

Analysis of Current Situation and Future Development of Smart Home

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Abstract

Today, with the rapid development of information technology, the smart home market is booming, bringing more convenience to People's Daily life. Starting from the development status of smart home, this paper analyzes the existing problems in the development of smart home, and then puts forward the corresponding solutions. Finally, it looks forward to the future development trend of smart home.

Key words

Smarthome, Existingproblems, Solution, Trend of Development;

With the continuous progress of science and technology and the rapid development of social economy, people's living standards are improving day by day, the scenes in science fiction movies in which the protagonist commands all kinds of smart homes in the home keep appearing in our real life. Smart home is the product of the rapid development of information technology, which is the embodiment of connecting objects with objects under the Internet. Compared with traditional furniture, smart home has higher safety and comfort, more humanized function design, and can provide more extended services, which can help us arrange time and make use of resources more reasonably, so that people have increasingly perfect intelligent life.

I. Overview of Smart home

Although the concept of smart home origin earlier, but the emergence of a real sense of the product is nearly two decades of things. So what is a smart home? Smart home is a house as a platform, with the aid of computer technology, communication technology, integrated network cabling technology, intelligent control technology, the cloud security protection technology, audio and video technology, etc., integrate all kinds of equipment and facilities related to home life organically, and give full consideration to the actual needs of users, so as to build an efficient management system of residential facilities and daily family affairs, so as to improve the safety, convenience, comfort and artistry of home, and realize the environmental protection and energy-saving living environment. Finally, it opens a new family life experience of "people first".

Compared with ordinary home, smart home, in addition to the use, decoration function, more important is also a full range of network communication, intelligent, automatic information interaction function, and even can save energy and funds for users. Therefore, the ultimate goal of smart home construction is to provide users with more diverse, safer and more personalized services by using a variety of technological means, so that users can experience high-quality intelligent life.

II. Smart home development status

Throughout the development of smart home in the past 20 years, early due to the corresponding products less, user demand is lower, so the development is relatively slow. However, with the rapid development of science and technology and the continuous improvement of people's living standards, people's demand for smart home is more and more intense. In particular, since the two

sessions put forward the concept of "Internet+", smart home has become a key area of competition for home appliance enterprises, Internet enterprises and many innovative entrepreneurs.

In China, 2015 is a crucial year for the development of smart home related industries. With the rapid development of mobile Internet and intelligent terminals and other technologies, users' recognition of smart home has been increasing, and their purchase demand has become increasingly strong. Through continuous exploration, the major manufacturers make smart home gradually from the original concept to the product, the application of development, and constantly turn the dream into reality. In recent years, various Internet enterprises and household appliances enterprises have joined hands to actively launch many smart home products that meet the requirements of consumers according to the personalized needs of users and market differentiation classification, and the smart home market is becoming mature. Below we simply introduce the current smart home market mainstream model products.

1. Intelligent home appliances

It covers all kinds of home appliances in family life: intelligent air conditioner, which can be remotely controlled, provides a variety of mode selection, automatic adjustment, energy saving and environmental protection; Intelligent air quality detection, used to monitor the air quality of the home, if the pollution index exceeds the limit, automatically start the purification process; Intelligent refrigerator can automatically adjust the mode and the refrigeration intensity according to the item type; There are also intelligent dishwashers, intelligent washing machines, intelligent televisions and so on.

2. Intelligent door lock system

With fingerprint, password, sensor, key and other multiple unlock functions, to avoid the embarrassment of forgetting the key. At the same time, the intelligent door lock system can interact with other household devices, such as automatically opening the home mode when opening the door, linkage of home lighting, curtains, air conditioning and other related facilities.

3. Intelligent curtain

Can cooperate to sleep, get up, go home, leave home and so on many kinds of scene, realize the switch of curtain automatically, and can adjust the switch degree of curtain automatically according to the light intensity.

4. Intelligent lighting control

Realize automatic adjustment of lighting brightness and multiple lighting effects in different rooms, so as to protect eyes and save energy.

