Research and Planning of Smart City Based on Computer Big Data Participation

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Abstract. With the rapid development of domestic economy, the process of urbanization is accelerating. According to the national unification and the national economic operation data released by the Planning Bureau in 2015, the urbanization population accounts for the total population 56.1% of the total. The rapid development of urbanization has promoted the economic and social development of the city. However, the development of urbanization brings about a series of urban problems as well as urban economy. For example, urban resources are increasingly tense, urban environment is becoming worse, and urban livelihood issues are becoming more and more serious. The more complicated. It is everyone's wish to promote the harmony of life and improve the quality of life. How to reasonably apply computer big data technology to the construction of smart city has become an important topic for researcher significance to improve the employment rate to give full play to the role of counselors in employment guidance.

Keywords: Big Data, Smart City, Research Planning

1. Big data and smart city planning

In this era, the research on big data has been more and more in-depth, and it plays an irreplaceable role in many fields, such as economic development, social security, business decision-making and many other fields[3]. Big data has had a great impact on the research paradigm of scholars and people's lifestyle. For smart city, it has become the strategic direction of urbanization and urban planning in China. With the support of national policies, the practice of smart city has made considerable progress in China. At the same time, scholars in many other fields (such as geography, economics, Information Science) have launched relevant discussions from their respective disciplines. There are more and more institutions and achievements carrying out this kind of research, and there are national policy support and social development needs, so it is reasonable to believe that big data will play an extremely important role in the future urban construction planning. Compared with the traditional urban planning, the urban planning in the era of big data can not be simply understood as the informatization of urban planning, let alone the simple addition of a data source in the process of planning; in fact, the urban planning in the era of big data is more about the use of human big data, which combines with some new regulations in the new era of urban development in China The concept of planning embodies the principle of people-oriented in China's urban planning, and also
represents the development direction of China's new urbanization[2].

2. Application of smart city spatial planning to big data

2.1. Smart Shanghai
With the increase of car ownership, urban traffic problems are increasingly prominent. Too many cars make the bearing capacity of the road network decline day by day. Therefore, the traffic jams are more and more serious, and the traffic accidents are more and more frequent. In the face of high traffic demand, Shanghai municipal government actively adopts advanced traffic management technology and means, develops intelligent transportation system, and strives to ensure the smooth flow of urban traffic. Since the mid-1980s, Shanghai has introduced scats traffic signal control system from Australia in traffic control[3]. Shanghai intelligent transportation system has gradually developed, and a series of traffic information service systems and traffic management service systems have been established. In terms of traffic information service, Shanghai is the first city to build "Shanghai radio station" to timely release road condition information, traffic congestion index, etc., to guide drivers to change routes and avoid traffic jams. At the same time, "Shanghai traffic website" has been built to provide citizens with intelligent query of traffic map, guidance of traffic travel and real-time dynamic traffic information The public can enjoy the intelligent information service of "one network in hand, all traffic". In terms of traffic charges, Shanghai has implemented the "gold card" project to comprehensively upgrade the way of traffic charges in Shanghai. In the aspect of traffic management system, through the investigation of traffic flow, the prediction of traffic flow and the analysis of congestion attribute, the intelligent decision-making of traffic congestion and the command and decision-making of emergencies. From the intelligent service of information to the intelligent decision-making of traffic management, big data plays an irreplaceable role in the construction of smart Shanghai, accelerating the development of smart traffic in Shanghai.

2.2. Singapore's wisdom
In June 2006, Singapore launched the "smart 2015" plan, which is a 10-year blueprint of information and communication development with government investment of S $4 billion. The goal is to build an information and intelligent country, even a global city. From 2011 to 2015, Singapore launched the E-government master plan, with the goal of establishing an e-government system with the participation of the whole people and the cooperation of the government and enterprises. At present, more than 1600 e-government services have been built in Singapore, providing great convenience for the lives of Singaporeans and the operation of enterprises. Singaporeans can handle any government business online, and enterprises can communicate with government agencies online. In addition to the realization of intelligence in the aspect of e-government, Singapore has also established a series of convenient service projects such as intelligent transportation, intelligent health care, intelligent education, etc. In its, Singapore has implemented traffic monitoring system, information release system, electronic toll collection system, traffic guidance system and intelligent map system, which has improved its traffic informatization and intelligence[4]. In the field of intelligent medical treatment, Singapore has established a comprehensive medical information platform, which has realized electronic health cases, clinical management, personal health records, etc., facilitating the medical treatment and hospital management. In terms of smart education, Singapore launched the "future school" plan, hoping to build an intelligent interactive classroom with information and multi technology integration.

