Research on the Construction of Smart Town Based on Artificial Intelligence Technology

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Abstract. With the gradual rise of the characteristic towns, most cities in the country are planning and creating local characteristic towns. In recent years, themes such as "Internet Plus", "Smart Plus", and artificial intelligence have been well known. People's lives are full of intelligence, networking, and high-end, and intelligence has also been incorporated into the construction of characteristic towns. Based on the analysis of the background of the construction of smart towns, this paper analyses and summarizes the nine aspects of its construction, and expounds the application of artificial intelligence technology in the construction of smart towns from the aspects of industry, life and tourism, with the hope that the builders are small. In the process of town creation, the goal of building a smart town can be established, and artificial intelligence technology can be applied as much as possible.

1. Introduction
In the era of "Internet Plus", any traditional or emerging industry must have a relationship with the Internet. Since 2010, the construction of smart cities and digital cities has become a wave of construction in various cities in China, especially under the strong driving of the Internet, cloud computing, big data, and the Internet of Things, which has boosted the construction and development of smart cities. At the same time, China's urbanization rate has reached more than 50%, and it can be said that it has entered the era of urban China. In addition, in recent years, the atmosphere of the construction of characteristic towns is in full swing, and the central government has clearly proposed to guide the construction of 1,000 characteristic towns nationwide by 2020. The construction of characteristic towns will also become a long-term direction for the development of urbanization in China.

In the context of smart tourism and smart cities and characteristic towns, the construction of characteristic towns should fully consider the application of data technology and the internet from the beginning. The construction of any characteristic town includes two small towns, which one is the town of physical space, that is, the construction of a visible physical town, and the other is the construction of a small town on the cloud, that is, a smart town. The planned area of the characteristic town is generally within the range of 3-5 square kilometres. It is a new development platform, which integrates the functions of industry, culture, tourism and community. The intelligent characteristic town construction needs to integrate the relevant concepts of smart city into the construction of characteristic towns based on traditional characteristic towns. Through various information construction, realize the intelligentization of production life and social management of characteristic towns.
2. The Content of the Smart Town

In the construction and development of smart towns, how to effectively build big data collection, mining, analysis, integration, control, management, decision-making and feedback based on the internet and “Internet of Things Plus” will support the business system of characteristic towns. The implementation path of the management system and business model. With the popularity of mobile internet technology, the behaviour of intelligent terminals as a carrier is changing the lives of most people. The arrival of social and economic development, cloud computing, big data, and artificial intelligence has caused people's lives to undergo tremendous changes. People's attention to work, study, life, and living environment is no longer limited to the basic level of food, clothing, housing, and transportation. Start to pay attention to the experience, focus on the integration of psychological and spiritual levels, and put more interest and attention on communication with the outside world, communication services, security, information decision-making, intelligent services and so on. Therefore, the management mode of the smart town will become the core foundation for the construction of the characteristic town management system and an important unit that determines the development of the smart city. Judging from the current situation, the construction of smart towns mainly includes the following nine aspects.

2.1. Smart Office Management

It mainly includes intelligent management system such as intelligent front desk management, mobile office management, conference management, enterprise informationization, intelligent health management, work task management, education and training management, and super secretarial services, and builds an efficient, time-limited space and collaborative work environment.

2.2. Smart Property Management

In view of the characteristics of smart and characteristic towns, the property management of the three districts of industry, commerce and life, will be unified effectively and separated. For example: parking lot management, closed-circuit monitoring management, access control system, intelligent consumption, elevator management, express delivery management, intelligent management of related community properties such as payment management, environmental management, security management, remote meter reading, automatic sprinkling, etc., to achieve integration of independent application subsystems in the three regions of industry, commerce and life, and centralized operation management.

2.3. E-commerce Services

The characteristic town e-commerce service mainly refers to the online shopping, the online transaction between the merchants and the online electronic payment and various business activities, trading activities and financial activities in the commercial trade activities built in the town. Related comprehensive service activities, community residents can complete the purchase of most of the necessities without going out, and build a life style for the town residents without a physical currency in the town.

