

## **Research on the optimization of urban pension service system under the "Internet plus" thrust**

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**Abstracts** Population aging in China with the only child of aging, older sick, lonely empty nest elderly, the empty nest and other special realistic background, with the rapid development of the "Internet +", establish a perfect structure, complete functions, meet the demand of the elderly multiple level endowment service pension service system is very important and urgent. In this paper, with the old man as the core, with the aid of "+" Internet information platform, realize endowment and community endowment that occupy the home, the combination of institutional pension, to realize the integration of old-age service, intelligent, informatization, promote the development of pension services in China, make the elderly life quality of old people in China get the biggest increase. First of all, the use of "Internet +" big data technology and Internet technology, integration of old-age service information resources, construction of pension service data center, provide comprehensive data for pension services and technical support; Then, use the network information platform, make the community endowment, the home endowment and the institution endowment all revolve around the old man, according to the need of the old man to provide service, realize information share.

### **1. The introduction**

Population aging is the objective law of population development. It is the result of the decrease of population mortality, the improvement of living standards and the improvement of health care and life expectancy. In 1999, China entered an aging society. China's population is aging rapidly, the base is large, the elderly population is unprecedented, Pension demand is also becoming individualized and diversified. In this context, it is very important and urgent to establish a service system that is well-structured, fully functional and meets the needs of the aged for the aged.

With the coming of China's aging society, the pension problem is becoming more and more serious. The pension model is developing in a new direction. Such as family pension, home-based care, institutional pension, community care, remote old-age pension, old-age housing, old-age apartment, old-age community, mutual support, old-age care, etc. In our country, about the effective integration of various pension service model, person for household, community, institutions set up network, one-stop personalized information service support platform, truly form "on the basis of family endowment service, community endowment service as the backing, institution endowment as supplement" endowment service system research is still in its infancy, diversity of service, the service main body between the lack of network information platform.

However, International advanced experience, such as Japan, the UK, this paper builds a systematic and standardized "on the basis of family endowment service, community endowment service as the backing, institution endowment as supplement" trinity of pension service system. Around the established pension service system, using cloud computing technology, big data technology and Internet technology to integrate the information resources of old-age service, we will build a data center for smart pension services to provide comprehensive data support for old-age care services.

### **2. The status quo of old-age service under Internet support**

Suzhou city has established a "Virtual Nursing Home" using information technology. It's actually a community home care model. Beijing has made plans for home-based care. The gulou district of

Nanjing and the pearl neighborhood of Changchun have also developed the community home care information management system. Although the domestic pension service industry has achieved preliminary results, However, the problems in the construction of these cases are as follows.

### **2.1 information platforms that can cover all pension models have not yet been established**

Pension service is a social network that should cover all aspects of the old-age service industry. At present, the information platform established in China is mainly aimed at the home-based pension model, which does not cover institutional pension and community pension. In order to improve the service quality and service level of the service industry, A network platform that can cover all pension models must be established.

### **2.2 lack of a unified resource management platform**

The various service resources in the service sector have not yet been effectively utilized and managed. The information resources of the pension industry are not fully integrated and Shared. Therefore, they cannot play their respective roles. Not only the partial waste of service resources, but also the dynamic allocation and utilization of resources.

### **2.3 the basic database and the old-age service database are not established**

The underlying data of the service objects has not been managed by a unified database. Not only are the old people who have logged in to the system to be collected, but also the basic data of all the old people. Because by analyzing these data, more service modes can be found to further improve service quality and service level of the service industry. In addition, the data of the pension service has not been effectively collected and utilized. There is no effective means to collect, store, analyze and retrieve these data. Therefore, we need to use cloud computing technology, big data technology and so on to build a unified data center. Provide basic data support for various service application system.

### **2.4 various application systems have not yet been established**

The application system for the old service should include emergency rescue, life support, active care, etc. The old service support system should include call center, CRM, on-line monitoring, external access and background information management. In addition to these applications, the Internet, mobile communication network, Internet of things technology, data mining, Web services technology, and personalized service recommendation technology should be used. Collecting pension data, establishing system service and information interaction platform, Through the integration of public service resources and social service resources to meet the needs of elderly customers in security care, health management, life care, leisure and entertainment, family care and other aspects, realize personalized service and provide a new kind of old-age solution for the elderly group.

## **3. The pension service system constructed by Internet technology**

Based on the national conditions of China, we should build a system of home, community and institutions that are suitable for our national conditions. Resource integration of existing home care, community pension and institutional pension is shown in figure 1. With the elderly as the core, with the support platform of the pension service information, to realize the organic integration of home care, community pension and institutional pension, Realizing the integration, intelligence and informatization of old-age service, the development of our old-age service industry has improved the quality of life in old age.

In the pension service system, the organic combination of home care, community pension and institutional pension can be realized. Community as a platform for connecting families and institutions, we can effectively integrate various pension resources and finally realize diversified development of old-age services.

With the help of information platforms integrating elderly and related service resources, we will provide services for the elderly in community care, home care and institutional pension, and realize information sharing. Professional elderly nursing staff and professional managers of pension institutions can understand and master the information and needs of the elderly in the community. Through the extended day care, short-term occupancy, door-to-door visits, physical therapy rehabilitation and other service projects, the elderly provide services for elderly residents and elderly residents. The community can use the human resources of pension institutions to better serve the elderly in the region through communication with pension institutions. Even if the elderly lives at home, they can use the information platform to enjoy the services provided by the institutions and the community, and try to stay on their own.

