УДК 69.03

ЛУЧШИЕ ВАРИАНТЫ СИСТЕМЫ «УМНЫЙ ДОМ»

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Аннотация

В этой статье рассматриваются вопросы приобретения лучшего продукта для умного дома на рынке на данный момент. Показана взаимосвязь науки и техники. В нем рассказывается о том, как современные технологии продвинулись на шаг в будущее. Здесь поднимается тема искусственного интеллекта и того, как он связан с умным домом. А также классификация и объяснение предстоящих продуктов для умного дома, и их назначения к вашим услугам. И самым важным фактом является топ или рейтинг систем умного дома, составленный этими руководствами и экспертами, который отображается в онлайн-формате. Это то же самое, что и рекомендация, которая является ответом на самый важный вопрос: каковы наилучшие варианты для системы умного дома.

КЛЮЧЕВЫЕ СЛОВА: технологии, умный дом, рейтинг, наука.

WHAT ARE THE BEST OPTIONS FOR A SMART HOME SYSTEM

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Abstract

This article discusses the issues of purchasing the best smart home product on the market at the moment. The relationship between science and technology is shown. It tells about how modern technologies have advanced a step into the future. The topic of artificial intelligence and how it is connected with a smart home is raised here. As well as classification and explanation of upcoming smart home products and their purpose are at your service. And the most important fact is the top or rating of smart home systems compiled by these guides and experts, which is displayed in an online format. This is the same as the recommendation, which is the answer to the most important question: what are the best options for a smart home system.

KEYWORDS: technology, smart home, rating, science.

Everyone knows that science and technology play an important, significant role in modern society, in the life of every person.

Technology is an applied science. Science is engaged in the production of knowledge, and technology implements the application of acquired knowledge in practical activities. This relationship between science and technology is linear; it is an oversimplification of the real relations that have developed between science and technology over the centuries. Both science and technology develop independently from each other, but at the same time these processes are connected with each other. Their interaction is evolutionary. It happens that science uses technical devices to obtain its own results. It happens that scientific results are successfully used in technology. In this model, there are three interrelated, but independent spheres: science, technology and production. As you know, the

development of science occurred depending on the degree of development of modern technology. Followers believe that scientific knowledge has progressed through the study of technical devices and tools in order to uncover the mysteries of their functioning. It is believed that science and technology really developed independently of each other, separately according to the most realistic and many historical facts [1]. But now it should be noted that technology has developed thanks to modern scientific achievements. There are four periods in the history of the relationship between science and technology:

a) The first period is pre-scientific. At this stage, 3 types of technical knowledge are consistently formed: practical and methodological, technological and constructive and technical. b) The second period is the birth of technical sciences. This period lasted from the second half of the XVIII century to the 70s. XIX century.

c) The third period. The classical period, which lasted until the middle of the XIX century, is characterized by the construction of a number of fundamental technical theories.

d) The fourth period is the present. This period is characterized by comprehensive research, integration of technical sciences not only with natural sciences, but also with social sciences, as well as further differentiation of technical sciences from natural and social sciences [2-6].

Humanity has always sought to make life easier for itself. In order to improve labor, for easier tasks, people invented more and more new devices that have been evolving for centuries. Even something from the technology, it has found a way out not to bother too much and this invention is called artificial intelligence. It's crazy that now technology has come really far and some gadgets are able to decide on their own, therefore, doing some particular tasks for people. And its formal term would be a technology, or rather a branch of modern science that studies ways to train a computer, robotic equipment, analytical system to think intelligently as a person. Actually, the dream of intelligent robot assistants arose long before the invention of the first computers. AI gets used in a wide range of spheres such as robotics, science, internet, logistics, finance, medicine, security system, education, industry and construction. However, smart home systems in majority are based on AI.

So, what are the best options for a smart home system?

To begin with, let's clarify what a smart home is. A person constantly strives to make his life easier and therefore invents and constantly improves devices that can perform any functions instead of him. But there are also cases when the devices have functions that a person cannot do. For example, the best "smart home" systems can manage a home faster, more accurately and more efficiently than a person.