2.4. E-government Services

E-government is a relatively important part of the characteristic towns. It needs a government service system that effectively interfaces with the relevant functional departments of the local government. In general, the government will effectively integrate the online service system of relevant departments related to industry, commerce and residential groups. Within the township, and access the unified e-government system of the town to facilitate the relevant personnel in the service town, such as press release system, service management system, policy and regulation release system, user service and management system, personnel and file management system, welfare and housing provident fund management system, entry and exit system, etc.
2.5. Smart Tourism Management
Smart tourism is the use of mobile cloud computing, the internet and other new technologies, with portable terminal internet access devices, allowing visitors to actively perceive travel-related information, and timely arrange and adjust travel plans. The town's smart tourism is mainly composed of three core functions, namely tourism service, tourism management and tourism marketing. Smart tourism is to enhance the tourism experience and tourism quality through information technology from the perspective of tourists. It can help visitors to experience smart tourism in the whole process of tourism information acquisition, tourism planning decision, and travel product reservation payment, enjoyment of tourism and retrospective evaluation of tourism. The main functions include information, routes, scenic spots, navigation, leisure, catering, shopping, transportation, hotels and other functions, together with the latest travel information, scenic spots and event information, self-driving tour routes, business promotions, town experience activities table and other information.

2.6. Smart Home Management
Mainly refers to the residential section supporting the characteristic towns. It is a residential platform, which combines construction, network communication, information appliances, equipment automation, system, structure, service and management. It is efficient, comfortable, safe and convenient. Through the internet of things technology, various devices in the home connected to provide certain control functions, such as home appliance control, lighting control, telephone remote control, indoor and outdoor remote control, anti-theft alarm, environmental monitoring, infrared forwarding and programmable timing control and other functions, which are integrated management with the town's overall intelligent system.

2.7. Information Exchange Management
It mainly aimed at the daily information exchange platform of people engaged in various industries such as industry, commerce, residence and tourism in the town. The purpose of information exchange service is to create more meaningful and meaningful town life and increase residents' participation in town life. To enhance the sense of belonging of residents and create a warm and harmonious town environment. Through this service, residents can not only discuss, share their experiences, make suggestions online, but also organize cultural activities online, participate in town building and neighbourhood interaction, and participate in volunteer activities.

2.8. Medical and Health Management
The town's health care includes the health facilities in the township, providing the necessary medical care, managing the health records of the town residents, reminding residents of regular medical examinations, and providing home care and home help for residents in need. At the same time, the system will also dock with the surrounding hospitals, providing online appointments and other services.

2.9. Domestic Service Management
The town's housekeeping services include babysitters, hourly workers, new moons, etc., as well as services such as washing services, fruit, catering, farmer's market distribution and maintenance, providing educational counselling and interest classes for the children of the town's work and residents.

3. Application of Artificial Intelligence in the Construction of Smart Town
Building a smart town is a huge and complex system project that requires strong support from modern information technologies such as the internet, the internet of things, big data, cloud computing, mobile Internet, and artificial intelligence. At present, the rapid development and wide application of artificial intelligence technology will promote the construction of smart towns and the human world into a new era. Artificial intelligence can apply to the following aspects in the construction of towns.
3.1. Industrial Intelligence
A core element of a characteristic town is the industrial carrier. The main industrial goal of its development is the country's emerging strategic industries, including new energy, internet of things, internet, finance, culture, design, education, etc., all of which are biased towards wisdom industry. At present, there are also artificial intelligence industry towns in China. For example, on June 29, 2017, Tianjin Dongli District signed an agreement with the domestic artificial intelligence industry technology innovation strategic alliance national to establish an artificial intelligence town. November 29, 2016, Heyuan Municipal People's Government signed a contract with iFLYTEK to rely on iFLYTEK's international leading technology and achievements in the field of artificial intelligence to create an "artificial intelligence town".