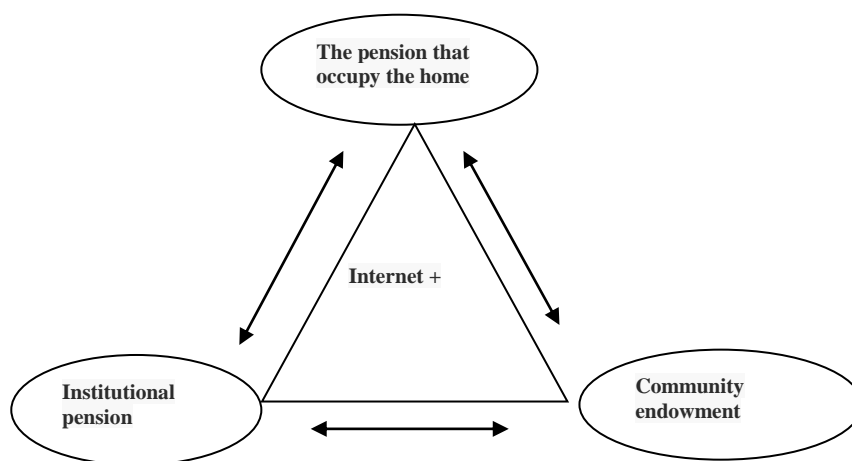


Figure 1 the system of pension services constructed by internet technology

### 3.1 build a one-stop support platform for old personalized service information

Using cloud computing technology, big data technology and Internet technology to build a "one-stop" infrastructure platform for old-age services, we will integrate home care, community pension and institutional pension into a complete information support platform. The support platform includes functions of call center GPS location, mobile device and external access to remote terminal, it can support service application system and service support system of reception management, charge management, old man file management, service file management and health care.

A one-stop service platform will bring together various application systems to share social services and information resources for the elderly. Provide personalized wisdom and care for the elderly, extend the service function of the platform to the remote areas and realize the coverage of the whole area.

### 3.2 build a smart pension service data center integrating social resources, public resources, personal basic data and service history data

Endowment field has entered the era of big data has entered the era of big data, the old man's basic data, history data services, one-stop service of various kinds of metadata in information supporting platform, social resources, such as public resources data and resources, the great amount of data, and various types of data, it covers the structure and unstructured data of text, image, voice and video, and has the basic characteristics of big data. Therefore, it is necessary to build a unified data center with the help of big data technology to collect and integrate various pension information from the platform. Data mining technology and personalized recommendation technology are used to realize the potential value of data.

## **4. Experience and inspiration from foreign countries**

### **4.1 British experience and inspiration**

Britain was one of the first countries to put forward information pension. The UK life trust first proposed smart home care, and gradually implemented smart pension service. The project is based on IT tools such as the Internet of things, sensor networks, 3G mobile communications, cloud computing, WEB services, and intelligent data processing. The elderly, government, community, medical institutions and health care workers are closely related to the relevant elements of old-age care services such as health care, travel safety monitoring, entertainment and so on. The UK has developed a relatively complete standard for pension Informa ionization, which has led to the international advanced level in the construction of old-age informatization through the use of IT technology. The typical pension service provided by this project is: if the elderly person comes out of the house or falls, the ground safety sensor will immediately notify the medical staff or the elderly relatives; Sensors in the refrigerator and in the kitchen, will be alerted if the milk in the fridge is spilled or a hot pot is unattended on the stove. When no one is responding to a certain time, the gas will be cleaned or turned off automatically. "Smart toilet" is capable of detecting the old man's urine, blood pressure, body weight, make toilet medical examination, the test data can be transmitted directly through the network to the community health service center of the old man in electronic health records, once appear abnormal data, smart systems will automatically start the remote medical treatment procedure, the door to health services when necessary; GPS is installed in the elderly, so that children will no longer have to worry about the loss of the elderly when they go out. The UK has integrated home, community and institutional pension information systems with a combination of cloud computing platforms. To realize data collection and transmission with electronic sensors, mobile phones and other portable devices, Through the cloud computing platform of storage and processing, analysis, evaluation, to the elderly health care, medical, security, learning, entertainment, domestic service, and many other needs, and hospital, university of old age, housekeeping service company providing services such as, for effective integration, for the elderly, to provide comprehensive, personalized, wisdom, health care.

### **4.2 experience and inspiration from Japan**

In 2001, Panasonic of Japan put forward the concept of network pension and IT pension institutions, and made a bold attempt on the future social service model. Founded in 2001, the Japanese Panasonic wholly owned "really sweet in the garden", make full use of the digital technology to establish the control network and the multimedia information network in the integration of information technology support platform, make the old people's every move was genuinely care. For example, if the old man sleeps at night because he accidentally falls off the bed, then the probe will automatically call the police; Through remote medical terminals, the elderly can use the LCD touch screen provided by the system to measure blood pressure and other self-care. These daily care data are sent to the medical center for the convenience of doctor-patient communication, so as to facilitate the timely access of medical institutions to information on the elderly physical condition in order to provide timely services; For old people who need housekeeping services, the system can also provide robot services.

## **5. Summary**

There are still some gaps in the construction of the support platform for domestic pension information. We need to use the Internet, mobile communication network, Internet of things technology and personalized service recommendation technology to collect the pension data. Establishing a network platform for system service and information interaction to cover all pension modes, by integrating public service resources and social service resources to meet the needs of elderly customers in security care, health management, life care, leisure and entertainment, family care and other aspects, we will provide a new kind of old-age solution for the elderly.

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