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Smart home: advantages and disadvantages

The current state of the economy is characterized by the active development of digital tools that penetrate into all spheres of human life. The most popular tools of the digital economy are the Internet of Things, artificial intelligence and others [5].

The most priority areas for the development of the Internet of Things are Smart Home and Smart City.

A smart home is a technology that allows a person to control a system that includes various tools that increase the level of comfort and safety of human life [6].

This article is intended for a wide range of people and does not contain technical details that are understandable only to a specialist. In our country, "smart" houses and "smart" apartments are not yet a common phenomenon, although in many other countries home automation has become a common phenomenon[1].

There is only one important thing to consider. The level of the automation system is determined not by the manufacturer's brand, but by the system architecture and algorithms embedded in the software. The more intelligent the software is, the more capable it is of learning and tuning, the greater the result we will get[1].

To understand whether it is necessary or not to use the Smart Home system in your home or apartment, you should first of all study the possibilities offered by this system. Correlate advantages and disadvantages.

Advantages of "smart home"

Different people come to the idea in absolutely different ways that it is necessary to install a home automation system in a new or existing apartment. Some are driven by the desire to use the most modern novelties, others want to surprise their guests. And some people objectively consider the advantages of a "smart home". Let's look at what the installation of automation systems gives[1].

1. Automation allows you to save money. This refers to the efficiency of the engineering systems of the house and your household. The automation system is able to control many devices at the touch of a button, can control thermostats and turn off the light where it is not needed, or where it was forgotten to turn off. Thus, we spend less electricity and gas if it is used for heating, and we protect the resources of the planet for our descendants.

2. Automated house is more convenient. A person is able to control and control all types of electronic devices (lighting, heating and air conditioning, audio and video equipment, motorized drives, security system, etc.) from the screen of a smartphone or tablet. Convenience alone is enough to inspire a lot of people to automate their home. We can show our friends how easy it is to manage various engineering systems.

3. Automation creates comfort. Thanks to the ability to actively control and control various electronic elements, the automation system guarantees maximum comfort. The entire environment - from controlling the light and maintaining an optimal temperature, to playing your favorite music is controlled by a control system that gradually learns the way of life of a person.

4. Automation increases safety. A home automation system helps prevent potentially bad things by allowing you to control your home remotely using smartphones and other devices. It is also possible to control the house even when we are far away. The smart home system can monitor the condition and location of residents and typical scenarios of their behavior. I would like to note that many security systems have the basic functions of a home automation system. Safety is always important, in addition, a person will be able to gradually accustom the residents of his house to use modern technologies [2].

Vulnerabilities of the Smart Home system

When analyzing the vulnerabilities of the Smart Home system, the following was revealed:

1. Currently, during the development of computer technologies, identification and authentication data can be intercepted by third parties through the introduction of malicious software into the devices of the Smart Home system.

2. Full-fledged antivirus systems providing comprehensive protection against malicious software developed specifically for smart home systems do not yet exist.[3] Moreover, the program code peculiar to viruses for Smart Home systems is not recognized by most signature scanners [4].

3. The use of symmetric cryptographic systems, remote control of devices, updating the software of devices, the predominant use of wireless communication to communicate devices with each other - all this requires the presence of secure communication channels in the Smart Home system.

4. Potential vulnerabilities of the Smart Home system due to the functioning of devices from different manufacturers in it.

5. Finally, the devices of the Smart Home system have different functionality and a set of tasks to be performed. Accordingly, the devices have various vulnerabilities.

In conclusion, I note that the advantages of a smart home are still more than the disadvantages. Although the technology is actively developing, it is still poorly distributed. For example, in America, Smart House is installed in 20% of homes, and even less in our country. A smart home significantly increases the comfort and safety of living, simplifies the performance of some household operations, helps to save money. Installing a Smart House or coping with household chores yourself is the choice of each person. The system is constantly being improved. Specialists are working on eliminating shortcomings, developing new functions and options. This objective trend is gaining momentum.[7]

Literature

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