

Thinking about the Construction of University-based Smart Communities

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Abstract: With the development of intelligent mobile terminals, flatness and intelligence have become the global development trends, informationization and digitalization are helping the digital management for a matrix of urban communities and fine services, and university-based communities, as a special type of communities, have a good background to carry out smart community construction. How to rely on university resources, use new technology to build a smart community, improve the level of community service precision, build a new governance mode of smart community and promote the modernization of community governance capacity have become important issues we need to think about. This paper takes a university community in Beijing as the research object. By analyzing the community population structure, formulate a personalized smart community construction plan based on the Internet of Things, explore a new governance model for smart communities, and improve the refinement level of community governance. This research has important theoretical and practical significance for building an information-based, digital and resident-friendly community.

1. Characteristics of University-based Communities

University-based communities are special types of communities where universities divest themselves of social functions and transfer themselves to community management. Take a university community in Beijing as an example, the combined population of the community is nearly 10,000 people or so, with nearly 40% consisting of families of retired employees and other social people ^[1].

The residents in the community are mainly composed of families of university workers and retired old cadres, who generally have higher education level and professional basic knowledge, better learning ability, more popular use of intelligent mobile terminals, higher acceptance of new technology, and at the same time have a relatively strong sense of democracy and social responsibility and a stronger willingness to participate in community construction. These characteristics determine that university-based communities can better carry out smart community construction ^[2].

2. Main Content of Smart Community Construction

In the formation and development of communities, media communication has a natural and close connection with communities. Currently in the community the traditional media represented by the community newspaper and the network media represented by the community WeChat group and public account are profoundly changing and influencing the daily life of the residents ^[3]. The traditional media represented by community newspaper mainly carries the communication function that does not have timeliness such as government affairs disclosure, work summary, etc. In the current situation, with the rapid development of mobile terminals, especially in the prevention and control of the COVID-19 epidemic in 2020, there are high requirements for the timeliness of information transmission, the traditional paper media can no longer meet the requirements, and the network media gradually assume an important role in the process of information release and transmission. Using network media and Internet of Things to create a smart community platform and open a new scene of services for residents ^[4].

The main contents of the smart community construction are the construction of comprehensive information release platform, the construction of WeChat public account system and the personalized smart construction for the characteristics of the community. Through the combination of software and hardware, an omnibearing comprehensive information service platform is created. In terms of the main attributes of the community, the community has gradually developed into a comprehensive information body for residents' services. The first thing that needs to be solved is the problem of information asymmetry in the community. Starting from two aspects, WeChat public account and outdoor information screen the combination of hardware and software breaks the information reception barrier of most people. First, relying on the existing public account platform in the community, we can further integrate the existing resources and create a multi-dimensional network service platform covering government affairs, services, education and mutual help in life through government affairs disclosure, opening online activity registration and personal appointment channel etc. For those who are not proficient in using smartphones, the problem of poor information reception is solved by installing outdoor information screens in areas with long residence time and high population density in the community.

In response to the characteristics of university-based communities, there are more than enough university student volunteers. Relying on the registration of volunteer activities in the public account, university student volunteers can be recruited to realize the linkage between the university and the community, and carry out offline volunteer activities for senior citizen groups after school hours. University students can popularize the use of smart phones to senior groups, and at the same time, they can invite teachers and students of related majors to customize smart elderly assistance devices for the difficulties in the lives of the elderly, and further promote the construction of smart communities ^[5].

"Internet of Things + community" helps to build a "personalized" smart community. With the Internet of Things, big data and other new information technology as the core of the smart community, not only the requirements of the construction of smart community governance model are effectively achieved, but also the level of community precision services can be further enhanced. Personalized construction is for the community's own attributes, for example, in the community people over 60 years old account for about 30% of the total population. In view of the high degree of aging, it is necessary to make a corresponding smart construction program to help the elderly, through the application of new Internet of Things technology to achieve smart communities to help the elderly ^[6]. In response to the actual needs of the elderly, we can start from the following three aspects:

- (1) Issuance of smart bracelets with one-touch alarm function;

There are often cases in the community where the elderly fall down and can't stand up on their own. By wearing a smart bracelet to achieve a one-touch alarm and send the location to a pre-set emergency contact, so that the elderly can get timely assistance.

