

Analysis on the influence of smart city construction on high-quality urban development

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Abstract. The focus of smart cities has shifted from the technical upgrade of basic city operation systems to the awareness and perception of urban residents. The idea of a "smart city" has emerged with the growth of urban informatization. A smart city is a crucial component in attaining high-quality development and is a prerequisite for urban digitalization to advance into intelligence. In the Communist Party of China's 20th National Congress report, General Secretary Xi Jinping emphasized the need to create a smart, resilient, and livable city. The people desire and the times demand that a new kind of city be built—one that is inventive, smart, safe, livable, resilient, and harmonious. High-quality urban development has gained fresh impetus from smart cities, an urban development paradigm that intimately combines the digital economy and modern urbanization. This article discusses the influencing factors of smart city construction on high-quality urban development, thereby providing important inspiration for the construction of smart cities to promote the macro goal of high-quality urban development.

Keywords: Smart city, high-quality development, technological level, digitalization.

1. Introduction

In reaction to the global financial crisis, International Business Machines Corporation launched the Smart Planet idea in 2008, with the aim of fostering the growth of innovative industries. As the core content, smart cities have quickly become an important development strategy for countries to cope with the economic crisis and seize the commanding heights of science and technology. Based on digital cities, smart cities introduce new-generation information technologies such as cloud computing and the Internet of Things to realize intelligent urban planning, construction, management and services. Smart cities are the only way for the country to develop and grow in the new era and are the basic path to achieving high-quality urban development. The 2014 publication of "Guiding Opinions on Promoting Smart Cities and Healthy Development" highlighted the necessity of standardizing and advancing smart city development that is healthy, creating a new urban form for the Innovation 2.0 era, and charting a new course for urbanization in the Innovation 2.0 era that is distinctively Chinese. The Communist Party of China's 20th National Congress report from 2022 made improvements to the system of social governance, including collaborative building, sharing, and governance, as well as increasing the effectiveness of social governance. The new generation of information technology has brought new opportunities for the digital transformation of government departments and improved governance efficiency. From a micro-individual perspective, the construction of smart cities plays an important role in improving people's quality of life. From a macro perspective, building a smart city more broadly and effectively is a key factor in high-quality urban development. Therefore, the study of the impact of smart cities on high-quality urban development has important practical significance.

Since my country promoted the standardization construction of smart cities in 2013, more than 700 cities (including county-level cities) have proposed smart cities.

Smart cities have been launched or are under construction, covering all cities at the sub-provincial level or above, 89% of cities at the prefecture level or above, and 47% of county-level cities [1]. The intelligence and humanization of cities are rapidly becoming a reality. The combination of information and communication technologies is creating new urban environments people have never experienced before. The focus of smart cities has shifted from the technical upgrade of basic city

operation systems to the awareness and perception of urban residents. More and more research institutions have put the "people-oriented" concept at the top in the construction of smart city framework models.

According to statistics, 40-70% of the world's electricity is currently consumed in the existing power system. The average amount of fuel wasted on finding parking spaces in Los Angeles every year can make a car travel around the world 38 times. There are 2,200,000 accidents in the United States every year. Dispensing errors due to handwritten prescriptions. With global development, without urban carriers such as smart cities, the world may become a sky attic. Smart city construction is an intuitive reflection of the country's level in all aspects. As an important conceptual expression that adapts to the development of my country's national conditions, the smart city reflects the actual needs of my country's urban economic and social development and opens a new stage of high-quality development of my country's smart cities. To this end, this article attempts to identify the influencing factors of smart cities on high-quality urban development from the perspective of smart city construction. The possible marginal contribution of this article is:

Theoretically explore the impact and mechanism of smart cities on high-quality urban development, enriching the research literature on how smart cities and high-quality urban development should be constructed.

A detailed examination of the impact of smart city pilot policies on the city, an in-depth analysis of the mechanism by which smart cities affect high-quality urban development, and an experience for further promoting the construction of smart cities.

2. Connotation and policy background of smart city construction

2.1. Connotation of Smart City Construction

The concept of smart cities first appeared in the mid-1980s, proposed by an industrial technology association named after smart cities in Las Vegas, USA. It is very different from the smart cities people discuss today. The earliest smart cities mainly focused on the application of information technology in industry and the display of information technology, which was inefficient for urban quality development; but now smart cities use the new generation of information and communication technology to closely integrate with various regions of the city to promote urban construction and improve urban management. The level of intelligence can make intelligent responses to real-time urban dynamics and achieve high-quality urban development. Smart cities are the product of the intersection and combination of global urbanization, economic globalization and social informatization in a specific historical period. They are the continuation, integration and sublimation of previous urban development concepts. By combing the existing literature, it was found that: Li Yuanqi found that smart cities can promote the rationalization and upgrading of industrial structure [2]. Zhu Yanting et al. believed that smart cities make urban development goals and positioning implementable. These documents have proven that smart city construction is of great significance to high-quality urban development [3]. Information technology and clever methods are employed in smart cities, which have their roots in the media industry. They are the offspring of contemporary civilization and actualize the intelligence, informatization, and efficiency of the city via the application of cutting-edge information technology. The building of smart cities has become a significant trend in urban development worldwide due to the ongoing advancements in science and technology, particularly the quick growth of new-generation information technologies like the Internet of Things, cloud computing, and big data. Construction of smart cities in China has drawn significant national attention and legislative backing, and it is now a major driver of urbanization and city quality improvement.

