

## The Application of Internet of Things Technology in Smart Home

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### Abstract

With the continuous development of Internet technology, the continuous improvement of living standards, smart home based on Internet of things gradually entered People's Daily life, become a part of the intelligent life, form the application of advanced technology, not only bring people life convenient, also prompted intelligent household industry to obtain high quality development, driving the big development companies into the development of smart home. Therefore, this paper makes a detailed analysis on the application of Internet of things technology in smart home.

### Keywords

Internet of Things technology; Smart home; Application.

### 1. Overview of Internet of Things technology and the development trend of smart home

The Internet of Things is a stage of the development of the information age, an important part of modern information technology, and the result of the progress of the mobile Internet. Generally speaking, the Internet of Things is a network built by connecting objects with each other. However, based on the technological characteristics of the Internet of Things, we define it as "the Internet of things connected with things". Although the Internet of Things is a separate concept, its core is still the Internet. The Internet of Things is an upgrade of the Internet in technology and application, expanding from the original "everyone interaction" to "people interaction" and "things interaction". At the present stage, the Internet of Things has become the guidance of the development of science and technology by virtue of its excellent perception, identification, remote control and other technologies, and has been applied to many physical industries, and has generated huge economic benefits.

Among them, the smart home is to use the Internet of things technology to dominate, people's living environment in the household as the core to develop the technology and application of change of human life, in which applied to sensors, computer network, software engineering, hardware and software technologies such as through hardware and software technology to realize intelligent people's life. Smart home is a kind of national strategic industry of emerging science and technology that promotes national economic growth.

Smart home more similar to the Internet, only a computer system is not called the network, only one or two smart home appliances, can not be called smart home. The core of smart home is to make all smart home appliances linkage. However, due to ecological, artificial intelligence technology and other restrictions, the current smart home is still a long way from "real intelligence", and the future smart home will inevitably break through this limit. For example, the intelligent lighting system is not only to control the light switch and dimming of the whole family with the mobile phone, but also to automatically light up at night, automatically turn off when leaving home, adjust the light brightness according to different conditions, etc. This whole process is obtained through a lot of data feeding and analysis, which is a non-sensory experience.

## **2. Application of Internet of Things in smart home**

### **2.1 Security and Protection system**

Residential security is a demonstration of the application effect of the Internet of Things in the field of smart home. Specifically, the security network is formed by cameras, detectors related to smoke and inflammable gas, etc., and environmental monitoring is carried out on the activity place through Internet of Things technology, and the operation of its own equipment is determined according to the specified data to ensure the environmental security of the activity place. Once the system detects the occurrence of security problems, the corresponding information can be sent to the mobile terminal of the household to realize the real-time monitoring of the household security situation. Or connect it to the property system of the community to ensure that in some special circumstances, the security situation of the home can still be monitored by the property to ensure the safety of the family property.

### **2.2 Remote control**

Remote control includes three categories: bus technology, wireless communication and power carrier. In general, the remote control technology of the Internet of Things in the smart home can be simply understood as: the operation state of the smart home in the activity places such as living and working by remote control through the Internet of Things technology. For example, people can switch on and off various electrical facilities without displacement. Households can control the switches of household appliances such as lighting and air conditioning in their offices through mobile phone apps.

### **2.3 Optimize your daily life**

The application of smart home continuously improves people's lifestyle in essence, making home life especially convenient. Residents can manage every corner of the house anytime and anywhere according to their actual needs. When the alarm goes off in the morning, the preset system will automatically open the curtain, turn on the first pot of water in the hot kettle and turn on the air conditioner to get the cloud weather data and adjust it to the most appropriate temperature. The whole morning will be accompanied by not only warm sunshine, but also a cup of refreshing coffee and light music. As can be seen from these examples, it is very convenient to connect the Internet of Things technology with smart home, and it can improve people's life quality and comfort. Moreover, while connecting home devices, the Internet of Things can be connected with external services, which can improve the quality of intelligent life and realize the interaction between services and devices.

## **3. Problems with the Internet of Things in the smart home**

The first problem is the high cost. At present, China's Internet of Things smart home is still driven by high-end communities, mainly because of its high cost. Generally, a three-bedroom house with a standard smart home will cost more than three times as much as different decorations, with an average price of more than \$400 per square meter. Obviously, ordinary income residents cannot accept this price.

Secondly, the network security mechanism is not perfect. The smart home of the Internet of Things is configured with special functions according to customers' living habits and personal preferences, that is, a considerable amount of customer information will be stored in the network system of the smart home. At present, the protection mechanism construction of such customer privacy information in China is completely blank, and it is difficult to contain the outbreak of information security risks in this field.

The incomplete industrial chain also restricts the development and popularization of smart home. People only see its potential huge economic value, but do not see the Internet of Things smart home sustainable development of the "soft demand". At present, China's Internet of Things intelligent furniture industry has not formed a complete industrial chain, and the market circulation of product specifications are also relatively chaotic. That is to say, all kinds of smart home products in the communication protocol, functional interface, data acquisition, processing, processing, equipment

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power, network access and other aspects of the lack of unified industry standards, manufacturers also lack of technical exchanges.

#### 4. TAG

At present, China's domestic Internet of things smart home has not achieved complete, mature, thorough intelligence, which requires relevant technical personnel to strengthen exploration and innovation, some high-tech applications to the market in the specific link of smart home. At the same time, also focus on the question of the cost of the smart home system, because the cost of these technologies is high, many customers are on the back foot, it is unfavorable to the Internet of things technology popularization in smart home, so, to avoid the shortcomings existing in the Internet of things smart home, be need to pay attention to some scientific and technical personnel, and increasing investment on the technology, the popularity of truly intelligent.

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