



Ways to improve the housing and communal services activities in the digitalization conditions

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ABSTRACT: Modern innovative development of society and economy reveals new, non-traditional directions of quality growth. One of the urgent ways to increase the housing and communal services efficiency is the “smart” cities and “smart” houses creation. Their implementation should be carried out progressively and on the basis of economic justifications.

KEYWORDS: Information and communication technologies, digitalization, housing and communal services, quality of services, “smart city”, “smart house”.

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I. INTRODUCTION

The main structure-forming economy sectors of Uzbekistan are industry, construction, the agricultural sector, the consumer goods market, trade and services, including housing and communal services.

The increasing issues of the service quality in the housing and communal sector are relevant. They are also under the relentless attention of the state authorities and the top leadership of Uzbekistan [1]. These issues are considered by foreign authors [2]. In recent years, domestic authors began to devote their research to the housing and communal services problems [4, 5].

The innovative development of society and the economy reveals new, non-traditional directions for increasing the activities quality and efficiency in various areas, including the housing and communal sector.

Research methods. One of the ways to increase the housing and communal services efficiency is the “smart cities” and “smart houses” creation which are pursued by the solution of such important tasks groups, which in priority order are as follows:

- ensuring the safety of the living environment;
- increased living comfort;
- energy saving;
- new approaches to solving environmental problems.

A smart city creating concept, covering all its life support systems, allows them to be managed on the basis of modern information and communication technologies.

It goes without saying that a “smart city” must be environmentally friendly, safe, offering ample opportunities and ensuring the most comfortable life.

The "smart house" system includes the following main automation objects:

1. Lighting control;
2. Electric drive control;
3. Climate control;
4. Ventilation system control;
5. Centralized systems management;
6. Home theater;
7. Video observation systems;
8. SFA (security and fire alarm);
9. Monitoring loads and emergency conditions;
10. Control of engineering equipment from touch panels;
11. Management server.

Results.

Smart house system: needed to facilitate the household management, as well as to expand its capabilities. This system is the most advanced house control technology. It provides control of household appliances and lighting in the house, and connection to the devices system such as intercom, videophone, TV, surveillance cameras, air conditioning, etc. Allowing at anytime from anywhere in your house (apartment) and also in the world to establish connection with your house, turn on or off the lighting, adjust the temperature regime in the house.

The best energy savings are provided by light circuit breakers using infrared and electronic sensors. Electronic sensors measure the illumination level in the room and, upon reaching a preset value, issue a command to turn on or off the lighting (light sensors), or directly "see" that a person has entered the room and turn on the light (motion sensors). The photosensitive element blocks the lighting from switching on when there is sufficient natural light. Since, unlike relay-time sensors, motion sensors turn on the light only for the actual presence duration of a person in the room, and the electricity cost for lighting can be reduced several times.

As with any technology, there are advantages and disadvantages here. One of the main advantages of smart buildings is the comfort they provide to their residents. Controlling the house lighting and

adjoining infrastructure allows you to create various options for light scenes, any combination, depending on the day and mood time, at a button touch. The climate control system makes it possible at the same time in different rooms to recreate the different climatic zones conditions. To do this, you just need to set the required temperature on the touch control panel. Another indisputable advantage of a smart house is its security system. This is achieved through the most rational use.

The first, and main, a "smart house" disadvantage is the high cost of equipment, its installation and maintenance. Note that this aspect many times overlaps the entire effect cost of saving energy resources, indicated in the smart house systems advantages.

The second disadvantage is the need for a special place in the house for placing equipment. The equipment must work constantly, stably and not break down, which means that an uninterruptible power supply and a stabilizer are needed. And, in the ideal case, a backup power source, which can be a generator running on gasoline or diesel fuel.

To implement the "smart house" system, a complete replacement of all electrical wiring is required, all the necessary equipment installation for a "smart house", it is necessary to redo the water supply system, heating, air conditioning and ventilation systems, possibly to replace windows and doors (if they are opened and closed using electric drives), install electric curtains.

At subsequent stages, on the feasibility studies basis, for example, using data from [3], a more complete application of smart house technologies should be envisaged. At the same time, widespread use of such technologies is already possible in elite-class residential buildings. This would allow testing these innovations in local conditions.

Conclusions.

Thus, the housing and communal sector in modern conditions of economic modernization and urbanization level growth acquires new qualities and significance. The growing complexity of housing stock and communal operation, the requirements growth for the services quality provided to the population require an innovative approach, one of the directions which is the "smart cities" and "smart houses" creation.

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