

Multi-Level Application of Public Management in Smart Cities Based on SOP Model

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Abstract: The development of smart cities in China has been nearly ten years, but its development is still limited to transportation, economy, government affairs and other fields, lacking a multi-ecological and multi-level coordinated management model. By expounding the connotation of multi-level and smart city, this paper constructs a smart city governance model based on SOP (subject-object-process), and expounds the interaction between them from the perspective of pairwise function. This paper studies the construction status and measures of public management platform of multi-level smart cities, aiming at improving the construction level of smart cities.

Keywords: SOP model; Smart city; public administration

1 Introduction

With the advancement of urbanization and smart city construction, it is imperative to build a public management platform. Judging from the development of public management at this stage, there are some defects in management concept, control mechanism, facilities construction and technology application, which leads to poor quality of urban comprehensive management services, low level of community construction management services and low level of smart city construction [1]. Based on this, for the construction of public management platform in the process of smart city construction, we must rationally use the advantages and key technologies of Internet+to build a networked comprehensive service management platform for smart cities with networked management and socialized services as the direction, and comprehensively improve the level of social management [2].

Smart city is a new networked, informationized, intelligent and modernized city that is built by comprehensively applying technologies such as big data, cloud computing and Internet of Things. The content of smart city includes smart management, smart industry and smart people's livelihood, which belongs to a brand-new urban development model. Its essence is to use advanced internet technology to intelligently manage the development of urban and rural work, so as to create a better life for urban residents and promote the harmonious development of the city [3]. Smart city is a kind of collaborative system, which can effectively coordinate resources, management and services, realize information sharing and optimal allocation of resources among different departments and systems, improve the efficiency of resource utilization, and promote the construction and development of the city [4].

2 The connotation of smart city

The so-called Smart City refers to a new model of urban governance based on the city-level integrated information platform to realize the coordinated operation of urban related functions [5]. It is fundamentally people-oriented, absorbing people's wisdom, endowing things with wisdom and realizing the optimization of economic and social activities; Its core is to make full use of modern information and communication technology to maximize the development and utilization of information and knowledge resources [6]. The construction of smart cities has a profound background: firstly, with the development of urban economy and society, various problems emerge endlessly and urgently need to be solved; Secondly, with the improvement of residents' living standards, the demand for material and spiritual culture continues to increase; Thirdly, with the increasing pressure on resources and environment, there is an urgent need to achieve transformation and development; Fourthly, with the accelerated development of global information and communication technology, knowledge economy, and information society, more and more integrated developments have emerged. Building a smart city requires four solid foundations: firstly, sufficient perception of facilities and goods; The second is the interconnection and interworking of information networks; The third is the deep integration of information resources; The fourth is the deepening of knowledge management popularization. From the perspective of urban informatization development, smart cities have both commonalities and differences compared to digital cities and smart cities. Table 1 shows their different focuses. To build a smart city, we need to start from three levels: government, enterprises and society, and implement multi-party participation, interaction and coordination. However, in the process of building a smart city, different subjects have different goals and key links that need to be solved. Table 2 gives a detailed explanation [7].

Table 1 Emphasis of different development stages of urban informatization

	Emphasis
Digital city	Emphasize the transformation of information forms and the transformation of transmission ways, so that information can spread faster, wider and more accurately.
Smart City	Emphasize the change of information collection and processing, and use new technologies such as the Internet of Things to build and form new urban infrastructure. Based on more comprehensive information and stronger processing capacity, urban management services are becoming intelligent.
Smart city	Emphasize the transformation of urban governance model. Based on the city-level integrated information platform, we can realize more extensive and in-depth interaction, mutual promotion and complementarity between human intelligence and material intelligence, and promote urban development.

Table 2 The construction goal and key links of smart city under participatory governance

	Construction goal	Key link
Government	Promote economic and social scientific management and people's livelihood services with high quality	(1) Promote the sub-plastic optimization of urban management service flow, and realize the intelligent, cooperative, accurate and efficient decision-making operation; (2) Promote industrial intelligence and intelligent energy industry agglomeration
Enterprise	Make modern industry bigger and stronger	Realize the high technology, high knowledge and high benefit of products and services
society	Promote the improvement of humanistic quality	The acquisition, popularization, deepening and normalization of real information and knowledge

3. Construction of smart city governance model based on subject-object-process governance model

Based on the above analysis, this paper puts forward a smart city governance model (SOP model for short) based on Subject- Object- Process, in which the Subjects are: government, enterprises and society; The Object are smart people, smart governance, smart industry, smart environment, smart people's livelihood, smart infrastructure and smart planning and construction; Process includes two processes: creation and development [8]. The model is shown in Figure 1:

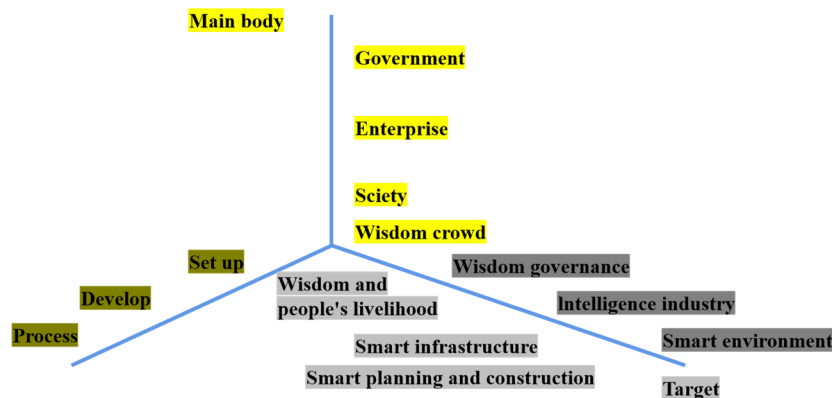


Fig. 1 Subject-object-process governance model of smart city

The government plays a guiding and coordinating role in the construction of smart cities, especially in the creation stage, the government undertakes a lot of work responsibilities. In terms of smart governance, the government needs to adopt information technology to fundamentally optimize the urban governance model and urban operation mechanism, lead urban reform with information technology, continuously improve the efficiency and quality of