Nowadays, more and more research institutions put the "people-oriented" concept at the top in the construction of smart city framework models. Smart cities pay more attention to maintaining the essence of the city at the theoretical and top-level design levels, but there is still a gap between theory and practice.

2.2. Policy Background of Smart City Construction

A smart city is a crucial tool for putting modern urbanization building and innovation-driven growth into practice. It primarily studies people, resources, government affairs, and transportation while using contemporary information technology to a variety of areas, including urban planning, operation, construction, and management. High-quality urban development, enhanced resource allocation efficiency, and enhanced urban management capabilities may all be attained through the connectivity and integration of communications. IBM proposed the idea of a “smart earth” in 2008, which can be regarded as the prototype of a “smart city”. Developed economies took the lead in smart practice. After the United States established its first smart city in Dubuque in 2009, the Japanese government proposed the "I-Japan Smart Japan Strategy 2015" and the European Union launched the "Smart City and Community Development Plan." Smart cities have gradually become a new model of urban development in the world today. In 2012, China officially launched the pilot work of smart city construction, and has now formed a complete smart city institutional framework of “top-level design → local application → upper-level approval → local implementation → performance evaluation → experience summary”. The Chinese government attaches great importance to the construction of smart cities and regards it as an important strategic direction of the country's new urbanization. In 2008, IBM proposed the concept of a "Smart Planet", which quickly gained recognition and development around the world. At the same time, my country also began to explore the construction of smart cities. In 2010, the Ministry of Science and Technology and other units held the "2010 China Forum". The National Development and Reform Commission, along with eight other ministries and commissions, released "Guiding Opinions on Promoting the Healthy Development of Smart Cities" in 2014. This was the first comprehensive document that the State Council had approved that provided state-wide guidance for the development of smart cities in my nation. In 2025, smart cities will rise to the national strategic level. China will launch smart city pilots in 2021. In terms of financial support, the government has set up special funds to support smart city construction projects. At the same time, social capital is encouraged to participate in smart city construction to form a diversified investment pattern. On November 2, 2022, the National Information Center released the "Evaluation Indicators for New Smart Cities", further clarifying the goals and directions for the construction of new smart cities. At the computing level, the development of three-dimensional modelling, digital twins, metaverse and other technologies has provided important support for the construction of new smart cities.

3. Mechanisms for the Impact of Smart Cities on High-Quality Urban Development

In my country's economic development in the new era, high-quality development is a crucial theoretical and practical innovation. It emphasizes the optimization and upgrading of structure and the improvement of efficiency in the process of economic growth. High-quality development advocates the concept of green development and believes that economic activities should develop in harmony with ecological and environmental protection to achieve comprehensive social, cultural and environmental sustainability. High-quality development aims to achieve more balanced, comprehensive, and sustainable social progress. Building smart cities is in line with the objectives of high-quality development and is a crucial first step in accomplishing these objectives. The degree of urban informatization has increased dramatically in smart city pilot projects. This is since information technology and clever methods have allowed smart cities to become fully integrated into the process of building them in a variety of ways and at different scales, which has tremendously aided in the growth of smart cities. evolve. Shenzhen is a leading city in China's reform and opening-up movement and among the country's first to investigate smart city development. This paper takes the development of smart cities in Shenzhen, China, as an example to analyze the impact mechanism of smart cities on high-quality urban development.

Since the 18th National Congress of the Communist Party of China, the Party Central Committee has firmly implemented the strategy of strengthening the country through talents, optimized the talent layout, promoted talent mobility, exchanges and cooperation, and achieved remarkable results. According to existing information, Shenzhen established a non-profit social organization in 2013 to study smart cities, which plays a strong role in the rapid development of Shenzhen today. To improve its basic research sourcing capabilities, Shenzhen insists on investing no less than 30% of municipal science and technology R&D funds in basic research and applied basic research. It focuses on more than 1,000 outstanding companies in various industries of smart cities and has more than 350 experts in various industries of smart cities. It strives to serve as a bridge and link for exchanges and cooperation between scientific research institutes and enterprises and joint development of research, cooperation and development in smart city-related fields. Organizing corporate members to visit universities and communicate closely with them has greatly alleviated the loss of scientific research talents. The pace of scientific and technical innovation will be impacted by the loss of scientific research expertise, which will restrict the sustainable growth of the national economy. Therefore, smart cities can develop scientific research talent resources for high-quality urban development, and human resources can promote the intelligent transformation of industries, thereby further promoting high-quality urban development.

