

Research on the Development of Smart Cities in China in the Internet Era

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Abstract

With the rapid development and progress of the times, the internet has entered the lives of every household, and big data has also penetrated people's lives. Smart cities are an emerging product in the context of the Internet. The construction of smart cities includes multiple aspects such as healthcare, housing, transportation, education, etc. It is a flexible, comprehensive, and open technology. In recent years, Internet technology has been developing at a high speed, and society has gradually become information-based, fragmentation, and transparent. However, with the change of people's thinking and lifestyle, most cities have not kept up with the trend of the times and are unable to meet the daily life needs of residents. The launch of smart cities aims to make people's lives more convenient, promote urban construction, and assist economic development by optimizing the urban operation mechanism more reasonably. However, there are problems in the current construction of smart cities, such as having a thousand cities on one side and being greedy for everything. Many cities use the same construction method without comprehensive consideration, resulting in problems such as false emptiness, impracticality, and face saving projects; Therefore, in order to better meet the needs of different cities and solve multiple types of urbanization problems, this article, based on the actual situation of the current era, elaborates on the construction plan of smart cities in the context of the Internet, hoping to provide effective suggestions and theoretical basis for the optimization of smart city construction.

Keywords

Smart City; Internet; Construct Theory Optimize.

1. Introduction

With the advent of the 21st century, today's society has become an information explosion society. In 2016, the 36th collective learning of the Political Bureau of the Central Committee of the Communist Party of China proposed for the first time the construction of a national integrated big data center, focusing on building a smart data city, promoting dataization, and information processing, and achieving collaboration among various departments, levels, systems, and businesses. In the 21st year, the Ministry of Industry and Information Technology of China issued an important notice to vigorously expand the practical application of smart cities and other fields. With the advent of the Internet era, data has gradually become an important means of information, and the construction of smart cities is the key to effective use of data and resource allocation. In the process of urbanization in China, the development of digital technology and scientific information is the pillar of urbanization. At present, more than 900 cities in China are carrying out social practice pilot projects. During the 13th Five Year Plan period, the scale of China's smart city construction market has exceeded 800 billion. Smart

cities have achieved important results in healthcare, education, government affairs, transportation, and other areas, while promoting the construction of green and low-carbon cities. Although the construction of smart cities in China has gradually entered a stable stage, there are still some problems. Therefore, this article mainly studies the construction strategies of smart cities in the Internet era and how to address potential issues.

2. Overview of Smart Cities

2.1. Overview of Smart Cities

Smart city is a new model of urban management based on the construction of digital cities in the data age. In 2014, China clearly defined a smart city as a new concept that utilizes cloud computing, big data, spatial geographic information, and other new generation technologies to promote urban development, services, and management. Since the emergence of the concept of smart land, China's road to smart city construction has been continuously advancing. Currently, China's smart city construction has gradually extended from large cities to small cities, and the focus of work has shifted to county-level development. And smart cities use continuously advancing technological means to integrate information from various stages, reveal development relationships, perceive and analyze urban resources, and better carry out urban development planning. The construction of smart cities is gradually advancing, and their coverage is constantly enriching, including education, healthcare, transportation, e-commerce, and other aspects. A smart city is a more large-scale, diversified, and intelligent development based on digital cities, and it is a landmark product of the Internet era.

2.2. Smart City Connotation

The construction of smart cities is conducive to sustainable development and urban-rural integration. With the arrival of the 21st century, China has begun to vigorously develop the construction of smart cities in recent years. The rapid development of internet technology has laid the foundation for smart cities to efficiently connect various things. Smart cities use the intelligence and automation of information technology to provide more rational design services, which can easily and quickly solve many urban problems, promote urban development, and help the process of urban-rural integration, so as to achieve an effective new model of urban governance, provide citizens with green and low-carbon living environment and convenient Urban morphology services, and enable residents to have a more high-quality life experience.

3. The Development Role of Smart Cities in the Internet Era

3.1. The Role of Smart Cities

Smart cities are products of the digital economy, integrating information from various stages through the Internet, adjusting and linking collected data, and achieving the goal of convenient city intelligence through data analysis. Smart cities are another innovation based on digital cities, with more scale and diversity. In the modern society with the rapid development of big data, the development of smart cities continues to keep up with the times and expand their coverage and fields. At present, the development scale and growth rate of smart cities are good, including digital education, convenient medical care, scientific travel, beautiful parks, and other aspects. They comprehensively penetrate the lives of citizens from various angles of clothing, food, housing, and transportation, promote urban economic development, and meet the living needs of residents. The important development role of smart cities is mainly reflected in the following aspects: firstly, convenient medical service infrastructure, and reasonable solutions to the problems of difficult medical treatment, expensive medication, and difficulty in finding hospitals. Secondly, improve the urban education system, achieve more reasonable school allocation, utilize resource sharing technology to develop learning plans for students more

scientifically, and provide more optimized campus construction through the agility of internet technology. The third monitoring of air quality predicts weather conditions, and through the combination of smart city construction and emerging technologies, intelligently perceives and analyzes urban air quality. The fourth way to handle sudden public events is through the bidirectional combination of data and network, the integration of dispersed systems, platforms, and other resource information, the coordination of the city's administrative management capabilities, and the strengthening of risk prevention, thereby improving the city's fault tolerance and ability to handle events.

