing

### 1 Introductions

Based on the 30 million registered users as well as more than 30 million behaviors generated form the internet every day,Netflix——the largest paid

subscription video site in the North American reached a conclusion that a work is bound to fire if it could organically combine the three following elements :Spacey ,Finch and BBC produced. This conclusion impelled Netflix to invest in the production team of “House of Card”. As a result ,this TV drama was extremely popular and brought impressive profits to Netflix(Chen Tan,2015).Apparently it is a critical step for effective decision-making that mining and utilizing the bid data. We are now moving toward a new era ——Big Data Era,which is completely different from the past. As a important strategic resource in the big data era ,the big data is causing huge change not only in the economic sphere but also in the whole society,including the social governance . Massive data are generating because of the rapid popularization of the internet application and the continuous progression of big data technology. As we are gradually stepping into the era of big data, resources are constantly being digitized. If we want to formulate effective policies,we should thoroughly master the data in real-time and quickly convert them into information capital and data resources. The mode of policy making should convert form the original small-scale digital management which relies on the intuition and past experience to the Smart Public Decision Making which based on the analysis of big data ,fully making use of the big data technology and tremendous amount of information behind the data , so as to enhance the scientificity and effectiveness of policy making ,realizing the modernization and innovation of government governance.

## **2 the Smart Public Decision—making based on the big data**

Accompanying the external environment increasingly getting volatile and the pluralistic complicated social needs, rather than problems of a single dimension,the government now more is facing social and economic

problems across multiple boundaries, which makes government decision-making facing great risk and challenge. Especially with the advent of the era of big data, social structure has been getting gradually flat and social affairs been more difficult, it's getting harder for government to make public decision, only by the traditional decision-making model has been unable to effectively meet the challenges brought about by the era of big data. The Government decision-making should conform to the trend of big data, make full use of big data, cloud computing, networking and other new generation of information technology, intelligent public decision-making model, achieve intelligent decision-making

The smart public decision—making is a kind of modernization public decision—making model. It is based on the big data and supported by the new generation of information data analysis processing method. By contracting with the past, now and the future through the massive data, analyzing the relationships between data and environmental, the smart public decision—making could make decision by diversified subjects and continuously provide accurate, personalized public service (Hu Shuigen, 2015).

It's just not a kind of technical means in the public decision-making process simple, but service concept, innovation management concept in the modern government's decision-making process of expression and through. Compared to traditional public decision-making, wisdom of public decision-making in the "wisdom" is mainly embodied in the following three aspects:

### **2.1 technical wisdom**

the big data technique is generated along with the third wave of

information technology. In recent years, with the rapid development of internet/cloud computing/MONET and networking, A large amount of data are produced in every minute by the omnipresent mobile terminal/RFID、wireless sensor ,hundreds of millions of internet users behaviors are interacting with each others ,the processed data increase in large quantity and high rate. At the same time ,the request for data processing ——real - time and validity ,which is the traditional DP can not cope with, is continuously improving. In this case, a new technology, — big data technology generated at the historic moment. Big data technology is a new kind of intelligent analysis technology, it changes the way of data acquisition and transmission , through data mining, distribution processing and other means to analyze the problem of correlation, grasp data from the overall , intelligent processing and analyzing problems. Now the big data technology has been actively applied in various fields such as emergency management/urban construction and has achieved remarkable results. It is the scientific application of the emerging big data technique that has become an important means for being forefront of the times in the big data era.

In the traditional decision-making mode, the main content of data flow are data acquisition、 transmission、 processing and publishing, analyzing the data by changelessly collect the data in a basket which is lacking of the data analysis of correlation. Ulteriorly ,there haven't an uniformity standard between data and data , data in different departments are relatively independent,lacking of shared conditions. All these things are not conducive to the smooth flow of data between various departments. Relying on big

data technology, smart public decision—making realizes optimization unified management of big data and further improve the original data flow ,from acquisition、 transmission、 processing and publishing launching into data acquisition, transmission, analysis and application. It is not just a change of name but a change of data obtained range and data processing flow, which means we could continuously analyze data on a large scale in real—time by using big data. On the other hand, the smart policy—making using the distributed file system (GFS, distributed database BigTable, batch processing technology Mappreduce and open-source implementation platform of the new cloud computing technology (Hu Shuigen,2015) , Intelligently analyzes the extensive connections between data and data with environment ,finds the hidden correlation behind data and provides strong support for the public decision-making.

## **2.2 supply wisdom**

It is deemed that supply wisdom refer to the smart decision—making based on user demand, so accurately grasps the social needs through big data technique that to rational allocate public resources as far as possible to realize the individuation and intelligence to make public policy.

