Chapter 2
The Development of Smart Cities in the World: Development Status of Smart Cities in China and Abroad

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ABSTRACT

In this chapter, the development of some typical smart cities are illustrated, and the successful experiences are summarized. The authors first overviewed the smart city development in China as the government-oriented mode. Shanghai and Hangzhou are taken as examples. They then overviewed smart city development in Europe and America. Finally they analyzed innovation is the key for smart city, including continuous innovation of AI technology and its application, innovative residents, innovative enterprises, innovative government, and innovative organizational platform.

1. THE DEVELOPMENT AND CONSTRUCTION OF GLOBAL SMART CITIES

1.1 Smart City, Smart Country, and Smart Earth

With the continuous process of urbanization, the ubiquity of information technology has profoundly influenced people's daily life. Driven by local governments and businesses, city informatization process starts from digitalization, followed by the wide popularity of network infrastructure, and has realized the development of the network. Although smart construction is still in its infancy, countries around the world continue to carry out the smart city construction practice and will gradually push smart development into a new stage.

In 2004, South Korea and Japan launched national strategic plans of U-Korea and U-Japan respectively. Subsequently, the EU developed a framework for the development of smart cities. Singapore has developed from a "smart city" to a "smart country" through a decade-long blueprint for the development

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of the communication and information industry. IBM proposed a smart earth idea in the United States. In early 2009, the newly inaugurated President Barack Obama held a round-table conference with U.S. business leaders. IBM took the opportunity to explain the concept of a "smart earth". Since then, many countries in the world have put forward their own plans of smart development. In September 2009, Dubuque, Iowa, announced with IBM that it would build "America's first smart city," a community of 60,000 people. In 2010, the US federal communications commission (FCC) announced its 10-year high-speed broadband development program to increase the speed by 25 times (Harrison et al. 2010).

In China, cities such as Shanghai and Nanjing formulated smart city plans in 2011. In November 2012, the Ministry of Housing and Urban-Rural Development promulgated the interim measures for the administration of national smart city pilot projects, which elevated smart city to the national level policy. In January 2012, the first batch of 90 pilot cities were approved. In July 2013, the China Electronics Standardization Institute released the white paper on standardization of smart cities in China. In order to guide the orderly development of smart cities, the state has introduced relevant policies intensively. The outline of China's 13th Five-year Plan clearly calls for "building a number of new model smart cities". The Ministry of Industry and Information Technology has also proposed to organize 100 cities to carry out "pilot projects" of new smart cities during the period. Multiple ministries have jointly made a smart city standard system comprising seven categories. With the widespread construction of urban information infrastructure in China, there are some improvements in urban management and public services.

1.2 Smart Supplier

The development of smart city is inseparable from the development of information technology enterprises. With the development of information technology suppliers, cities are becoming intelligent and smart. The urban brain is formed. The application of information technology has benefited the digital city. The city is becoming smarter along with the joint of Internet companies and operators and the promotion of cloud computing. With the help of AI, the development of urban informatization has been accelerated.

In 2014, Navigant, a US market consultancy agency, selected top 16 smart city suppliers from the perspective of strategy and execution. They are IBA, Cisco, Schineider Electric, Siemens, Microsoft, Hitachi, Huawei, Ericsson, Toshiba, Oracle, SAP, ABB, Itron, GE, AGT, Silver, Spring and Network.

In the past decade, the rapid development of smart city construction in China has benefited from the rapid development of some famous operators such as Huawei and internet companies including BAT (Baidu\ Alibaba\Tencent). In 2010, China was still at the transition point of digital city and smart city, and the main tasks focused on internet coverage and information digitalization construction. Huawei, engaged in telecommunications and hardware equipment, had accumulated ICT solutions and became the major operating participant in the construction of smart city. With the proposal of Internet plus, internet companies began to join in 2014. In 2014, Alibaba cooperated with Hainan international tourism island pilot zone to establish China's first digital internet city based on cloud computing and big data -- Smart Internet Harbor. Since then, Alibaba has reached cooperation in cloud computing and big data with several provincial governments in Zhejiang, Guizhou, Guangxi, Ningxia, Henan and Hebei. With the popularity of 4G, Alibaba and Tencent launched Alipay and WeChat respectively, and launched their own "city services".

In 2016, the AlphaGo's defeat of Lee Sedol made AI widely recognized. Alibaba and Baidu unveiled their "brain" development efforts that year. The development of AI technology makes it possible for cities to be truly smart. At the Beijing Summit of Computing Conference in August 2016, Alibaba

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