3.2. Key Points for the Construction of Smart Cities

The original mission of the new smart city is to serve the people. The core of the city is people. People's cities serve the people. The construction of smart cities is to provide people with more convenient services and a beautiful living environment, improve residents' sense of happiness, and drive economic development. Therefore, the current development focus is to use advanced technology and concepts to promote the construction of smart cities in China, explore the development path of global smart city construction, and seize the breakthrough of institutional innovation to achieve a new round of rapid development of smart cities. The new type of smart city is to build a growth system with vitality and temperature. Smart cities need to establish data-driven, promote development, and A new mechanism for smart city governance and operation that emphasizes both detection and regulation, in order to achieve sustainable development. Secondly, smart cities need to strengthen the construction of communication networks. In the digital information age, the governance model of smart cities has great value in communication. The operation of the Internet has increased the speed of browsing and development in the era of traffic, and the rise of various social software has accelerated the speed of information exchange. Therefore, the construction of communication networks, combined with GPS and other positioning systems, can efficiently achieve information and resource exchange between cities, Beneficial to the intelligent development of cities. Finally, the construction of smart cities should attach importance to natural ecology, take building a good ecological environment as an important development point, achieve the original intention of "green water and green mountains are golden mountains and silver mountains", advocate the construction of green and low-carbon cities, optimize living environments, improve residents' happiness, and promote urban construction.

4. Characteristics of Smart Cities

4.1. Comprehensiveness

Smart cities are products of the highly developed urban information in the context of the Internet. Currently, they include various technologies such as 5G, big data, GIS, GPS, the Internet, RFID technology, cloud computing, and various analysis models such as DID and PSM. In the data age, information acquisition is diversified and fragmentation. Therefore, statistical integration and analysis of data are key to the construction of smart cities. The current direction of successful data integration and analysis in smart cities is to achieve resource sharing, such as shared bicycles, shared cars, shared stores, shared storage cabinets, etc., which greatly facilitates people's lives. With the continuous improvement of smart city data platforms, data integration capabilities are also being further strengthened, which has to some extent improved the operational effectiveness of smart cities.

4.2. Open

Smart cities form deep connections between networks based on various information networks, greatly increasing the interactivity of urban information, and achieving the integration and three-dimensional transformation of information resources. And during the construction

process of smart cities, the interactive communication mode has been optimized. Through the interaction between data, information, and platforms, the functions of the communication system have been strengthened, the communication frequency of long-distance crowds has been increased, and problems such as information lag have been solved. It provides citizens with more convenient channels for information exchange and also makes it easier for them to understand industry resources, laying the foundation for the economic development of the city.

4.3. Environmentally

An important development goal of smart city construction is to pursue sustainable development, create a beautiful and livable environment, and enhance residents' sense of happiness. Intelligent park landscape design is an important development direction for smart cities. In the construction of modern smart cities, parks, as the main way of relaxation and entertainment, need to adapt to the development characteristics of the times, combine with the living habits of contemporary young people, and integrate communication, 3D simulation, VR, CPS and other technologies to create a modern urban park that can better meet the needs of different groups of people. At the same time, in order to create a suitable living environment, the construction of a smart city should take science and technology as the pillar, accelerate the development of blockchain, smart logistics, intelligent recycling systems, and build a green and environmentally friendly Urban morphology. And the new model of smart cities has achieved significant results in meteorology, flood control and earthquake resistance, water transportation, irrigation, and other aspects.

5. Existing Issues in the Construction of Smart Cities in the Internet Era

5.1. Modular Smart City Construction

At present, China's smart cities have entered an important stage of development, but there is a clear phenomenon of "one thousand cities, one side" in the construction of smart cities. Most cities have directly followed the construction models of other cities without considering their own development advantages and characteristics. Too vague, lacking practice, often staying at the theoretical stage without combining with one's own development reality. Therefore, many cities have not achieved successful results in the construction of smart cities, which are flashy and unrealistic, only seeing superficial phenomena without pursuing actual benefits and residents' experience. The overly standardized and uniform construction of smart cities not only fails to create a better development form, but also loses the characteristics of the city itself, resulting in resource waste, data silos, and low input-output efficiency.

5.2. Information Security Issues

Resource integration and information sharing are key development points for smart cities, but in the process of resource sharing, a large amount of information such as images, voice, and videos is constantly transmitted and processed. Although information sharing can achieve multifaceted development and creation, there are also many unknown risks, such as information leakage and personal property security. At the same time, there are also issues with incomplete information integration, duplication of information, and related information usage during the development process.

6. Countermeasure

6.1. Reasonable Utilization of Geographic Information Systems

Smart cities are a new development model that integrates multiple new generation technologies. Therefore, in the early stages of smart city construction, top-level design should be done well and on-site research should be strengthened. Different cities have different

cultural heritage, development processes, and geographical locations. The construction of smart cities is not static, but should be tailored to local conditions and make good use of each city's unique advantages and culture to create personalized development directions. Therefore, the construction of smart cities can be combined with geographic information systems to measure geographic data through satellite remote sensing and other methods to obtain relevant cultural and natural information. The collection and analysis of data provide important basis for the construction of smart cities and promote their development.

6.2. Establish a Data-driven Regulatory Operation System

In the process of building a smart city, there are significant information security issues. Therefore, it is necessary to establish sound regulatory mechanisms, optimize data operation mechanisms, build a data service ecosystem, and improve the level of data analysis and application. The relevant Chinese government should improve the regulatory system for data property rights, information security, and fair competition, and accelerate the formulation of administrative regulations, departmental rules, national standards, and industry standards. Secondly, it is necessary to strengthen the operation and management of urban data security, improve the security evaluation standards for each link, and lay the foundation for the further development of smart cities.

7. Conclusion

The construction of smart cities has laid a solid foundation for the transformation of cities. The construction of big data network will enable the overall planning of transportation consumption to reach a certain scale, combined with the operation mode of digital cities and the input and output of information technology, to accelerate the construction speed and data sharing of smart cities. The era of big data is like a database storing enormous energy, which is released while building smart cities to achieve network information output and ecological balance, accelerate the construction of smart cities, and explore the true models and mechanisms of smart city construction.

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