A smart home is understood as a set of solutions that allow you to automate everyday activities, relieving the owner of routine [7]. Moreover, it is rather not a set of devices that can be "commanded" remotely, but a single control system for them. It provides specific benefits to the user, including visibility of control, convenience, saving time and effort. Such an ecosystem (a set of devices and control systems) must perform certain actions and tasks in response to specific situations without direct human involvement. Electronic housing management systems have become firmly established in our lives. They make life much easier for their owners: they help to program the necessary functions in advance or remotely manage them. With the help of smart home systems, you can control street and indoor lighting: it will turn on and off according to a planned schedule or under the condition of insufficient illumination. You can also control the water supply, room temperature, household appliances management and much more [8].

The main purpose of any ecosystem is to make sure that you are under no circumstances have to be worried about everyday household routines such like turning off TV or lights and etc. With this kind of technology everything around is already becomes automatic. Maximum effort that you can put on is to use your smartphone or simply voice.

The best smart home devices also have one miracle like benefit. It is to control everything that's going on in and out of your house's area from the distance no matter how far you are currently located in. In the end, all comes around to your smartphone. Basically, this is all you need to watch over your house and security system will do the all the work for you.

Even if you are independently having everything under control, there is no obligatory need to do that. Because, nowadays even security system has its own brain-AI that is enough to get plugged in your main leading ecosystem in your house and the rest I assure will pleasantly get you surprised.

With such a wide array of smart home gadgets on the market, it's no wonder if you're unsure which you should invest in. If you're just starting your smart home journey then affordable, easy-to-use devices such as the best smart lights and smart plugs and switches are the ideal purchase because they're also simple to install [9].

For example, in this picture you can see the model of the 3 blocked houses, which were made for any ecosystem that can easily adapt and plug in to them. Because, 1) the environment that house is surrounded by (flat landscape and cactus and also cactus typed contained greenery); 2) communication availabilities everywhere (the better chance that there are services nearby); 3) great internet connection

due to communication (since it's 3 houses blocked, there are 3 single family neighborhoods that share the same system) and so on (Fig. 1. The Urban analysis of the *project*).

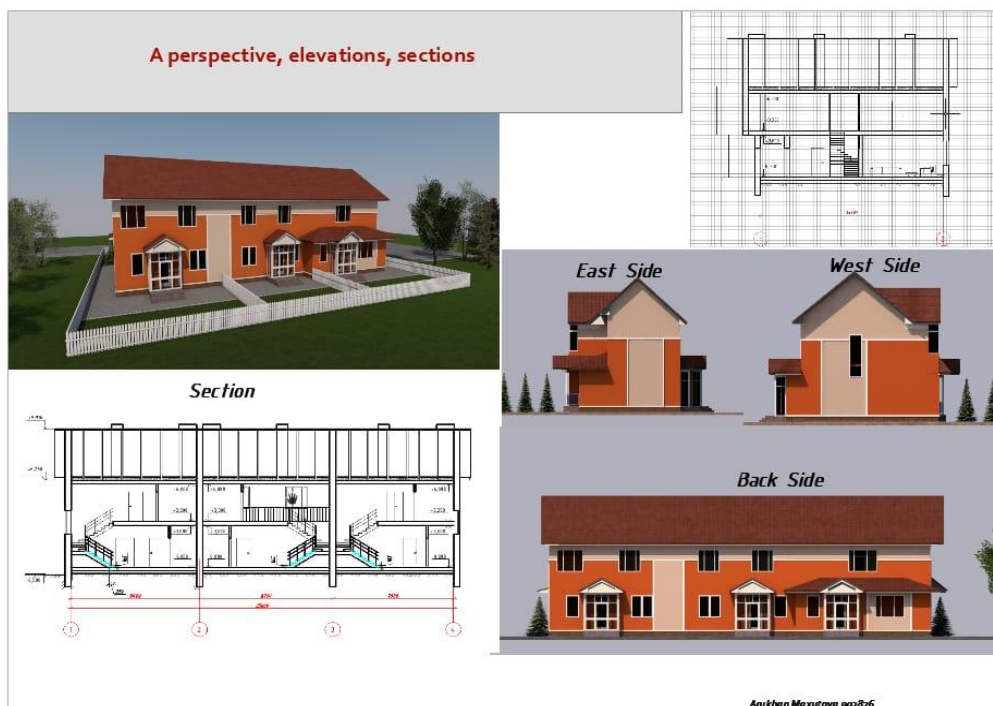**Fig. 1. The Urban analysis of the project**

Fig. 2. Elevations, sections and a perspective

Here you also may observe the rest of the self-made project. If you wish to look closer, here I present to you elevations (facades from front, back and left, right side showing the materials in color); sections (a cut through view from the very middle of the plan and one from staircase); next we have a perspective (which we call a birdsview) (Fig. 2. Elevations, sections and a *perspective*).