(2) Health huts to track health status in real time;

The health hut is equipped with blood pressure monitor, blood glucose meter, oximeter and other related home medical equipment to obtain the daily physical condition of the elderly in real time by connecting to a computer and giving appropriate medical advice.

(3) Voice call takeaway

For the lone and widowed old people in the community, the elderly with difficulty in walking, etc., grocery shopping has become an urgent problem in life. Through the intelligent voice call system, they can dock with supermarkets and vegetable stations in the community to achieve voice orders, and the delivery man will take orders for the elderly home service.

3. Need for Smart Community Construction

3.1. In the Context of Normalized Epidemic Prevention and Control, there is an Urgent Need for Communities to Promote Smart Building

In daily work communities need to update the national medium and high risk areas in real time and notify residents, as well as screening personnel in relevant risk areas. If the traditional way of posting paper notices is followed, it is easy to cause problems such as heavy workload, untimely information release, and defacement and loss of notice sheets. The epidemic screening work needs to be fast and accurate, and relying on the public account and outdoor information screen can realize real-time updates to release notices and push them to residents. At the same time, the public account can reduce the unnecessary contact through the network appointment function, and completely open the "last mile" of service for the residents.

3.2. Promote the Construction of Smart Communities and Strengthen the Effectiveness of Administrative Operations

For communities, actively promoting the construction of smart communities can significantly improve the intelligence of infrastructure, promote and expand the scope of government information sharing, reduce administrative costs, enhance the effectiveness of administrative operations, and promote the modernization of community governance systems^[7]. In the community in this paper, for example, the ratio of grid managers to residents is close to 1:500, and each grid manager will have to face and deal with the daily affairs of nearly 500 residents, especially the screening of personnel during the epidemic and the screening of the vaccination status of COVID-19 are very heavy tasks for community staff. Strengthening the construction of smart communities is conducive to reducing the workload of community personnel, improving the working conditions of community organizations, optimizing the community self-governance environment, enhancing community services and management capabilities, expanding the content and fields of community services, and laying a good foundation for the establishment of a diversified and multi-level community service system^[8].

3.3. Smartly Help the Elderly to Innovate New Scenes of Elderly Services

For the society, it is of great significance to pay attention to the elderly group through intelligent means, to use technology to better serve the elderly and to realize smart help for the elderly, both for social stability and development. At the same time, it explores a new model of home care, which

follows the trends of economic and social development and has a better prospect ^[9].

4. The Main Problems and Solutions Facing the Construction of Smart Communities

The subjects of smart community construction are lack of effective consultation and cooperation. The smart community is a complex system project, which cannot be separated from the guidance of administrative subjects and the construction of market subjects. Administrative subjects mainly refer to relevant government departments, subdistrict offices, etc. The government needs to take a leading position in the construction of smart communities, establish a unified government service platform, and realize the sharing of resources and data among communities. Market subjects, on the other hand, provide advanced technical support, which is used to help community workers reduce unnecessary workload and improve the efficiency and service quality of community workers. Taking Lanzhou client smart community in Gansu province as an example, the government takes the lead in gathering the latest information of 54 streets in the main city of Lanzhou, dynamically rolling updates, fully realizing information sharing, while adding functional modules such as convenient services, suggestions, and square stalls to open new scenes of community services for residents.

There is not enough Internet expertise among community staff. For the traditional community management work, the requirements for Internet technology are not high. However, in the process of building a smart community, community workers are not only required to have certain management skills, but also to have a keen sense of the Internet, a strong ability to accept and comprehend new technologies, and to combine them with community governance, and the lack of such talents seriously restricts the process of smart community ^[10].

5. Conclusion

Taking a university community in Beijing as an example, this paper expounds the main content of smart community construction from five aspects. According to the characteristics of university-type communities, this paper proposes a comprehensive information release platform construction plan, and relies on the Internet of Things to develop personalized services. The realization of smart community construction can reduce the cost of community management, improve the intensification and intelligence level of infrastructure, enhance community service and management capabilities, expand the content and fields of community services, and build a diversified and multi-level community service system. Lay a good foundation. In addition, this research is of great significance for building a digital, intelligent and information-based community. At present, the construction of smart communities lacks unified policy guidance and professional community construction talents. In the future, it is necessary to strengthen policy guidance, cultivate a professional team of community construction talents, and improve the social treatment and social identity of community workers.

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