Intelligent City Construction and Planning from the Perspective of Big Data

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Abstract: With the arrival of the era of big data, the development trend of the construction of smart city has already gone through globalization. With the continuous renewal and development of big data technology, the construction of smart city has also made great breakthroughs and progress. Massive data are generated in various fields and life of cities. How to excavate the potential value of the data and apply the valuable information to the construction and management of smart cities is a hotspot project being studied by the national and local governments. Compared with the digital city, the architecture of the smart city has changed. The perception level of data acquisition and the integration of big data technology provide diversified information for the operation of the smart city. So we can think of smart city as an upgrade on the basis of digital city. The key factor of this upgrade is to complete the intelligent processing of digital information. In the era of big data, we should make good use of the development technology of big data and constantly excavate the hidden value of digital information, so as to promote the construction of smart city.

Intelligent city is an industry that makes full use of new information technologies such as mobile internet, Internet of things and cloud computing to realize the sustainable development of efficient urban management and convenient services. With the opening of the era of knowledge economy, the degree of urban informatization has been greatly improved, and urban informatization has become an important manifestation of the comprehensive strength of a city and the degree of urban civilization. The construction of urban informatization is mainly divided into three stages: digitalization, networking and intellectualization. Digital construction is to transform all kinds of information generated in urban production and life into digital data that can be stored by computer, and extract effective information through the analysis of data, so as to realize the digitalization of urban management and improve the work efficiency of various urban management departments and industries. The construction of city network is to connect all kinds of scattered data and information in the construction of city digitalization. Make different industries and departments form the information flow of the city, improve the efficiency of the whole city. Intelligence is an optimization based on digitalization and networking. Through the intelligent city construction system, we can deeply analyze and extract the information flow of the city, and find out the links that need to be optimized. We can use artificial intelligence technology to optimize the whole system and improve the level of automation and intellectualization of the whole city life. From the above viewpoints, we can see that the development of urban construction from digitalization to networking and further optimization to intelligent construction is an inevitable trend. This article will start with the characteristics of the intelligent city construction, to the big city.The main contents and matters needing attention of intelligent city construction in data age are discussed in detail.

1. The Concept of Smart City in Big Data Age

At present, the concept of "smart city" has not been widely recognized. Some scholars believe that "smart city" is to make full use of scientific and technological means to analyze and integrate all kinds of information generated by the urban integrated operation system on the basis of large data, and to use the integrated information to urban services, livelihood projects and other types of information. Activities in order to make an intelligent response to the various operations of the city, so that the city life is better.

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2. Problems and Challenges of Two Big Data Applied to Smart City Security

2.1 Technical level

(1) Data storage and processing are facing enormous challenges. On the one hand, the continuous and deeper application of big data in the construction of smart city security not only leads to the linear growth of data volume, but also puts forward higher requirements for storage space, computing capacity and data processing speed. Of course, for large data, its large amount of data and low value density are the basic characteristics, which are particularly evident in the process of smart city security construction. For example, there may be tens of thousands or even more cameras in the city monitoring records, but only a few seconds is a strong evidence to solve the case when it may happen. On the other hand, the heterogeneity of big data in smart cities is high, and the diversity of data structure, storage style and storage conditions brings great challenges to data reading and management.

(2) Data analysis ability needs to be strengthened. Introducing big data into intelligent city security data reading, analysis and processing, there are still many technical difficulties. At present, the technology used to extract traffic safety-related vehicle data is relatively mature, but the various data analysis technologies for portraits and human bodies have not yet reached a practical level. For example, in practice, because of illumination, angle and other reasons, it is difficult to achieve a clear degree of face recognition, so that the later monitoring video also needs professional technical personnel to deal with, which will inevitably lead to a reduction in work efficiency. Not only that, at present, a lot of data analysis on smart city security in our country basically stays at the superficial level, and there is a big gap between depth and intelligence.

(3) The absence of standards is an important restrictive factor. After more than ten years of continuous efforts, China has made great progress in the standardization of security system. After entering the stage of Smart City, the relevant departments such as the Development and Reform Commission put forward a standardized system framework for Smart City in the report of Guidance Opinions on the Construction and Application of Smart City Standard System and Evaluation Index System. However, because smart city involves many aspects, and many of these technologies have been in a strong process of change, it is very difficult to put forward appropriate standards and apply them. Therefore, this is one of the fundamental problems that need to be solved urgently in the process of smart city security construction.