Also, you may observe the main parts of my project: the plans of 1st and 2nd floors with an another on facade and a perspective (Fig. 3. A facade, a perspectives and site *plans*).

You probably might be wondering what is this house has to do with the main topic over here. It's because not any house is desingned for such complex technical equipment to go along with. Some houses should have a really good cooling system, thermal insulation provider, a great fire resistance materials and most importantly a great choice of place where the house will be situated on with practical greenery, so that the house could get the energy from the Sun for instance. There are a lots of requirements for a house to be enough perfect for a smart ecosystem.
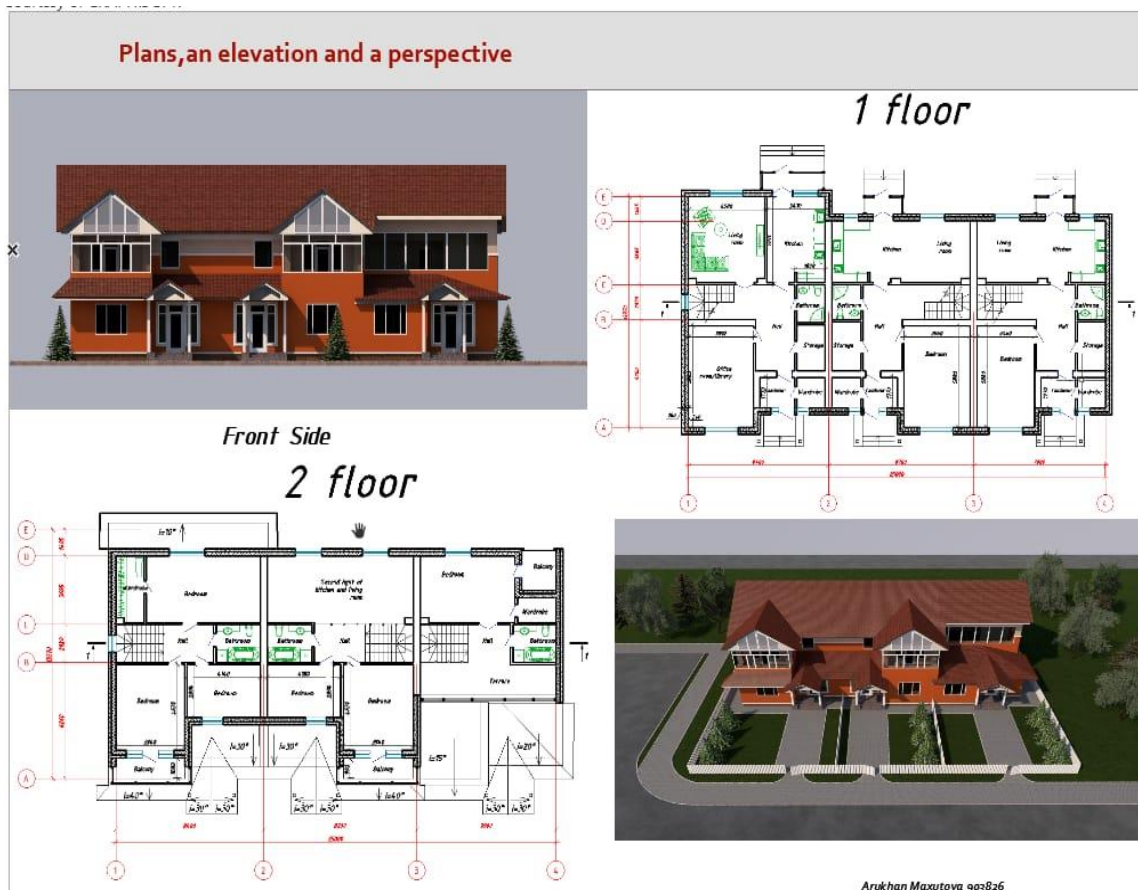

Fig. 3. A facade, a perspectives and site plans

In addition, such systems make it possible to make an apartment or house safe: to warn about an illegal intrusion by an alarm system, turning on lights and sirens, as well as a message to the smartphone of the homeowner. You can also protect yourself from risks during your vacation or business trip: special sensors report flooding, gas leakage, smoke and other dangerous situations.

