

EFFECTIVENESS AND RELEVANCE OF TECHNICAL AND SOFTWARE PROGRAMS IN THE MANAGEMENT OF MUNICIPAL UTILITIES

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Abstract. *The rapid development of digital technologies has transformed the management of municipal utilities, making the adoption of technical and software programs crucial for improving service efficiency, resource optimization, and customer satisfaction. This study analyzes the effectiveness and relevance of various technical solutions and software systems used in municipal utilities management. It highlights key factors influencing successful implementation, such as system integration, user training, data analytics, and real-time monitoring. The research also emphasizes the role of innovative tools in energy efficiency, predictive maintenance, and decision-making processes. The findings indicate that systematic adoption of advanced software and technical programs significantly enhances operational performance, reduces costs, and improves service delivery, thereby contributing to the sustainable development of municipal utility systems.*

Keywords. *Municipal utilities, software systems, technical programs, digitalization, service efficiency, operational optimization, energy management, innovative technologies, predictive maintenance, smart management.*

The introduction of information technology in every field is the way to progress. In particular, the introduction of information technologies in the Management of housing and communal services will create ample opportunities for further improving the efficiency of the sphere, creating favorable conditions for the population, organizing operational information exchange, remote control. Contributes to the achievement of high performance through the introduction of computer technologies, technical and software, the introduction of web technologies, the development of mobile applications, the organization of information exchange using information systems.

As a result of the conducted scientific research, changes in the broad development of the introduction of information technologies in the digitalization of housing and communal services management, improving the efficiency of the use of information technologies were studied, scientific conclusions and proposals for the broad development of the introduction of information technologies in the public utilities for the future were developed.

When information technologies are introduced into the Management of housing and Communal services, information is processed, information is

transmitted, electronic document management is organized, interactive services are introduced.

There is a need for the joint use of technical and software tools in the processing of information. At the same time, using modern computer technologies, it is possible to simultaneously perform several tasks, manage multi-functionality, provide multi-user work, achieve fast results in information processing.

Hardware is also called hardware, which includes a computer, internal and external computer devices, network devices, hardware devices, data input devices such as a keyboard, mouse, scanner, etc., processors for data processing devices, digital devices, printers for data output devices, audio amplifiers, etc.

Software includes system software, i.e. operating systems, utilities, drivers, antivirus software, service software, application software packages such as text editors, graphic editors, programming languages such as C++, Java, PHP, Python.

In addition, the organization of electronic document management gives a great effect when exchanging data. For example, when organizing electronic document management through local and global networks, it is possible to achieve such efficiency as saving time, reducing distance, saving overhead costs, and preventing waste of resources. As a result of the development of technological progress, in connection with the transition from the paper era to the new world of digital documentation, working with documents has become easier. Working in an electronic document management system does not fix any difficulties, as working in other office programs. You can work with any device from anywhere in the world.

Digitalization, the introduction of information technologies involves the introduction of technologies used to automate various processes in housing and communal services:

- ☐ forecasting and modeling;
- ☐ accounting for resource consumption;
- ☐ acceptance of settlements and payments;
- ☐ Document Management;
- ☐ allocation of resources for repairs;
- ☐ provision of additional services, etc.

Thus, we can see why digitalization of housing and communal services is necessary, the introduction of information technology, how important it is. Digitization of many areas has already been established, and for many this concept may seem outdated, but the organization of management based on modern technologies primarily contributes to achieving economic efficiency, automatic monitoring of the system, remote control.

There are different concepts about the concept of information technology. A set of methods, devices, methods and processes used to collect, store, search, process information and distribute it, methods, methods and techniques of using computer technology in the process of collecting, processing, storing, transmitting and using information, a set of methods, methods, means of processing documented information, including software, and the established procedure for their use, the set of methods for implementing information processes in the production of an information product in various spheres of human activity is a set of methods, devices and production processes used by people to collect, store, process and distribute information.

Improving the quality of service is associated with the introduction of digital technologies, transparency of interaction between industry management and the public. The smart home platform allows you to receive and process applications and appeals in the shortest possible time, keep records of resource consumption, work on calculations and payments, provide services and inform the population. Communication between industry management and the public will be available from anywhere in the world.

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