5. Intelligent security

Can be home flammable and other harmful gas monitoring, once the concentration is too high automatically open the ventilation device, and notify the family personnel, if no one at home, can be linkage alarm (residential property, etc.).

6. Intelligent monitoring

The realization family omni-directional monitoring, the remote capture home real-time dynamic, if there is abnormal linkage alarm

III. Existing problems and solutions of smart home

Although the smart home industry has developed rapidly in recent years, there are still some outstanding problems, such as not solving it will inevitably restrict its further development.

1. problems existing in smart home

(i) Lack of smart home industry standards, independent governance

At present, the communication protocols and standards of various manufacturers differ greatly, which makes it difficult for products of different manufacturers to be compatible and information to be shared. As a result, users have to choose products of the same company to communicate with each other, hindering the popularity of intelligent home products.

(ii) The smart home system has complex operation and poor interactivity.

The interactive platform of intelligent home system is unfriendly, complicated to operate, and the user experience is poor, which makes consumers lack of motivation to buy again.

(iii) Intelligent home products have relatively high prices and single functions and types.

Due to the high R&D cost in the early stage and the lack of large-scale production, the product price is relatively high. Many product functions and types are only in line with high-end user groups, which is not conducive to the popularization and promotion of low-end users.

2. Solutions to existing problems in smart home

(i) Develop unified standards to achieve interconnectivity of products.

The establishment of unified technical standards is conducive to the realization of information exchange and sharing between smart home products. In the 13th five-year plan of the Internet of things, it is proposed to build the application standard system of smart home industry, promote the large-scale development of smart home application, such as home security, intelligent control of home appliances, and home environment management, so as to build a prosperous smart home ecosystem.

(ii) Build an smart home system interactive platform to simplify operations and enhance interaction

With the rapid development of smart home, the equipment it covers is also developing from single to diversified. How to integrate these multiple devices distributed in different subsystems to achieve effective information exchange and solve interactive communication with users? smart home interactive platform is a good means. A good interactive platform can not only realize the interconnection of intelligent home products, but also provide users with friendly operation interface, and at the same time can customize the operation interface and logic control function according to users' individual needs.

(iii) Reduce the cost of smart home, improve user experience, and increase the practical functions of smart home.

No matter how smart home development, the majority of users of smart home demand is still based on experience. With the help of new technology, the company constantly optimizes the design scheme, gradually reduces the product cost, develops more diversified, more practical and safer intelligent home products, and applies them to a wider range of families.

IV. The development trend of smart home

In the future, under the influence of big data, 5G technology, Internet of things, cloud computing, artificial intelligence and other new technologies, smart home will continue to develop, and the application scope will be more extensive.

Fixed ultra-broadband network, 5G high-speed mobile communication network and wide power grid have made the Internet ubiquitous, enabling people to access the Internet anytime and anywhere, and also providing the communication basis for the interconnection of products in smart home systems.

Intelligent cloud technology enables man-machine interaction to transcend the limitations of time and space, and series single and isolated electrical products into a connected information network. It can also obtain all kinds of big data of people using smart home appliances, and find out people's usage habits, so as to extend or carry other value-added services.

The rise of Internet of things technology makes the dream of the Internet of everything come true. Small, low-energy and fast information processing sensors are installed in smart homes to report light, temperature, carbon monoxide levels and other data. It can also perceive various health information of people through intelligent sensors, such as changes in blood pressure, movement, weight and temperature, etc., which can better monitor the lives of the elderly or patients.

Artificial intelligence has also penetrated into every aspect of the smart home. In the near future, we will see a scenario where people can activate some functions of the smart home simply by saying some commands. Intelligent robot can be used to serve as the "little housekeeper" in the future family, ready to be on call at any time to complete a number of tasks such as housekeeping, security and nursing.

V. Summarize

Smart home is a high-tech industry with huge development potential and prospect. The popularization of smart home will bring great convenience to people's life, improve the efficiency of life and let us have a more comfortable living environment. In order to keep growing, the smart home industry needs to increase

research and development efforts and further improve in the future, so as to meet people's diversified needs, provide better services, shorten the distance between dream and reality, and make our life more and more beautiful.

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