Also, in most cases, video surveillance and connection to the remote control of private security are provided. So, if a child leaves his room at night to go to the toilet, the light will automatically turn on in the corridor and then in the bathroom of the smart home. If a water leak is detected in the bathroom, the system will warn the user about it, and ideally, it will block the water supply itself [10].

Right now, out in the online market these are a large number of systems/devices thanks to which the dwelling becomes functional, comfortable, modern and technological. And it's very crucial for them to provide working elements that have sensors which are connected to the device via Wi-Fi, Bluetooth, ZigBee, Ethernet. Because that's, what makes them competitive to one another. Many customers nowadays may struggle with which one product they'd like to purchase and connect to their houses. According to the websites mentioned below [11-15], here's latest smart home ecosystem/device's ranking;

1) Amazon Alexa

The American company is the largest developer of cloud technologies and electronic devices. Users liked smart speakers that can successfully interact with the developments of other companies. For ease of operation, voice assistants have been invented. The smart device controls not only light bulbs and sockets, but also a stereo system, equipped with smoke sensors, video surveillance cameras. The application works quickly and flawlessly. It is intuitive and easy to use. An interesting option is to support the intercom function. Using it, you can send voice messages to another part of the house over the loudspeaker. The ecosystem also allows you to quickly order pizza, call Uber, top up your bank account, purchase tickets, etc. [16].

2) Google Assistant

This is a new smaller version of the Google Home speaker, which can answer questions about the weather, sports results, unit conversion and other general information. You can ask him to set timers and alarms or inform him about upcoming meetings. The speaker connects easily and instantly to smart devices such as Chromecast, Nest or Philips Hue. Thanks to this, you can control the temperature with

your voice or turn off the lights in the apartment. Many users appreciate the product for its simple design, which will fit perfectly into any room and compatibility with smart devices from other companies [17].

3) Apple HomeKit

This is a flexible standard that does not impose only one form of communication between devices. With it, you can control blinds, smart sockets, lighting, audio equipment and much more. Accessories can be connected to the hub via Wi-Fi or Bluetooth, and products built according to a unique standard can be interfaced with HomeKit via special bridges, which significantly increases the capabilities of the entire system. Voice control of a smart home using Siri will be especially appreciated by people who have a HomePod in their apartments. Apple also pays great attention to the security of users, protecting their privacy, providing easy use and high availability.

4) Samsung SmartThing

The Samsung SmartThings system connects management with Samsung technology and Smart Things on multiple devices. There are a number of devices that support this system. On them you can see the designation "Works with SmartThings", most often on one of the sides of the package. These include: televisions, air conditioners, refrigerators, cameras, washing machines, lighting devices and much more. The main advantages include: easy connection and search for devices that support this application; freedom in choosing a brand - smartphone or a remote control; the convenience of the application, there are no complex manipulations; updating the system at any time (new settings will be loaded when you come home); in case of problems in the application or failures in the application, help is provided during the day.

5) Xiaomi Smart Home Suite

The Chinese brand has developed a home automation system that consists of smart light bulbs, sockets, CCTV cameras, a door lock, an infrared power supply and can be expanded by many other devices. It also supports third-party products. Management is available on both Android and IOS. All commands are configured automatically and completely replace the remote control. However, users note in their reviews that it is not possible to control the system by voice, due to the recognition of only Chinese. However, many consumers do not use this function, so this fact is not significant for them [18].

To summarize it all, in online stores customers have a wide choice in relation to the purchase of smart home ecosystems. But despite that even the top best ecosystems that I've mentioned earlier have their own flaws. For instance, Amazon - has a lack of devices set; Xiaomi is the high price of the device

and some of the devices aren't not suitable for a European outlet; Apple- small functionality, unclear sensor adjustment, requires additional licenses for accessories and so on for the others. Sometimes for majority of simple people it is hard to keep up with such a disruptive technology. In that case, best way would be to contact a tech guide or make some researches on the internet all by yourself. But my personal recommendation would be Amazon since it's situated on the top of best Smart Home ecosystem [19;20].

I would like to convey in this article that each of these devices are good in its own way, even if they have their pros and cons. Now in the 21st century, people have begun to bargain not with ordinary houses, but with smart ones. Because we have to keep up with the times. Construction designers and architects take this very much into consideration and try to make the most comfortable homes for their residents. And in the article, there is only a small instruction and navigation on how to choose the right equipment for your future home.

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