

Residential and Care Model for Elderly People Based on “Internet Plus”

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Abstract—China's aging tendency is becoming increasingly severe, which leads to the embarrassing situation of "getting old before getting wealthy". The traditional pension model does not comply with the need of today. Relying on "Internet Plus", it can efficiently integrate information and resources and meet the personalized needs of elderly care. It can reduce the operating cost of community elderly care facilities and lay a technical foundation for providing better services for the elderly. The key for providing help for the elderly in the future is to effectively integrate technology, make good use of technology, and improve the efficiency of elderly care services. The effective integration of traditional home care, community care, intelligent elderly care equipment and medical resources to create the "Internet Plus" community intelligent pension service mode has become the future development trend of aging care. The research method of this paper is to collect literature and conduct theoretical research on community pension firstly. Secondly, the combination of suitable aging design and "Internet Plus" is elaborated through research. Finally, this paper states the current level of intelligent technology in old-age care and looks into the future by understanding multiple levels of "Internet Plus". The development of community intelligent pension mode and content under "Internet Plus" has enormous development potential. In addition to the characteristics and functions of ordinary houses, residential design of endowment housing has higher requirements for comfort and personalization, and the people-oriented is the principle of design.

Keywords—Ageing tendency, "Internet plus", community intelligent elderly care, elderly care service model, technology

I. CONCEPT OF "INTERNET PLUS"

As an emerging concept, "Internet plus" is the product of the time, which has a lot of connotations. "Internet plus" specifically refers to the use of the Internet to upgrade traditional industry, changing the way of realizing the industry production elements configuration and integration, by optimizing the factors of production, update the business system, reconstruct business model approach to realize the economic transformation and upgrade [1]. The so-called optimization of factors of production refers to increasing the interconnection between different factors of production through the Internet, so that the required resources can be obtained beyond the limitation of time and space, which belongs to the initial stage of "Internet plus". Updating business system is mainly reflected in the fact that in order to realize the mutual allocation of resources, a series of corresponding supporting facilities and services are required, so that the business system

can be updated and upgraded. Finally, the transformation and upgrading of the economy will be achieved. To be specific, "Internet plus" has the following characteristics: first, cross-border integration, the use of the Internet thinking concept and technology to transform the traditional industry, to achieve reform and remodeling integration. The second is innovation-driven, which mainly reflects the transformation of the model of economic growth and replaces the extensive resource-driven mode with Internet thinking. Third, it reshapes the structure. The Internet breaks the original social and economic structure, changes the business model, and gives consumers more say, putting satisfying the needs of consumers in an important position. Finally, respect for human nature, which is the root of the Internet's strength. The Internet not only respects users' experience and human nature to the maximum extent, but also pays more attention to people's creative play and encourages the development of innovative thinking.

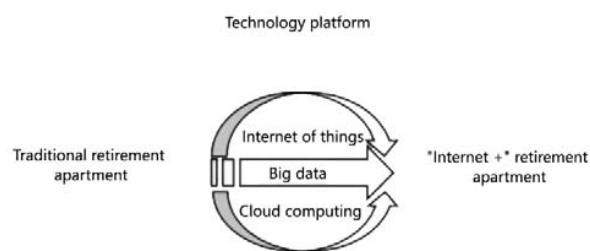


Fig. 1 “Internet plus” pension model

II. BASIC THEORY

A. Maslow's Hierarchy of Needs

According to Maslow's hierarchy of needs, in a certain period of time, when the dominant demand of a certain level is satisfied, the demand of a higher level will appear. And Maslow believes that the needs of the degree of satisfaction with the environment are significant [2]. For example, in developing countries, people pay more attention to the physiological and security needs such as food and clothing live line. With the development of social economy, because of people's material demand has been satisfied, they will pay more attention to the needs of the spiritual level. Physiological need mainly refers to the material needs necessary for human survival, which is the strongest and lowest level of need. At present, the physiological needs of the elderly in China can be basically met. However, for those who have lost children and the elderly with low-income, especially the low-income empty-nesters, the government and society need to help them solve the most basic needs of food,

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clothing, housing, transportation and other aspects.

Safety needs include personal life safety, stable family life and guaranteed future life, etc. Elderly people have a high demand for safety due to their age and poor physical resistance, so home-based care services should focus on the health and safety of the elderly. Social needs mainly refer to that, as social people, we are eager to get emotional interaction from the people around us, and we hope to find a sense of belonging and emotional and warm needs in the group. Home-based elderly people tend to feel lonely, so home-based elderly care services should pay more attention to the emotional needs of the elderly, strengthen the communication and exchange between the elderly and their neighbors and relatives by organizing community activities, and eliminate loneliness in life through mutual care and care, so as to live a more quality life in old age.

