Neighborhood Communication Design in the Smart City

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Abstract. Neighborhood communication is concerned not only by socialist, but also by architects and planners. In the smart city trend, digital technology has changed the way of our living; it can bring some new opportunity to solve the problem in neighborhood communication of the industrial age. Base on the analysis of the concept and problem of neighborhood communication, and the change of neighborhood communication in the smart city age, this article summarize three methods to improve the quality of neighborhood communication by architects and planners, including: reality-based network, digital communication space and the virtual community based on the mobile internet.

The Concept of Neighborhood Communication

Neighborhood communication can reflect the spirit of residents and the identity of belonging from their communities; it's the representation of social values and social ethics. So how to improve the neighborhood communication is not only the task of social scientists, but also the task of architects and planners.

In the modern society, most of the people's daily lives are conducted in the living area, so community is one of the basic social relations as home, work and study. The neighborhood relationship is the important part of social relation system. For example, in the living environment, the greatest demand for human is the mutual help of neighborhood, social communication and the return to nature. These requirements are essential for a civilized society human activities. People cannot exist as the isolation from in the social, in other words, if the social communication disappears, there is no longer has necessary to build a city.

In the smart city age, digital technology has changed people's lifestyles and constitutes, and it will be a huge impact on the relationship of neighborhood communication. Study the essential change of this development, is the basis of urban design and community planning practice.

The Problems of the Contemporary Neighborhood Communication

The industrial development process in the mid-20th century has brought the rapid expansion of population and cities, density, resulting in residential development in the high-rise buildings. Blooming of the concrete forest brings the feelings of depression, loss of intimacy and lack of life breathe. The consequences of urban functional differentiation are the value reduction of neighborhood and the neighborhood communication.

In fact, from the study of traditional neighborhood spatial structure, it can see that the residents of the neighborhood relations happen in the semi-private space development and develop in the semi-public space. Semi-private space and private space are interspersed with each other in the visual sense. For example, Shanghai, neighborhood space is actually an interspersed space to bring great impact on people's communication. As the residential alley space has a strong centripetal force for each household. All the tenants are facing alley and make it become a public space. Also, because the alley is

enclosed together, it looks like a closed city within a city. Be separated out of the din in the crowded lane, with the strong sense of enclosure, sense of place and identity, the residents would seem to have entered the alley of the home sense. Because the room lighting of residential alley is often inadequate, the living condition is too crowded; the closed space within the appropriate spatial scales became ideal outdoor venues for residents. As a result, many family working originally belonging to private activities such as laundry, cooking, dining have been moved to the outdoor public space, and the alley lane road become a truly public living room. Although the cost of loss of family privacy, but it has also strengthened the alley houses had been intimate with the kind of family-like neighborhood. But in modern settlements, the separate of private space and public space is very clear. In such a state, it is not easy to from a space for good neighborhood communication.

In urban planning, improvements are taking to repair the damage of neighborhood communication. But because of the modern settlement of their private space and public space is not completely connected, the way which architects tried to create for communication often become a ornament, the residents still didn't have a media to improve the communication. As the inhabitants do not know each other as well, the distrust of various reasons is making the residents of the neighborhood being in an indifferent state. At the same time, social scientists were making efforts to create a community culture to solve these kinds of problems. However, there are still cultural communications drawbacks between people because of the time and distance. And for the regularity of modern work, residents can have time to participate in community cultural in weekends only; the effect is far worse than the traditional daily communication. But in the internet age, the change of communication channels and methods has brought a turning point for these phenomena; we can improve the quality of neighborhood communication by the digital way.

The Changes of Neighborhood Communication in the Smart City

In the past 20 years, it is the age of information explosion and revolution of network technology. As the industrial revolution, information revolution has brought new understanding in all aspects of society. The way of the industry concentrated formation in the city from nineteenth-century is over, in the 21st century, the world's industrial base on the large-scale decentralization, streamlining, automation and information technology. Smart city strengthens the communication between people and information with more choices. Telephone, mobile phone, TV, Internet, etc. are shortening the distance between people, the neighborhood communicate become more easily. In particular, the widespread use of the network make the space and time distance of the world is continual to be ignored. Every changes in the history were regarded the world to become smaller, and network is acute than ever. The information society is based on the basis of the network, the network has been closely linked with all aspects of daily life, and the network has touched every corner of society.

Development of network technology will make people fear that too much reliance on computers will induce the interpersonal relationships to be more of apathy and alienation. Over-reliance on digital technology to make communication between people may confine them in the virtual world, but isolate them between the real lives around. Extension of the network continues will make the functional boundaries fuzzy between machines and human, and even become the semi-mechanical products on the network connection. The future of networks and artificial intelligence become the focus of controversy.

But after some time of development, we found that the network does have its negative effects, but its positive effect is more obvious. Networks develop new channels and methods for people to improve the communication. It did not make the links weaken between people and people's natural desire. In contrast, based on the network, people have more ways to know the world and people around them, it make a more huge connection of society communication. People's hearts are more eager to the natural interaction between people, more reluctant to the face to face interaction even thought the digital way. The neighborhood communication for interaction between residents, the emotion of face to face information contacts is not substituted by the network, but encourage by the network. Study of

biologists found that the people communication is not only the feeling of the exchange, but also the hormones information exchange. Access of information exchange is also making a psychological suggestion and natural needs for people.

