

The role of information systems in the management structure

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Abstract: Currently, information technology is the most important factor affecting the rapid development of society. Although information technology has existed at various stages of human development, the characteristic feature of today's information society is that, for the first time in the history of civilization, the effort spent on obtaining and producing knowledge is less than the expenses spent on energy, raw materials, materials, and material consumer goods. is prevailing, that is, information technologies are taking the leading place among the new technologies available. The information technology industry consists of computer, communication system, data storage, knowledge storage and related fields of activity. Information technology is becoming more and more deeply embedded in all spheres of life and becoming its driving force. Information systems mean the principles, methods and tools of information storage, search, classification and processing.

The information system allows the user to organize information, search automatically, exchange information. A system is understood as a complex of several types of elements that work in an interconnected manner at the same time towards a single goal. The creation and use of the information system should be appropriate for the intended purpose. Otherwise, it will not make sense to use it. In this sense, it is difficult to classify the data warehouse into one general type. Some systems are not classified at all. A system is understood as a set of elements (objects) that work simultaneously as a whole and in an interconnected manner towards a single goal. So, any system serves a specific purpose. Translated from Greek, the word technology means art, mastery, skill. Technology is the management of processes aimed at creating artificial objects. Before introducing the concept of information system, let's define what we mean by system. A system is a set of elements (objects) that work in a unified and interconnected way at the same time towards a single goal. So, any system serves a specific purpose. For example, the system of city telephone networks that you know, the human cardiovascular system, the nervous system, etc. are examples of man-made and natural systems. Each of them meets all the conditions imposed on the system, that is, each of them works towards its own unique goal and consists of elements that make up the system.

In information technology, the concept of "system" is used more in relation to the management of technical means, mainly computers and complex objects. The addition of the word "information" to the concept of "system" clearly reflects its defined function and purpose of creation. Information system is an interconnected set of methods, tools and persons used to collect, store, process and transmit information in order to achieve a specified goal.

Information systems have existed since the beginning of society, because at various stages of its development, society required systematic, pre-prepared information for its management. This is especially true of production processes—processes related to the production of tangible and intangible goods. Because they are vitally important for the development of society. It is the production processes that are rapidly improving. As they develop, management becomes more complicated, which, in turn, encourages the improvement and development of information systems.

Therefore, let's first understand what a control system is. According to the cybernetic approach, the management system represents a combination of a management object (for example, enterprises, organizations, etc.) and a management subject, management apparatus. Management apparatus means employees who formulate goals, develop plans, adapt requirements to the decisions made, and also monitor their implementation. The task of the control object includes the execution of the plans developed by the control apparatus, that is, the core of the control system is designed to perform these tasks. Both components of the control system are connected by positive and negative feedback. Correct communication is expressed in the flow of information directed from the control device to the control object. Feedback is reflected in the information flow of the report on the implementation of the decisions that are sent in the opposite direction. Direct and reverse information flows, processing tools, data transfer and storage, as well as the interaction of management personnel performing data processing operations make up the object's information system.

Information systems are not only information processing and storage, automation of writing and drawing work, but also decision-making (artificial intelligence methods, expert systems, etc.), modern telecommunication tools (e-mail, teleconferences), general and local computing networks and new management. due to the use of methods, it increases the efficiency of the management object and is widely used for this purpose.

The first information systems appeared in the 50s. In these years, they were designed for the processing of salary calculations and were carried out on electromechanical accounting machines. This led to a certain reduction of labor and time in the preparation of paper documents. In the 60s, the attitude towards information systems changed completely. The information obtained from these systems was used for periodic reporting on many parameters. In the 1970s and 1980s, information systems began to be widely used as control management tools that support and accelerate decision-making processes. Since the end of the 80s, the concept of using information systems has been changing. They remain a strategic source of information and are used at all levels of organization in any field. The information systems of this period provide timely information and help to achieve success in the organization's activities. In general, the processes that ensure the operation of the information system in the desired tasks can be imagined as follows:

- Entering information from external or internal sources;
- Processing the entered information and presenting it in a convenient way;
- Transmission of information to the consumer;
- Feedback, that is, provision of information processed by users to correct the information entered.

Software is a collection of software tools for creating and using a data processing system using computer technology. Software includes basic (general system) and practical (special) software products.

Regardless of the field of application, the effective functioning of information systems is related to a number of provisions. It is accepted to divide them into software, technical, legal, informational, organizational, mathematical and linguistic resources.

Information supply is a set of methods and tools for codification, placement and organization of information, including uniform systems of documentation, creating a database in information systems. The reliability and quality of management decisions largely depends on the quality of the developed information. Basic software tools serve for automation of human-computer interactions, data processing, organization of sample procedures, control and diagnostics of technical equipment operation. Application software information system includes a set of software products designed to automate the solution of functional tasks. They can be developed as universal tools (text editors,

spreadsheets, database management systems) and special tools - various objects (economic, engineering, technical, etc.) implementing functional subsystems. Technical support is a complex of technical tools used for the operation of the data processing system. This supply includes devices that process data and perform sample operations. In addition to computers, such devices include auxiliary peripheral technical equipment, various organizational equipment, telecommunications and communication equipment. Legal provision includes a set of legal norms that regulate the creation and operation of the information system. Linguistic support consists of a set of language tools used at various stages of creating and using an environment to improve the efficiency of development and maintenance of human-computer communication. Automated and automatic types of information systems are known. In an automated information system, some of the functions of management or data processing are performed automatically, and the rest are performed by humans. In an automatic information system, all functions of management and data processing are performed by technical means, without human intervention (for example, automatic control of technological processes).

Depending on the field of application, information systems can be divided into the following classes:

- Automation and management of scientific research;
- Project automation;
- Management of organizational processes;
- Management of technological processes.

In the automation and management of scientific research, information systems are designed to automate the activities of scientific staff, analyze statistical information, and manage experiments. In the automation of design, information systems are designed to automate the work of new equipment (technology) manufacturers and engineer designers.

Information systems in organizational management are designed to automate human functions. This class includes both industrial (enterprises) and non-industrial objects (banks, stock exchanges, insurance companies, hotels) and management information systems of some offices. In the management of technological processes, the information system is designed for the automation of various technological processes (flexible production processes, metallurgy, energy).

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