Respect needs can be divided into self-respect and other people's respect. After retirement, the economic and social status of the elderly has also changed, and they will pay more attention to the respect of others. Therefore, the respective needs of the elderly cannot be ignored when providing home-based care services.

The need for self-actualization refers to the realization of one's potential ability and value and full recognition by the society. The elderly walked off the job, with physiological function degradation, thinking ability, easy to find the purpose of life and value, therefore, our family endowment service should attach importance to the cultivation of interests of the elderly, to develop suitable for their activities, or something for the old jobs, let them realize their value in activity and employment. Therefore, under the social background of rapid economic development and silver wave, the home-based care services we provide should meet the needs of different levels of the elderly according to their specific conditions. While paying attention to the physical needs of the elderly, the spiritual needs of the elderly cannot be overlooked.

B. The Theory of Welfare Pluralism

In 1978, the concept of "welfare pluralism" first appeared in the Wolfender's report "the future of voluntary organizations", which argued that voluntary organizations should be included in the providers of social welfare, that is, welfare providers should be diversified; [2] however, the "welfare pluralism" in this period lacked a clear definition. Rose (1986) was the first time scholar to clearly define "welfare pluralism". He believed that the family, the market and the state should all become the main body of social welfare supply. [3] The author believes that social welfare in welfare pluralism can be expanded from both sources and contents to ensure the sustainability of social welfare. The expansion of social welfare sources means that the government's single dominant position in social welfare should be transformed into the collective responsibility of the state, market and society. The sum of welfare provided by the state, market and society is the total social welfare. The government is no longer the sole provider of social welfare, enabling it to distribute social wealth more reasonably and easing the pressure on the national welfare system. The market uses market-oriented means to conduct collective financing, provide

funds and technical service support for social welfare, and ensure the sustainability of social welfare supply. Families, communities, and social groups mainly provide social welfare. The relationship between the market and the state is complementary and complementary, rather than competition and contradiction. [4] The expansion of social welfare is mainly to enrich the content of the welfare system, transforming the original single form of economic subsidies into a diversified welfare system, such as providing policy support, medical care, psychological counseling and other forms of social welfare. Nowadays, under the influence of aging, as well as the development of society, the elderly people pursue higher life quality; the service content is also more diversified. The service content mainly covers the life care, domestic services, rehabilitation care, and spiritual comfort. Therefore, the content of the social welfare should also get the corresponding development, meet the demand of the elderly multi-level and comprehensive home endowment service. Based on the welfare pluralism theory, we can understand that the "Internet Plus" home endowment service mode of the building is not the government's responsibility and obligation unilaterally. It needs national, corporate and the common social efforts, distinct responsibilities of each main responsibility body, and pay attention to the collaboration of each other. Only in this way can make the "Internet plus" home endowment service mode healthy and sustainable development.

III. "INTERNET PLUS" PENSION CASE

A. Methods of Daitian Zehui Pension Service Center

First, the grid of home-based care services should be extended to cover all areas. The comprehensive information service platform of "Internet Plus home-based care for the aged" is equipped with a 24-hour service hotline and health files of the elderly in the village. The elderly by using the center of SOS smartphones, to achieve "one key calls" can enjoy high efficiency convenient door-to-door service, formed to a call center, fragmentation focus on management, centralized scheduling, the kind of service network. Second, we will promote the diversification of home-based elderly care services to achieve all-round supply. All the public service staff in the local community is gathered to provide on-site emergency rescue and referral services for patients with severe diseases. It provides health examination, purchasing service, housekeeping service, vacation care, chatting, and regular visiting service for the elderly. Meanwhile, we will promote the concept of "time savings bank", give full play to the role of pension volunteers and other organizations, and make great efforts to guide all the people to participate in pension programs. Third, we will make home-based care services more refined and ensure oversight throughout the process. The platform also established a service quality tracking and supervision mechanism. After the end of each service, door-to-door service personnel scans the QR code of service objects and transmit the service situation to the supervision system of the civil affairs bureau and the management system of pension service center. Through the service object feedback evaluation, service center returns visit

survey and other forms of evaluation and scoring, service providers or service personnel of poor service quality resolutely gives search method, and timely expansion of new service providers and service personnel. At present, the center has been certified by ISO9001 quality management system.