3.2. Wisdom Life
Firstly, smart homes can better enhance the safety, comfort and cleanliness of modern homes. For example, we can use artificial intelligence technology to control the opening and closing of doors and windows, which will make it easier for us to adjust our home environment, thus providing a fresher and more comfortable environment for our lives and rest. Based on artificial intelligence technology, the wireless sensor device can realize the function of real-time monitoring, sensing and collecting information of various environments or monitoring objects through various integrated micro sensors, thereby ensuring the safety of the housing. Solving the user's home-to-home intelligent system by means of networking or the like Remote query and control issues. The application of artificial intelligence technology can solve many problems in life largely, and the development of smart home is an irreversible trend.

Secondly, in terms of travel, artificial intelligence technology can also play a good role. The National Highway Safety and Transportation Authority in the United States has recognized the unmanned technology. NHTSA stated that according to the laws of the federal government at this stage, Google's driverless vehicles could see as driven by a "driver" during their driving. For example, visitors can visit the town by car driving, saving time and quickly sending them to their destination. Finally, in medical education, if your wearable device or artificial car finds you have a fever, artificial intelligence technology can realize automatic appointment registration, and then automatically send you to the hospital, then there is a smart doctor to help you diagnose.

3.3. Intelligent Tourism
First, artificial intelligence is conducive to the collection, search and push of tourist information. Using artificial intelligence technology are comprehensively collected the basic information of the characteristic town, the tourist evaluation information, the personalized travel schedule information of the tourists and the transportation service information of the tourists during the journey, and then the information is ranked, and the personal needs of the tourists are grasped through the analysis of big data. Based on the tourists, the most relevant attractions and traffic information will introduce to the tourists according to the specific conditions of the tourists. In addition to the information on the tourist attractions, the tourists can also get the latest travel information and personalized recommendations.

Second, promote the intelligence of the tourism interpretation system. On the one hand, based on natural language processing and speech processing translation software provides more convenience for mass outbound travel. On the other hand, with intelligent voice technology, the robot intelligent voice communicates with tourists, providing visitors with intelligent navigation and restaurant recommendation, weather forecast and reminder settings.

Third, promote the intelligence of the town tour planning. In real-life tourism activities, people often use the line search function in the electronic map service to obtain traffic suggestions by inputting the originating point and the ending point. However, because the transportation options in the actual travel process face with many routes such as flights, ships, trains, subways, cars and self-driving tours, how to choose is more difficult. Now with the development of artificial intelligence technology, travel route arrangements require smarter planning, reasoning and problem solving techniques, and new demands will drive the growth of new travel route planning companies.
4. Conclusion
Smart Town is a new concept of management, making full use of next-generation information technology such as Internet of Things and cloud computing, as well as artificial intelligence technology to provide convenience and wisdom for employees, residents, living and tourists in the characteristic towns of living environment. The internet and the Internet of Things era are changing not just technology, but our way of life. The construction of a smart town requires not only Internet and Internet of Things technical support, but also the support of cloud platforms and big data. In the future, it is inseparable from the support of artificial intelligence, which will bring unprecedented life experience. Although the current smart town is still a relatively unfamiliar model for most people, there are still many problems in the construction, but it is an unstoppable trend.

5. Acknowledgement
Shandong Provincial Social Science Planning Research Project "Study on IP Construction of Characteristic Towns in Shandong Province", Number: 18CQXJ36

6. References
[1] Mathur, S., & Modani, U. S. 2016 2016 IEEE Students’ Conference on Electrical, Electronics and Computer Science (SCEECS)
[2] Jara, A. J., Sun, Y., Song, H., Bie, R., Genooud, D., & Bocchi, Y. 2015 2015 IEEE 29th International Conference on Advanced Information Networking and Applications Workshops
[3] WANG Fei;SHAO Lei 2017 Development of Small Cities & Towns 6 p35
[4] VM Tshiani, M Tanner 2018 Interdisciplinary Journal of e-Skills and Lifelong 6 p134
[5] Lanza, J., Sánchez, L., Gutiérrez, V., Galache, J., Santana, J., Sotres, P., & Muñoz, L. 2016 Energies 9(9) p719