Journal of Electronics and Information Science (2024)
Clausius Scientific Press, Canada

DOI: 10.23977/jeis.2024.090306
ISSN 2371-9524 Vol. 9 Num. 3

Research on the path of building smart society from the perspective of big data

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Keywords: Big data; Intelligent society; Information security; Top-level design

Abstract: In the new era of rapid development of information technology, the construction of a smart society based on big data has increasingly attracted the attention of the government, and the smart society meets the requirements of new public management and the trend of social change, and some cities in China are already in the forefront of global smart cities.However, in the process of building a smart society based on big data, it still faces difficulties such as severe information protection situation, uneven construction process, and insufficient diversification of the main structure, which need to be studied urgently.Based on this, it is imperative to ensure network security to maintain personal information, pay attention to public experience to optimize collaborative development, and commit to talent training to scientific top-level design.

1. Introduction

With the continuous advancement of a new round of scientific and technological revolution and industrial transformation, the construction of a smart society with digitalization, networking, intelligence and integration as its main characteristics has attracted increasing attention.[1]The CPC Central Committee and The State Council have repeatedly emphasized accelerating the interconnection and sharing of government data, promoting the construction of information platforms, building smart cities and smart communities, and promoting the transformation and upgrading of social governance.Smart society refers to the use of various information technologies or innovative concepts to open up and integrate urban systems and services to enhance the efficiency of resource utilization, optimize urban management and services, and improve the quality of life of citizens.Smart society is the core content and inevitable trend of smart city development, and its wisdom is mainly reflected in the intelligence of new basic public facilities such as the Internet of Things, the Internet, and geographic information systems.Under the background of big data, it is of great significance to explore how to integrate social resources for top-level path design.

2. It is imperative to build a smart society under the background of big data

2.1. The smart society is the sail, guiding the front

Building a smart society is the central goal of big data. Since China put forward the concept of smart society in 2009, it has actively joined the exploration of "smart vision", and under the promotion of the government-led model, the development of smart society has experienced three stages of information infrastructure construction, digital city construction and smart society construction, and it is still a mature stage of the development of smart society.It is estimated that by 2030, China's urbanization rate will reach 70%, and service platforms such as intelligent transportation systems, smart energy systems, smart building service systems, urban command centers, smart medical services, urban public safety, urban environmental management, and government public service platforms will be widely used.[2]95% of cities above sub-provincial level and 83% of prefecture-level cities, totaling more than 500 cities, have explicitly proposed or are building smart cities in the "Government Work Report" or related planning.

On February 24, 2023, Beijing Shanghai Digital Technology Co., Ltd. and the New Generation of Artificial Intelligence Industrial Technology Innovation Strategic Alliance (AITISA) released the "China Urban Artificial Intelligence Development Index Report", which divides cities into three echelons according to the comprehensive ranking order.Among them, Beijing, Shanghai, Shenzhen, Guangzhou, Hangzhou, Suzhou, Nanjing, Hefei, Xi 'an and Qingdao are the first tier cities.As a typical epitome of the rapid development of information technology, smart society is an efficient combination of information infrastructure and physical infrastructure. After enduring practice, it has certain self-learning, self-growth and self-innovation capabilities.This is conducive to enhancing the innovation of the economy and the value of the productivity of the smart society, comprehensively improving the government's public service capacity, reducing management costs, improving administrative efficiency, deepening public services at different levels, promoting functional transformation and friendly interaction, and meeting the requirements of the new public management.

Data is an essential element in driving digital, intelligent, digital China and the digital transformation of government. Without the support of large volume, multiple types and high value data, all innovative application development and intelligent equipment application will become "water without source and wood without roots", and the realization of modern social governance must be based on the application of high-quality and efficient operation scenarios.

2.2. Big data for the paddle, power endurance

Digital technology has evolved into a seven-element digital technology ecosystem that is a driving force for economic and social development and conducive to the transition to a smart society.In March 2024, the Government Work Report of The State Council proposed to actively expand effective investment.We will give full play to the multiplier effect of government investment, focus on supporting scientific and technological innovation and new infrastructure, strengthen the people's livelihood and other weak areas of the economy and society to strengthen weaknesses, promote the upgrading of various types of production and service equipment and technological upgrading, and accelerate the implementation of major projects under the 14th Five-Year Plan.

In recent years, at the national level, it has repeatedly emphasized the construction of a smart society, relying on data decision-making, governing the country with data technology, driving economic growth, government governance and social reform.After the outbreak of the novel coronavirus pneumonia, various types of service robots have played an important role in liberating some manpower.With the acceleration of the "big data" process, including 5G networks, big data centers, and artificial intelligence, new development momentum has been ushered in for the

construction of a smart society.Big data implements the new development concept in the era of smart economy, absorbs the achievements of the new scientific and technological revolution, and is committed to the realization of the ecological, digital, intelligent, high-speed, and old and new driving forces.In 2023, China's 5G user penetration rate will exceed 50%, and the digital economy will accelerate development.Among them, Guangdong Province has built a total of more than 320,000 5G base stations, and 5G networks have basically covered major urban and rural areas, ranking first in the country, and Jiangsu ranks second with about 240,000.