Fig. 2 Staff of home care information service center of Daitian Zehui is tracking the elderly service objects



Fig. 3 Doctor providing rehabilitation and nursing services

B. Wuzhou, Guangxi "Internet Plus Community"

Wuzhou, Guangxi is developing "cloud family" community home-based care services. Wuzhou Guangxi is one of the earliest cities in the region to experience aging. By the end of 2015, there were 486,000 people aged 60 or above in the city, accounting for 14.2% of the total population [5]. To effectively deal with the crisis of population aging and solve the problem of community pension, the Chinese government actively promotes the construction of "Internet plus" community and family pension service system. The local government strives to build a perfect pension service system, which is reflected in the continuous construction of "Internet Plus technology" and "cloud" family service platform. Based on "family information database", it provides "emergency rescue, health management, life care, rehabilitation care" and other services. Social service resources have been effectively integrated. The platform has established a four-level service system of "region, street, community and family". A three-level service mechanism has been built on the basis of "social workers, volunteers, enterprises and children". Mobile Internet technology is used to develop a medical service system, enabling the elderly to obtain services only available in nursing homes at home. Wuzhou cloud family service platform cooperated with Wuhan

University to establish the "Internet Plus" pension service system based on big data. Wuzhou cloud family service center makes full use of advanced technologies such as intelligent communication, mobile Internet, healthy Internet of things and big data, and focuses on building "smart micro-home" cloud platform of "cloud family". The technology combines web service with door-to-door service. It provides essential home-based care services such as emergency rescue, nursing, health management, life care, rehabilitation nursing, and spiritual comfort for the elderly at home in the community.

C. Wuhan "Internet Plus Home Care"

Wuhan "Internet Plus home care" provides three assistance and one nursing services. Wuhan was approved by the central government to support the first batch of pilot reforms of home-based and community-based elderly care services. Wuhan reasonably and adequately uses various resources to promote the construction of "Internet Plus home-based care for the aged". Wuhan's "Internet Plus home-based care" mainly includes three types of assistance and one type of care (meal assistance, cleaning assistance, medical assistance, and remote care). The goal is to provide home-based care for the aged with a radius of less than 1 km in central urban blocks by the end of 2020, and to form a model of "Internet + home-based care for the aged" in Wuhan.

IV. THE EXPERIENCE AND INSPIRATION OF "INTERNET PLUS" HOME-BASED ELDERLY CARE SERVICE MODEL

The above "Internet Plus" pension cases have the advantages of overcoming the barriers of time and space. The use of Internet information technology and traditional family care for the aged are in line with the needs of the state to guarantee the life of the elderly and enrich the basic health needs of the elderly. The spiritual needs of the elderly are met. Compared with the traditional pension service mode, it will waste a lot of human resources, material resources, and financial resources. Internet information technology can reduce the cost of conventional home care services. As well as focusing on the elderly, the government has increased efficiency and reduced spending. The following is a summary of the experience of "Internet Plus" home care model:

- 1) The Internet technology application in the home endowment service industry has realized the house with the integration of information technology from the perspective of the use patterns of these cases. Internet technology has penetrated into the daily life of families. With the development of modern information technology, technology integration provides many conveniences for society. And with the development of network technology in the future, the cooperation of the pension industry will be more diversified.
- 2) As a public service, the purpose of combining enterprises and social organizations has been realized. In these cases, home-based care services more or less cooperate with enterprise organizations, and the intervention of some network platform enterprises can better help the home-based care mode to mature. With the help of WeChat APP

service, Wuhan and other local service-oriented enterprises join this model. The addition of catering enterprises and medical services greatly enriches and facilitates the online development of home-based care for the aged. The cooperation between these enterprise organizations and social organizations not only promotes the realization of "Internet Plus" home-based care mode but also provides a reference for other regions to better explore home-based care mode by combining local characteristics.

- 3) Enterprises should strengthen innovation. In these cases, companies are combining Internet technology with home-based care. Many techniques are specially developed in conjunction with the "Internet Plus" home-based care mode. Wuhan has developed an APP for home-based care services. Wuhan has installed smart home appliances in elderly people's homes. Functions, such as emergency calling and positioning for the elderly, reflect the innovation ability of these enterprises. The innovative technology of enterprises is integrated into the needs of home care, which is continuously improved and developed in the promotion. The development of these innovative technologies can provide reference and help for the home-based elderly care model in more areas.

V. CITIES AND BUILDINGS IN THE "INTERNET PLUS" ERA

A. The Possibility of "Internet Plus City and Architecture"

Architectural design has a durable literary nature, difficult to describe. The architectural design adds rationality and reality to literature and art, and its charm is sometimes free and unrestrained and inspiring, and sometimes solemn and elegant and intimidating. Cities and buildings, as historical records and emotional memories of human life, look back on the past, showing intermittent or complete progress, lazy and elegant, recording time but not chasing time. The "Internet plus" era has added more content to the artistic temperament of cities and buildings, becoming the field to solve thorny technical and social problems. Cities and buildings have their characteristics. In the future, urban and architectural design will face complexity, fuzziness, contradiction and uncertainty, and think based on correlation and network system, linking the world of human, artificial intelligence, nature and artificial creation, and intervening in the whole process of industrial chain and innovation chain, from creativity to collaborative creation, increasingly diversified.