The implementation of the plan of "smart country 2015" not only promotes the development of Singapore's smart city, but also brings huge economic benefits to Singapore. In 2011, the economy grew by 13.4% compared with 2010, and the computer penetration rate and broadband penetration rate almost covered the whole country. The construction of smart city should also pay attention to the excavation of urban characteristics. For the construction of smart city, different cities will have different plans, and it is impossible to use a common mode in all cities. It is necessary to use big data
to make reasonable plans for the characteristics and resources of different cities, fully excavate them, and then find out the key areas and regions for the future development of the city, and make reasonable regulations for these key areas Stroke. According to the relevant research, the construction of smart city needs to focus on the intelligent and characteristic design of community, industry, transportation, infrastructure and other aspects [5]. The traffic construction of smart city is mainly to make a detailed analysis of the urban planning and traffic design according to the network data and the data of relevant traffic departments; the design of smart industry is mainly to deeply analyze the relevant data of enterprise operation in the city and surrounding cities, and combine the specific resource advantages of the city to the future industrial development of the city Make reasonable layout and planning. Market scale and forecast of smart city in China from 2017 to 2021 refer to Figure 1.

![Figure 1. Market scale and forecast of smart city in China from 2017 to 2021](image)

### 3. The construction of smart city should also pay attention to the excavation of urban characteristics

For the construction of smart city, different cities will have different plans, and it is impossible to use a common mode in all cities. It is necessary to use big data to make reasonable plans for the characteristics and resources of different cities, fully excavate them, and then find out the key areas and regions for the future development of the city, and make reasonable regulations for these key areas Stroke. According to the relevant research, the construction of smart city needs to focus on the intelligent and characteristic design of community, industry, transportation, infrastructure and other aspects. The traffic construction of smart city is mainly to make a detailed analysis of the urban planning and traffic design according to the network data and the data of relevant traffic departments; the design of smart industry is mainly to deeply analyze the relevant data of enterprise operation in the city and surrounding cities, and combine the specific resource advantages of the city to the future industrial development of the city Make reasonable layout and planning [6].

#### 3.1. Strengthen data collection and improve intelligence level

For the construction of smart city, whether the city is intelligent is the key to evaluate the smart city. The city's intelligence is reflected in the need to respond to the needs of users through data analysis. In the field of intelligent transportation, due to the complexity of the road network, it is difficult to achieve a reasonable distribution of sensor nodes, and because the wireless network does not cover all corners of the city, so the data collection and transmission is far below the actual demand. Due to the randomness and uncertainty of citizens in the transportation process, it is difficult to accurately collect the traffic data of citizens. Therefore, the intelligent level of most cities in China is still in the intermediate stage.

#### 3.2. Realize data sharing and break information island

At present, in the process of smart city construction in China, there is a bottle of information that can not be
well integrated, which makes the data independent from each other, which undoubtedly brings huge obstacles to the development of smart city. The neck is the "information island". Because of the interest relationship between enterprises and departments, as well as the different standards of various industries, it leads to how to break the "information island" situation. It is an important issue for the development of cities. First of all, government departments should play a leading role, focusing on urban construction interests, coordinating with each other and achieving mutual benefit and win-win results. Secondly, as a leading group of a city, the government should actively mobilize the enthusiasm of enterprises in urban construction, and reasonably coordinate the interest relationship between enterprises to achieve harmonious development. The information age has given birth to big data, which promotes the development of information technology. Therefore, in the era of big data, only the sharing of data can achieve common development and social progress. Proportion of smart cities in China refer to Figure 2.

![Figure 2. Proportion of smart cities in China](image)

3.3. Pay attention to personnel training, develop and tap industries
The construction of smart city will inevitably promote the progress of big data. In December 2011, in the 12th Five Year Plan for the Internet of things issued by the Ministry of industry and information technology, information processing technology was proposed as one of the four key technological innovation projects, including massive data storage, data mining, image and video intelligent analysis, which are important components of big data. Due to the relatively late start of research on big data in China, the processing and analysis ability of big data is relatively weak. Therefore, in the process of smart city construction, it is necessary to take the government as the leading role, integrate the talent resources of enterprises and universities, actively cultivate relevant talents in big data, actively explore and actively learn advanced foreign theoretical knowledge. Government departments or enterprises should actively introduce foreign advanced technology and attract talents to provide strong technical support for the construction of smart cities.

4. Conclusion
Based on the research of big data and smart city in Shanghai and Singapore, this paper analyzes the application of big data in smart city planning at the theoretical level, hoping to make useful exploration for future research. Moreover, big data has a long way to go to play a role in the management of smart cities in the future.

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