3. The realistic dilemma of building a smart society under the background of big data

3.1. The situation of information protection is grim

In the process of building a smart society under the background of big data, urban governance institutions collect, classify and store all kinds of information based on the establishment of large databases, break through the information gap, break the information stagnation, and realize information sharing, thus forming one or more smart society information centers.Although it is necessary to construct information processing center for the construction and development of intelligent society, from the perspective of information infringement risk, the information processing center mechanism of intelligent society also provides convenience for information infringement to some extent.In the era of smart society based on the background of big data, big data technology and social real life become one, giving up the right to personal information, and people become transparent.Although the centralized electronic processing mode of information in the smart society makes the physical city begin to have intelligent attributes, it undoubtedly reduces the infringement cost of information infringer searching for information and analyzing information. Without network security, there is no information security. From the perspective of big data, information protection in the construction of smart society is particularly important.

3.2. Construction has been uneven

In the context of big data, the development of the smart society is uneven, and the progress is developing by leaps and strides. Some regions have a profound economic and technological foundation, which promotes the construction of the smart society. For example, Shanghai and Beijing are rated as advanced global smart cities, and smart services are far ahead. In terms of regional layout, China's smart cities are concentrated in the central and eastern regions, of which East China is the most concentrated, while in contrast, the construction of new infrastructure in Qinghai, Hainan and other provinces is imperfect, and the total number of smart society pilots is also very small. It can be seen that the top-level design of the smart society should also continue to evolve in the interaction process with practice, consider the complexity and diversity of the city, and jointly shape the smart society relying on big data.

3.3. The main structure does not meet the diversification target

In the process of building a smart society in the context of big data, both big data and smart society are just a means, not the final direction. How to use scientific and technological means to make people's lives more convenient, better infrastructure, safer urban development, more sustainable transportation, more equal services, and more inclusive society is the ultimate goal of building a smart society. The construction of a smart society has never been short of participants, and seemingly high threshold requirements enable many enterprises with information background to join in as long as their products are labeled as smart, but there are rarely urbanists, urban planners and sociologists in

these projects.In the future, the project team of big data must be diverse, and the smart society is no longer a simple plan that only relies on science and technology. Only by relying on the diversity of talents can we ensure the effective implementation of big data projects, and build a smart society with a broad vision and correct values. For example, the Harbin Municipal government strives to strengthen the top-level design of smart government affairs and the integration of resources, and has built 12 cloud platforms involving urban management, security, transportation, environmental protection, medical care, and elderly care, providing a full range of intelligent services for the people.[3]

4. Countermeasures and suggestions

4.1. Ensure network security and maintain personal information

In the construction and development of a smart society under big data, attention should be paid to ensuring network security. Security is the premise of development, without network security, there is no national security, there is no security of big data and smart society. Appropriate protection should be given to different types of information, the power and responsibility system should be improved, the information collection subject should be clearly authorized, other subjects should be prevented from stealing information at will, and those who steal information should be severely punished; Effectively protect the information containing economic value from damage, and maintain personal privacy information to avoid interference by others. In the face of infringement, the government should improve emergency handling methods, quickly judge and deal with problems when they occur, minimize losses, improve problem defense capabilities, and promote the orderly construction of a smart society.

4.2. Focus on people's experience and optimize coordinated development

In the construction and development of a smart society under big data, people should be people-oriented and coordinated development should be promoted in a gradient. On the one hand, we will expand the intelligent application of people's livelihood, deepen the innovative intelligent application of next-generation information technology in all aspects such as medical care, education, elderly care, and employment, and create intelligent public services and convenient smart life services. On the other hand, the new model of data-driven comprehensive governance is used to coordinate the people's livelihood service system at different levels in different regions, promote the extension of intelligent service resources to a wider field and deeper level, improve the level of fine urban governance and intelligent decision-making, and form a fair, inclusive, high-quality and efficient smart society system that relies on big data support.[4]

4.3. Committed to talent training, scientific top-level design

Under the background of big data, the demand for talents in the construction of smart society has changed from traditional professional and technical personnel to compound talents. Big Data and smart society talents include not only technical elites in the traditional sense, such as engineers and data analysts who are skilled in computer technology, but also urbanists, urban planners, architects, social workers, real estate developers and various types of consultants. Diversified personality talent training, talent resources in all fields should be sufficient, and more importantly, talents who can integrate data application with specific industries should truly land network technology in urban construction.

Acknowledgments

Key project of Research Office of Heilongjiang Provincial People's Government in 2024“Research on future industrial development and policy support system of Heilongjiang Province”(SKGW-ZDKT2024017);Heilongjiang Province philosophy and social science research planning project“Study on improving the toughness and safety level of industrial chain and supply chain of manufacturing industry in Heilongjiang Province”(23JYA260);The central government supports the high-level talents program funded by the reform and development of local colleges and universities:Research on digital technology enabling high-quality development of manufacturing industry in Heilongjiang Province.

References

[1] Huang Jianwei, Liu Jun. The Development of Digital governance in Europe and the United States and its implications for China [J]. Chinese Administration,2019(06):36-41.

[2] Cheng Sumei. The Transformation and Prospect of Intelligent Society [J]. Journal of Shanghai Jiao Tong University (Philosophy and Social Sciences Edition),2020,28(04)9-13.

[3] Lei Bin, Lan Yushi, Li Maolin, Pan Jianqun, Zhou Zhongyuan, Zhang Chunhui. General Conception and Development Suggestions for the systematic construction of Smart Society [J]. China Engineering Science, 2023,25(03):219-229.

[4] Mu Tianwen, Zhang Qin. Will the construction of smart cities improve the effectiveness of social governance? An empirical test based on micro-data of the Comprehensive Survey of Social Conditions (CSS) in China [J]. Scientific decision-making, 2024(01):102-111.