Nowadays, the new communication way of network, such as Facebook, Twitter (or Weibo), Wechat (or QQ) is making a great changes in the society relationship. In urban design and social planning, it should study on the ways to improve the neighborhood communication through such technologies.

The Design Strategy to improve Neighborhood Communication in the Smart City

Reality-based Network for Neighborhood Communication. In the network society, what we need is to create a more emotional affinity interaction with place, to strengthen the natural link between neighborhoods. Digital technology has a great influence for strengthening the community based on the reality, such as the establishment of community clubs of internet. For an example, the Lijiang Garden in Guangzhou Panyu have the highest rate of residents using the internet access, the opening broadband network is more than 30% (the general rate of residential broadband network is not up to 10%). The residents of the settlements use the website initially, including BBS virtual communities, online chat rooms to communicate with each other. When the network communication became better, they are more eager to the face to face communication. Thus, settlements established a Lijiang Garden Friends Club and develop activities once a week. The response had been very strong, more than 30% internet users in Lijiang garden and some residents in nearby residential areas had participated together from the age of 70 years to 5 years. Many users meet at the first time through the network, and expand the scope of relationship through the friends club. The neighborhood communication has been greatly improved. The media network has received an unexpected result and it is the result that the organizers didn't expect before. From this example, we can see that through the information technology, it is a efficient way to approach a reality-based network to enhance the neighborhood communication.

Digital Communication Space for the Network Group. Through the settlements network, the residents can communicate by Wechat, QQ and other methods. For some level, this is the process from strange to familiar. The network pulled into the relationship between people, and the network establishes a semi-private or semi-public space in the virtual space. This virtual public space can be instead of realistic sense of physical space in neighborhood communication between people. For example, the Wechat and QQ group of the community website of settlements has actually become the first space for internet users of residents to know each other and understand each other's. In fact, when people know each other, they would desire to further communicate in physical space, so we should also focus on the communication space for the reality-based network. In this case, the facilities and open space in the settlements will play a significant role in supporting, such as friends club, playground, restaurant, gardens and so on. Therefore, the architect's task is to consider how to provide a better environment of communication space for residents.

In the smart city, neighborhood relationship of people would change with the advent of new technologies of network. The evidence is the invention of Facebook and iPhone. New way of digital life will undoubtedly help to create a pleasant atmosphere in the neighborhood communication. New internet infrastructure (such as 4G, WIFI) in community and business groups will begin to provide the new services to meet the requirement of working and living. This will lead to different types of building and urban layout, and take advantage of small-scale construction opportunities and become more responsive to people's changing needs. One example is to renaissance the convenience market of current city, make it has more multiple uses, such as communication center, remote office, convenient services and entertainment space. Community identity, design and quality living environment is an important regional feature for urban planning, and the methods of design would be change according to the communicate behavior change in the digital network.

Virtual Community Based on the Mobile Internet. For the remote residents in reality, it is available to build the neighborhood on the virtual community of network expansion. Virtual community on the Internet will make people re-formed into a close and special relationship of mutual support groups. This requires a management system for internet users to work; in order to make users can assume the responsibility and obligations of internet community. Virtual community may become a new utopia, and our sociologists have noticed this issue and strengthen the ethical research of virtual community continuously. The following example is a network of rules in the mobile internet game. We can see the communicate concerns by the games inventor.

In the mobile internet game of community, we can find a role such as encourage players gathering. When the gathering is increase to a certain number of players, it can be named village, inhabited by the players set their own name, and provide the village upgrades. Upgrades can add a little entrance signs, central fountain, tables and chairs, or apply for a special upgrade space, providing liquor and other drinks for guests, etc., The conditions for promotion and type can be discussed, if the player moved, the number declined, the village will be downgraded. The building can be upgraded because it does not provide fences, and save resources can be part of the construction for the village, and strive to do more with less. It can sell the village to establish a trade union organization of the city and ancillary facilities. As the village inhabited by players who are more likely, it can form a truly healthy neighborhood. As this example of games, we can see the roles of virtual community is similar to the real society, so the architects and planners can also use the principle in reality to build the neighborhood communication based on the mobile internet.

Summary

There is a view that the relationship between the networks will make people more indifferent, people do not wish to communicate but choose the human-computer dialogue. In fact, this is a misunderstanding of the network, or inadequate understanding of the network. As a new technology, network will not rule mankind and we should not fear and exclude it. On the contrary, human being should make better use of the information technology for us.

Meanwhile, the interaction sites in the internet age have more room for development. Base on the web, people will have more time and effort to contact with people and nature. E-commerce, home office, the internet community will in some extent weaken the regional, urban nodes will no longer to be the supermarket and the highway connecting will disappear. Changes in the form of the city, the new way of the community is built on the basis of the network. This diversity of modern city is to be more rich features to the performance environment. Residents shopping and daily office life will not leave their communities, and contact with the world using the internet to exchange information. People will no longer to build the working- residential-shopping flow of the communication form of the past time. The neighborhood communication will be more convenient, fast and efficient in the smart city.

Acknowledgements

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