Smart City: An Innovative Understanding of Modern Society Under Sustainable Development

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ABSTRACT

Smart City has been viewed as a popular trend to describe urban development goals in modern society. It has multiple attributes such as the urban construction of artificial intelligence (AI), ecological environment protection, individual sustainable development and green economic growth. A full understanding of the connotation of Smart City in modern society will help stakeholders to design cities reasonably and indicate the development elements needed for sustainable development, which requires a comprehensive understanding of the principle of Smart City. Based on this, this paper focuses on interpreting the Smart City in modern society from the perspective of social and environmental impact, so as to make the practice of Smart City more clearly.

Keywords: *Smart City, Modern Society, Sustainable Development, Social Culture, Education, Environmental Protection.*

1. INTRODUCTION

"Smartness" has become a cosmopolitan theme of modern society with the advent of the big data era, which is reflected in industrial production, urban planning and education. While "Smart City", as the general term of city intellectualization, involves diverse connotations such as green, effective and sustainable. Never should we ignore the deep connotation of Smart City -- sustainability, which means to maintain and enhance, environmentally friendly society, green growth economic and socially sustainable development. More and more attention has shifted from simple economic growth to exploration and attention to people's inner value and spiritual needs as well as the equal educational opportunities of the entire society.

In the context of Smart City, it is inevitable to develop facilities within smart technology, but also about building sustainable connections with human beings. This study will explore the definition and characteristics based on theoretical and descriptive analysis of Smart City to guide future urban constructions.

2. SMART CITY

Smart City emphasizes urban development through the role of The Internet of Things (IoT), which was first proposed by IBM in 2009, with special attention to the optimization of resources and technology. The economy of human and society capital reflects the improvement of living efficiency by the fact that people can allocate parking spots through instant messages collected by real-time sensors in San Francisco parks [1] [2] [3]. In addition, Smart City is not an original concept emerging from of the void, but developed around a common vision of social and individual well-being. It emphasizes the re-evolution of the urban environment to alleviate the pressure caused by environmental damage and pollution, and extends to building a harmonious relationship between citizens and cities to reflect the future image of the city [4].

Smart City, along with the extension of its meaning, is still evolving into a more comprehensive principle with ecological, social, artificial and political implications [5]. However, alternative terms used to describe Smart City, such as digital city [6] [7], intelligent city [8], sustainable city [9], eco-city [10] usually narrow the scope of understanding of Smart City. Basically, it can be interpreted into two parts: society and environment.

2.1. Social Culture

2.1.1. Quality of Life

In the past, the city was merely viewed as an aggregation of human beings. They lived together as a community to improve the quality of life (QoL) [11]. The evolution from agricultural production to urban modernization has contributed to infrastructure construction, environmental protection and social care, promoted urban life and embodied personal sustainable development. To embody social caring by strengthening social values, modern artists gathered in Tokyo, Japan to organize exhibitions, offline workshops and interactive performances, and Chicago carried out social activities to help poor residents [5].

2.1.2. Modern Utopia

As a new version of utopia, Smart City has been extended into a broader representative [5] based on the three main goals of smart environment, smart technology and sustainable society [4] [12]. Smart devices such as smartphones and monitors herald the arrival of the era of big data, which have the capacity to transmit information through visualization and management systems [13].

Additionally, policy decision making will benefit from technology infrastructures, for example, the Smart Nation Program (SNP) provides all communities with online access to data collected by sensors throughout the city as a reference for the decision-making process [5]. Such humanized process will make the urban cities become more habitable and intelligent places properly known as modern utopia, which in turn marks the constant maturity of Smart City.

2.1.3. Education

Smart City not only have man-made contributions, but also have potential educational opportunities [14]. Education is a key factor in the Smart City Initiative, which is conducive to the construction of Smart City [15], pays attention to coping with and understanding social challenges [16], and is closely connected with urban smartness.

As a learning method combining tourism activities with educational practice, educational tourism is easier to realize with the popularization of extracurricular education under the background of Smart City. For example, the Comprehensive Science Center attracted numerous people who had benefited from academic performance and individual expression by accessing this center's biology, chemistry and history knowledge [16]. Therefore, the sustainable development of the public [17] was driven by a series of extracurricular activities of education tourism.

However, there is a need to recognize the educational potential of Smart City to address existing barriers that clarify the differences between digital and non-digital literate populations, as Smart City currently focuses on technology [17] and assumes that people actively use and utilize technologies [18].

2.2. Environment Promotion

Environmental issues caused by pollutants have led to irreversible damages, [13] such as the serious threat of water and air pollution to the urban environment. The awakening of environmental protection consciousness has made positive efforts to a series of public activities that emphasize the goal of sustainable development in today's society [12], which not only reflects the spirit of The Times to create a more sustainable spiritual and material life, but also reflects the spirit of energy conservation rather than the blind application of technology. For instance, creating a symbiotic structure on the edge of the city to meet food demand and reduce carbon emissions is a new way of urban environmental protection called New Urban Agriculture [4].

Energy conservation is a thorny issue that needs to be actively addressed by citizens as the basis of modern society. By 2050, urban cities will become the main gathering place for 70% of the world's population, which will greatly aggravate energy consumption [19]. Among them, the construction and operation of a large number of urban buildings where a large number of citizens live will be a key part of a large number of urban energy consumption [20]. However, the traditional approach of shifting from fossil fuels to renewable energy to reduce carbon emissions is correct, and the application of smart technologies such as automated production or new energy smart cars will also save resources in these aspects. The paradox of intelligent technologies, however, lies in whether to use smart technologies at the same time as consuming another energy source.

Besides, intelligent technologies such as three-dimensional parking and intelligent transportation system can alleviate the environmental pressure caused by population growth. However, in the application of smart technologies to urban issues, the relationship between human beings and intelligence also needs to be considered since no matter how the city evolves, human beings always participate in the creation of urban environment [4].

Hence, while Smart City actively brings benefits through the high flexibility and sustainability of equipment [22], it should also strengthen the ecological sustainability in the community structure of the Smart City system through the combination of landscape media [23].

3. DISCUSSION

In modern society, it is worthy to rethink the connotation of "smart", that is, whether and to what extent the smartness is needed, and even the degree of "stupidity" in a sense of the city [21]. Smart City should be an aggregation of systematic communities, where all citizens can spontaneously obtain happiness and have a high degree of sustainability [22] and ecological symbiosis of the urban environment [23].

4. CONCLUSION

"Smart city" is an inevitable process of urbanization with technology as the first drive of urban social and environmental evolution. Not only is Smart City underlining artificial intelligence, but it emphasizes sustainable achievements by educational tools. The clarification of Smart City makes it more clearly to construct a future world with a harmonious relationship between humans and cities through a constant accumulation of experience.

AUTHORS' CONTRIBUTION

Qinyilin Wang contributed to the conception of the study.

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