Because of the rapid development of society、the constant change of life philosophy ,the public social needs are getting increasingly diversified, forming a multi-level demand structure. Now our government is actively promoting the construction of service-oriented government,which deem providing social services based on the public demand as it' s core. Obviously, public policy, one of the government governance initiatives, are demand

oriented. However, in the actual policy implementation process, the actual effect and the public's expectations of different. One of the main reason for the existence of the gap is that the public policy is no real pointing to public demand.

The smart decision-making using big data technology through various channels like the new media and information platform extensively collects individual opinions on public affairs. At the same time through the data mining analyzes the public enjoyment and preference public service, preference, objectively evaluates public service, so that the government could better grasp the needs of the public, provide support for making decision in complex conditions, improve the Scientific and democratic intention of decision making(Gao Xiaoping,2015)。

### **2.3 development wisdom**

Development wisdom is actually the use of concept of sustainable development in the field of public policy. A scientific public policy must be viable, with foresight. In the essentially, the public policy is a kind of social contract between government and Related social interest subjects. It will directly affect people's behavior choice and production work. A policy,lacking of foresight and changing frequently,will further exacerbate the risk of social management, do harm to the society.

The domestic scholar Guo Jianjin(2015)pointed out that as a new governance resource, big data has the characteristics of low density, large scale, high capacity, high speed.These characteristics especially low density determined that big data gives more attention to correlation, considering problems from a macro point of view. The smart public decision—making based big data technology could share the information and resource

originally scattered in various departments, during the whole process(In advance, matter and afterwards ). On the one hand, the sharing of information and resources let the decision makers can grasp the public affairs on the whole, to see the problems that the traditional decision mode can not see, subsuming the whole process of policy into the decision-making process, so as to formulate a viable policy. On the other hand, to strengthen the data sharing between departments and the level of communication, so that public decision-making mode can be wisdom To form up and down China Unicom, the operation mechanism of the business linkage. Based on this operation mechanism can effectively avoid the risk of the second half of the public in the second half of the encounter, reduce losses, improve decision-making efficiency and scientific level.

### **3 the construct thinking of smart public decision—making mode**

#### **3.1 Standardize the integration of existing data, achieve data sharing**

Big data as a new strategic resource has broad prospects in making policy and promoting the modernization of national governance. In order to better use big data so that it serves the government governance, the followings need to be done:

**3.1.1** The government led, the coordination of various departments, integrate and standardize the big data big data of "big" in its scope, variety, can show the attributes and rules of small data era of unprecedented magnitude of individual "(Guo Jianjing、 Guo Jianping,2015). The decision makers understand the problem is more comprehensive and accurate by big data mining, is conducive to the improvement of public decision-making accuracy. But at the same time it is also because of big data to big data analysis more difficult. A different category, the nature of the data gathering

together, not in the same way place, which will slow down the speed of data processing. On the other hand the technical route of data acquisition and test system with inconsistent data format standards are not unified, lack of basic data sharing objective (Ling Ming,2015), is not conducive to correlation analysis. We need to lead the government for With, coordination departments, data standards, by big data technologies enable heterogeneous data can be transformed into available information, unified deployment planning of large data, give full play to the role of big data in the public decision-making process.

**3.1.2** the realization of data information in the smooth flow of decision-making, dynamic and open to the public display of public decision-making information. To solve the problem of public decision-making is a social and economic problem across borders, these problems will affect the interests of all parties in the process, the need for government related departments on connectivity, data information sharing the era of big data. On the other hand, compared with the traditional way of information transmission, low cost, high speed Internet information dissemination, wide range makes more and more people choose to obtain all kinds of information and services through the Internet, to express the demands and views of domestic scholars. Yu Shiyang pointed out that the government information and private information dissemination on the Internet in the actual formation of a competitive relationship in fact, the government is in the passive situation and on the whole. The main reasons for this reason is that government information is not timely, comprehensively to the old 100 Name publicly, making people have misunderstanding on the decision-making of the government, not satisfied with the government decision. So intelligent decision making is not only

government's own decision, is people's decision, the government should on the basis of information integration, dynamic sound public display of public decision-making related information, improve the degree of public satisfaction of public decision making and public policy democracy.

### **3.2 Coordinating the decision-making network, achieving the large linkage of the various departments and system**

An important aspect of the smart decision making in the era of big data is to deal with the relationship between horizontal and vertical cross sectoral levels, up and down connected, achieving a large linkage of each node of the decision network.

**3.2.1** The wisdom of the decision-making mode of public decision-making is multi governance. Across the boundaries of the government governance functions of various departments boundary gradually blurred, under the premise of clear main responsibility and public affairs to solve more and more dependent on cooperation between government departments, strengthen dialogue mechanism, coordinate the interests of all parties.