2.2 Overall Level

(1) Information islands are serious and lack of sharing. In the era of big data, in order to better play its potential, real-time dynamic updating and interconnection are indispensable. To achieve data exchange and sharing is not only conducive to improving the ability of data association analysis, deep mining and resource integration, but also helpful to improve the utilization rate of data resources. However, for the current work of urban safety data analysis in China, it is not only in various business systems, but also difficult to effectively integrate data resources among departments and regions. Information islands are serious and the degree of sharing is insufficient. So, how to better solve this problem and realize data exchange and sharing is the most urgent problem facing the construction of smart city security in the era of big data. (2) Lack of overall coordination and insufficient efficiency in construction and utilization. With the continuous development of smart cities, especially the emergence of the concept of big data, all parts of the country have begun to build data repositories. From the overall situation, in the process of building database, each region did not consider whether it was practical or not, and blindly followed the results of large-scale construction, which led to the late emergence of the situation that could not be effectively maintained. With the continuous development of information technology, if it is not put into good use, it will inevitably lead to serious waste of resources in its construction. In addition, at present, the units that can make full use of the data are mainly concentrated in the public security or transportation departments, but the application in the field of food safety, urban early warning and other public sectors is still lacking. (3) Data privacy lacks necessary legal protection. At present, China's network legal system has been basically improved, which covers many areas such as

network security, network intellectual property rights and so on. But the legal construction system of big data is still not perfect. Among them, only the Regulation of the Government of the People's Republic of China on Information Disclosure is a legal regulation on data sharing. Although in the era of big data, everyone will become transparent, but the privacy of personal information should be protected. So how to measure the relationship between information sharing and privacy protection needs the effective restriction and management of laws and regulations.

3. Problems to be Noticed in the Construction of Smart Cities in the Three Data Ages

The construction of intelligent city has undoubtedly brought great convenience to people's life and greatly improved the speed of city development. However, under the background of big data, the construction of smart city is still in the trial stage, there are still many problems, and there are still many areas to be strengthened and improved.

3.1 Information security issues

In the era of big data, the construction of intelligent city needs the technology support of network technology, cloud computing and other emerging technologies to provide guarantee for the intelligent construction of the whole city. The application of this technology not only makes remarkable contributions to urban construction, but also makes information security issues particularly important. Once the information security problems occur, it is likely to cause the city management system can not operate properly and other phenomena. The information system of the whole smart city includes government information, enterprise information, personal information of residents and many people's livelihood data. Once the illegal elements steal information, it is likely to have a certain impact on personal life and economy, serious social and economic chaos and the long-term stability of the whole society. Therefore, information protection is very important in the construction and operation of smart cities.

3.2 Privacy Protection

The construction of smart city improves the efficiency of urban management and convenient service, makes the city more intelligent, and puts the city itself in a complex network environment. This is also one of the challenges in the construction of smart cities in the era of big data. The construction of smart city can not be separated from information technology and engineering, and the network supported by these two is also the target attacked by many illegal elements. The network carries too much personal information of citizens. In the management system of smart city, all kinds of contact ways and personal information of citizens are registered and stored in the network cloud. Once the network server is attacked, the personal information of residents is at risk of being leaked. This will not only make citizens lose their determination to build smart cities, but also make information collection more difficult. In addition, with the development of timely communication, e-commerce, mobile payment and other technologies, citizens'personal life data has been completely exposed to the Internet. These data can show their personal life trajectory, such as long-term activities, personal hobbies and social relations, and many other information, while the disclosure of personal information. It is bound to have an impact on citizens'lives.

In the construction of smart city, we should not only guard against illegal elements stealing data, but also prevent equipment failure and user operation errors. The disclosure of personal privacy will challenge social trust and the credibility of relevant sectors. This lack of trust will directly affect the construction of smart cities.

3.3 Information Isolation Phenomenon

The source of wisdom of a wise city is collecting, analyzing and counting massive data. Through deep data mining, valuable information can be obtained. If there are not enough information sources, the construction of smart cities will become empty talk. With huge data sources, if the data can not be digged in depth, it will also make the construction of smart cities into a bottleneck. With the continuous development of the construction of smart city, the problem of information island in

smart city has become more prominent and needs to be solved urgently. Information island phenomenon will not only cause unreasonable hardware equipment configuration, but also scatter the collected data, which will greatly increase the difficulty of data processing and can not provide timely information support for urban construction. And the development level of different cities, industries and enterprises in the same industry is different, so information island is a common problem in the construction of smart city. If we can not solve the problem of information island, then the construction of smart city will not be really promoted. To popularize the construction of smart cities, it is necessary for all parts of the world to work together to break the information island and realize the open sharing of data resources.

4. Conclusion

The construction of smart city can not be carried out independently without the support of big data technology, which runs through all aspects of smart city construction and urban management like blood. We have been seeking to solve environmental problems, traffic problems, medical problems and other "urban diseases" treatment methods, the government has been thinking about how to build and manage future cities, and how to choose the basis for construction and management. Big data is the driving force of the construction of smart cities, and also an important technical means and scientific basis for the construction and management of smart cities. Big data not only guides great changes in the development of human society, but also provides productive power for the development of society. The advent of the era of big data has greatly promoted the construction of smart cities. And the construction of smart city is also inseparable from the technical support and equipment support of big data. We believe that in the era of big data, the construction of smart cities will be integrated into the new management model and people's livelihood service model, and lay the foundation for social and economic development. We firmly believe that with the joint efforts of all people, the construction of a smart city will be realized as soon as possible. In smart cities, people's lives will be happier and more beautiful.

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