Clear rivers and verdant mountains are priceless resources. Shenzhen's development and protection pattern for land and space is based on the natural geographical pattern, which integrates land and sea, blends blue and green, is harmonious and beautiful, and promotes intensive and efficient production space, livable and moderate space life, and ecological. It's a lovely space. Zhao Pengfei confirmed that architectural space planning will ultimately affect the effect of urban development [4]. Rational application of space resources and coordination of resource utilization and production not only promote urban development but also improve the comfort of people's lives. Urban spatial structure is the result of the long-term accumulation of urban socio-economic development and an important configuration form of urban production factors. The condition of urban spatial structure directly affects the social, economic, and ecological benefits of the city. Therefore, adjusting and improving the spatial structure of resource-based cities and realizing the transformation of spatial structure is an important task of resource-based city planning, and is of extremely important significance to the overall transformation of resource-based cities and the sustainable development of cities [5].

Shenzhen continues to improve the entire process innovation ecological chain of "basic research + technological research + industrialization of results + technology finance + talent support", continuously promotes the mutual reinforcement of industry and technology, accelerates the cultivation of new productive forces, and has strong momentum for high-quality development. Shenzhen's success is due to the formation of an entire innovation ecosystem. This ecosystem includes numerous start-ups, incubators, venture capital institutions, and R&D centres. Shenzhen's innovation ecosystem attracts entrepreneurs and innovators from around the world, providing them with opportunities to realize their dreams. Shenzhen's incubators and accelerator institutions provide startups with a platform for incubation and growth. Institutions that support venture capital offer startups money to help them grow quickly. The formation of this innovative ecosystem has made Shenzhen a city full of innovative vitality and intelligence. Therefore, the operation model of the urban system that adapts to local conditions is the key to promoting high-quality urban development.

4. Discussion

4.1. Regional Differences Should be Considered to Develop Different Strategies

Cities at different levels have differences in resource factor levels, infrastructure, information technology, and economic development levels. Therefore, when formulating smart city development strategies, the economic development level, resource endowment and regional characteristics of each place should be considered, and differentiated development strategies should be implemented. In

more developed economies, people can concentrate on encouraging the growth of data-driven and high-tech service sectors; in less developed economies, people should prioritize building infrastructure and enhancing the industrial base while bolstering education and skill development to raise human capital levels. People will strengthen talent training in information technology, data analysis, urban planning and other fields to lay the foundation for the long-term development of smart cities. Make timely and dynamic adjustments, modifications and improvements to "smart city" planning, plans and a series of supporting policy documents, and speed up their issuance to achieve high-level integration between smart cities and various places.

4.2. Greening

The process of smart cities must incorporate the concept of sustainable development. City managers can explore new industries, develop new technologies, build green transportation, strengthen energy utilization from a smart perspective, and solve low-carbon issues in urban ecological construction from many aspects. Help build a sustainable city and achieve urban greening. Measures such as optimizing the public transportation system and building a complete slow-traffic system to encourage citizens to choose more environmentally friendly and low-carbon travel methods will not only help improve the quality of the urban environment, reduce air pollution and noise pollution, and improve the quality of citizens' lives, but also help Promote sustainable development of cities. By reducing reliance on traditional energy and reducing carbon emissions, green travel injects new green impetus into the construction of smart cities.

4.3. Enrich Urban Self-care Application Scenarios

Focusing on the fields of public management, public services, and public security, people will create diversified government application scenarios and accelerate the sharing of digital dividends by all people. Taking the needs of the masses as the starting point, it facilitates people's lives and enriches the application scenarios of public management, public services, and public security. Government departments should promptly respond to citizens' concerns about existing problems in smart city construction, promptly resolve citizens' reasonable demands, and improve citizens' quality of life in line with today's smart city concepts.

5. Conclusion

The article's study conclusion demonstrates that the development of smart cities has a favorable effect on high-caliber urban growth. All things considered, building smart cities is a useful strategy for encouraging superior urban growth. The trend toward smart cities in urban development is unavoidable. The complexity of administration will only increase in the future as cities undergo further transformation. Building smart cities facilitates high-quality urban growth and increases the effectiveness of urban administration. Government agencies should aggressively support the development of smart cities, pay attention to public concerns, put the idea of increasing the efficacy of urban administration and enhancing people' quality of life into practice, and ultimately build a more vibrant and dynamic smart city.

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