B. The Influence of "Internet Plus" Era on Architectural Design

In the era of "Internet Plus" for architects, with the deepening of exploration, the future work of architects will be more and more unpredictable. Unfamiliar characters from different directions meet and connect, and architects, as individuals, explore unknown areas. "Architect" and "network architect" both have a word architect, the former is constructing the real world, while the latter is building the virtual world. The two worlds seem to be opposite, but in fact they are not contradictory. They are both based on human behavior and

experience, creating an interactive relationship between human and space or environment. There are differences between the technologies used to construct real space and those used to construct the Internet, but the nature of their behavior is the same. In the era of "Internet plus", architects need everyone from a complete and continuous multi-dimensional perspective. Architects need fast, direct and clear design thinking to meet the needs of users in a complete and systematic way. Architects need to consider future foresight as a necessary quality. Facing and discussing the future is an attitude, imagination, design method and strategic judgment. Architectural design under the influence of "Internet plus" is no longer a closed professional behavior. Architects have changed from creators to organizers and coordinators.

C. Architectural Design Thinking

Architectural design thinking is changing all the time in the network world. The integration of architectural design with "Internet plus" is not only about form and content, but also about the boundless but shining thinking power. The attempt to complete architectural design with Internet thinking points to the ineffable power. The world affected by de-linear Internet thinking presents a reticulated, de-centered and distributed disposition. Internet design thinking is no longer a linear, step-by-step, one-way process. Despite this convergence, groups in the Internet world have expressed resistance to linear design. They want to have more design choices and decision-making power in the design process. Architectural design is an interactive process, especially in the network society, which is increasingly emphasized. The real state of the Internet world is not linear. For example, a person who wants to go from A to B often ends up bypassing C to D, which is the normal state of the Internet world. The same is true of architectural design. Architectural designers design for needs, but the results are often not just to meet needs. Under the influence of "Internet" theory, architectural design should start from the most basic affairs. It is not like the traditional architectural design method, which comprehensively considers the context, space and material. The architectural design results influenced by Internet thinking are closer to evolution than planning. In the rapid process of the Internet age, it seems ridiculous to keep trying and making mistakes in the early stage of architectural design. At the beginning of architectural design, there are many unknown and different possibilities of trying from multiple angles and directions. Although the whole process is tense and hectic, more reasonable solutions can be found. This is the case in the Internet world. When faced with confusion and uncertainty, the first thing to do is to acquire data, and then reflect to acquire knowledge. The action itself is not an end but a means, a process to acquire new knowledge and obtain the final rational explanation. A lot of trial and error is the way to think in the face of uncertainty, not to sit back and do nothing. The users of architectural designers are not real estate companies or project investors, but architectural users. From this point of view, the user experience that architectural designers need to consider is the subjective feelings of architectural users. The ideal form of communication between

architects and users of architecture (user experience) should be direct communication without barriers. The fact is not so, various factors are mixed, the current situation of architectural design is that architects thought they would feel like users, but in fact they are just the providers of design. The core of user experience is direct and effective interaction design. In the world of the Internet, well-regarded products that combine interactive design with aesthetics, technology and operability can generate billions of dollars in valuations for Internet companies. Similarly, the integration of architectural design and user experience should not only consider the balance between aesthetics and functions, but also incorporate "interaction" and "experience" into design thinking.

VI. ENDOWMENT INTENDS

Pension intention refers to the views and attitudes towards personal pension problems, which are mainly reflected in the different choices of pension modes. [5] Although there is no complete agreement on the operation of pension intention in relevant studies, most of them focus on the intention to choose pension mode, which is mainly divided into three categories: social pension, family pension and individual pension. Where to provide for the aged (the choice of place to provide for the aged) and by whom to provide for the aged (the main body of the aged) are the key issues involved in most studies. 74.2% of the urban elderly choose to live in their own homes, 19.1% choose to live in their children's homes, and 6% plan to live in old-age care institutions. Among the old people in rural areas, 68.8% chose to live in their own home, and 30.5% choose to live in their children's home. Only 1.5% of the old people plan to live in old-age care institutions [6].

VII. CONCLUSION

Any pension model should follow their own wishes, indicating that the "Internet Plus" home-based pension model has greater development space than the community pension model. With the development of "Internet Plus" home-based care mode, the problem of elderly care has been solved to some extent. In terms of enterprise technological innovation, the possibility of cooperation between government and social organizations is also increasing. Although the hardware needs to be improved, it will be developed in the future development process. The development prospect and space of this model will get more recognition.

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