urban management, and promote and innovate social management. In terms of smart industry, the government needs to actively cultivate and develop a new generation of information technology industry, actively promote independent innovation and industrial transformation and upgrading, accelerate the integration of the two industries, and continuously enhance the competitiveness of smart industries [9]. In terms of smart environment, the government needs to actively build a high-quality and efficient service environment, and start with talents, funds, policies and many other aspects to form a good atmosphere conducive to the construction and development of smart cities. In terms of smart people's livelihood, the foothold of smart cities is to better serve the development of people's livelihood. Therefore, the government needs to establish and improve the guidance mechanism and operation mechanism through the extensive use of information technology to better serve the people's livelihood and solve the actual needs of the people [10]. In terms of smart infrastructure, in addition to government capital investment, it is also necessary to attract social capital extensively, increase investment in smart city infrastructure, and improve the support ability for smart cities. In terms of smart planning and construction, the government needs to break through the traditional concept of urban planning and construction, and proceed from multiple angles and levels such as regional strategic planning, urban master planning, zoning planning, detailed planning and architectural landscape planning, and base on the actual needs of the government, enterprises and the public to plan and construct, so as to improve the operational efficiency and management service level of the city.

Enterprises are the main force in the construction of smart cities, and their functions are mainly reflected in smart industries and smart infrastructure. On the one hand, enterprises need to keep up with the development trend of smart industry, promote the gorgeous turn from "manufacturing" to "intelligent manufacturing", enhance the humanization and artistry of enterprises and products, take the lead in forming a number of smart enterprises and smart products with market influence, and seize the commanding heights of the market and the forefront of the times; On the other hand, enterprises also need to actively participate in the construction of smart infrastructure, such as broadband networks, wireless cities and other infrastructure construction, and on the basis of communication infrastructure, innovate and launch various smart applications and services. In terms of smart applications and services, it is especially necessary to break down the information barriers between departments under the guidance of unified planning, realize the transformation from fragmented local applications to coordinated platform services, and promote the co-construction and sharing of information resources. The public is an important force in the construction of smart cities, playing multiple roles as representatives of their own interests, participants in the planning process and supervisors. By giving full play to the role of smart people, we can improve the awareness and ability of public participation, and improve and perfect the system and mechanism of public participation in the hypothesis of smart cities [11].

It should be noted that the subjects, objects and processes involved in smart city governance are interrelated and interactive. This model provides a three-dimensional analysis tool for promoting the theoretical research and practice of smart city governance, in which the interaction among government, enterprises and society can form a participatory governance structure, which is the guarantee for the success of smart city construction. Through scientific management of smart people, smart governance, smart industry, smart environment, smart people's livelihood, smart infrastructure and smart planning and construction, and giving full

play to the respective functions of government, enterprises and society, a smooth transition from creation to development of smart cities can be realized [12].

4. Construction of public management platform for multi-level smart cities

4.1 Construction concept

The construction of public management platform for multi-level smart cities needs to implement the concept of people-oriented and serving the people. The public management work under the guidance of this concept does not have the profit-making attribute. The public management work should be innovated based on the needs of the people, so as to meet the construction of smart cities. In addition, in the construction of public management platform, it is necessary to implement new working concepts, bravely break through old working concepts and ideas, carry forward the spirit of democracy, and make people actively participate in the construction of public management platform. At the same time, the staff also need to sum up their experience in time and formulate relevant plans that are in line with the actual development of social management work, so as to ensure the smooth development of management work.

4.2 Construction mechanism

The construction of public management platform for multi-level smart cities must innovate the public management mechanism, and give full play to its value while satisfying the stable operation of smart cities. Innovating in decision-making, realizing the transformation from business decision-making to joint decision-making, highlighting the democratization and scientificity of decision-making and safeguarding the legitimate rights and interests of the people. Innovating in the evaluation mechanism, combining the needs of public management platform construction to build a scientific evaluation mechanism to support internal innovation behavior. The innovation of operating mechanism requires public management institutions to innovate and improve the operating mechanism of public management in combination with the needs of smart city construction at this stage [13]. Because the construction of smart city is a complex project, involving many departments and fields, it is necessary to attach importance to safety issues, establish an intelligent emergency response mechanism, and realize the coordinated operation of various departments. For the innovation of supervision mechanism, it is necessary to realize the transparency and visualization of public management supervision mechanism, publicly present the indicators involved in urban construction to the public, and provide multi-channel feedback channels for the public.

4.3 Construction foundation

The construction of public management platform takes big data as the core, and co-ordinates the allocation of resources of various departments to provide quality services to the people. In the multi-level background, the use of multi-level technology to build a public management platform needs perfect public management facilities to provide support. In addition, it is necessary to increase investment in technology, equipment and personnel training to provide sufficient conditions for the construction of public management platform [14-15].

5 Conclusion

If a smart city is described as a surface, the traffic, economy and government affairs in it are like lines that make up the surface, and each line is composed of specific application points. China has actively explored the construction of smart cities, but at present, the application and research are mostly focused on a specific point or a certain line, which may not really achieve multi-level overall coordination of cities. In order to pave the smart city, the key problem is to establish the core of the face, and then the applications of various points and lines can be connected, and the smart city applications will be systematized and integrated. Finally, through the continuous improvement of this face, the purpose of intelligent management of the city will be achieved.

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