Easy to ignore the interests of other relevant departments on the one hand to make decision by the main responsible departments, resulting in decision-making downward blocked, is not conducive to the implementation of the decision-making. On the other hand, the lack of corresponding single subject decision-making constraints, easily lead to rent-seeking corruption of power. As the domestic scholar Hu Shui root said, the key decision intelligence decision-making is no longer common experience the traditional single authority but network multi community, learning process and discourse. Under the era of big data, through the wisdom of the decision network, can be scattered in various departments of the information

resources in the whole process of decision making can be shared and dynamic growth, so the decision-makers can be more comprehensive view of public issues, making effective decision balance the main interests .

**3.2.2 Smart decision—making mode** decision can actively respond to emergencies. Emergencies often occur suddenly, in a short period of time to the social public, causing huge losses, the government needs to make a prompt decision at the time of the incident, make quick decisions, to minimize the loss. The decision network and the various departments of the linkage information and make decision resources to different departments smoothly the flow in the organization, various departments actively cooperate with the coordination, this relationship is dynamic cooperation. This means that when there is a sudden, intelligent decision model to quickly focus on the professional field strength, breaking the boundaries of traditional organizations, the establishment of temporary organization, effectively solve the emergency events. At the same time. Use big data technology in the mobile terminal, wireless sensors in the era of intelligent decision making entirely through modern information technology in real time Perception, to prevent the event, to solve the matter, after the perfect.

### **3.3 Establish crowdsourcing platform, play the enthusiasm of ordinary people to participate in the smart decision-making**

The crowd-sourcing mode may gather various social forces which are interested in public affairs and thoughtful like non-profit organizations, private enterprises and individual citizens together through establishing the Internet platform, and then use their wisdom and strength to achieve the Effective formulation of public policy. We should establish the crowd-sourcing platform which takes the government as leading force and

classify and summarize the social affairs . As the contracting party, government proposes a specific policy item and then seeks the solution. Communities, non-profit organizations, enterprises and other social forces should decide whether to take the package according to their own abilities and interesting, and then propose appropriate solutions. The government should conduct cost-benefit assessment on corresponding solution, publish alternative solutions on the platform for public discussions and ratings at the same time, and then make the final decide who takes the package through combining different views and actual situation. Significance of network crowd-sourcing mode is to collect all forces and wisdom through the Internet platform and ensure that Stakeholders of public policy can participate in the content formulation, planning and supply of policy making. Consumers are no longer the passive side on crowd-sourcing platform; they may put forward their own demands, conduct real-time tracking, transform from passive to active and then become one object of policy making

The public policy crowdsourcing platform led by the government to unified establish should cover the following three aspects:

**3.3.1 Client window.** Based on the public demands as well as social reality obtained by information cloud, the government should clear the client task, release task in client window and waiting for the main package. Meanwhile, the government also needs to clear and publish the whole operation process of such crowd-sourcing platform and the remuneration of the final package party, and then attract more social forces to participate in the brain storm of home care and obtain the most reasonable solution

**3.3.2 Package window.** The package party can be enterprises, non-profit organizations and even individuals, they may access package with the identities of individuals and organizations, while in order to maintain the

safe and stable operation of the entire platform, they must be real-name registered. As a result, we should learn from the so-called network crowd-sourcing model proposed by Wang Qian(Wang Qian , 2014) that the government must establish an appropriate access system for package identity, develop “suitable and elastic” access conditions and protect the enthusiasm and sense of security of all the participants far as possible under the premise of traceable IP domain

**3.3.3 Discussion and feedback platform.** Client window and package window are mainly the platforms for communications between contracting body and package body, their contents are relatively independent and competitive. While the discussion and feedback platform fully reflects the cooperation concept of pluralistic cohabitation. Wherein, the package body needs to upload the solution which does not involve privacy organization, and then the public put forward their own ideas according to the alternatives for decision making. In addition, the final package party needs to publicize the specific implementation of the service it provides. Meanwhile, the public may also express their most direct experience here to achieve good online and offline communication. After the back office operations of crowd-sourcing platform, all valuable information formed on this platform need to be uploaded to the information cloud to constantly improve the big data platform of policy.

### Reference

- 1 Chen Tan( 2015 ), State Governance in Big Data Era, China Social Sciences Press:2-7.
- 2 Hu Shuigen, Shan Lidong, Xu Jingrui( 2015 ), Characteristics of Big-Data-Based Smart Public Decision Making , Journal of Zhejiang University (HUMANITIES AND SOCIAL

SCIENCES).

3Gao Xiaoping (2015) , With Big Data Technology Power to Seek National Governance

Reform and Innovation , China's administrative management ( 10 ): 10-14

4Guo Jianjing, Guo Jianping (2015) , Research on The Construction of National

Governance Capacity Under The Background of Big Data , China's administrative

management ( 6 ): 73-76.

5 Li Ming (2015) , Major Public Events Network Public Opinion Cloud Governance

Research , China's administrative management ( 7 ): 126-131.

6Wang Qian, Dai Jiabin(2014) , Generation, Construction and Utility of Network

Crowd-sourcing Model in Government Governance” , Journal of Public Management.