Modern information technologies

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ABSTRACT

Information technology is a class of fields of activity related to the management and processing of a huge flow of information using computer technology

Modern information technology, with its rapidly growing potential and rapidly decreasing costs, opens great opportunities for new forms of labor organization and employment in individual corporations and society as a whole. The scope of such opportunities is expanding significantly - innovations affect all aspects of people's lives, family, education, work, geographical boundaries of human societies, etc. Today, information technologies are the solution to strengthening the relationship between labor productivity growth can contribute.

Information technology must meet the following requirements:

Ensuring a high level of division of the entire information processing process into stages (stages), operations, actions;

Contains a set of all elements necessary to achieve the goal;

Be regular. The steps, actions, and operations of the technological process can be standardized and unified, which allows for more effective targeted management of information processes. Informatization of society is a global social process, its characteristic feature is that the main type of activity in the field of social production is the collection, collection, processing, storage, transmission, use, production of information. modern means of microprocessor and computer technology, as well as various means of interaction and exchange of information.

Information technology can be viewed as an element and function of the information society aimed at regulating, supporting, supporting and improving the management system of the new network society. If for centuries information and knowledge were transmitted on the basis of laws, traditions and customs, cultural patterns and stereotypes, today the main place is given to technologies.

Information technology regulates the flow of information at the global, regional and local levels. They play an important role in the formation of the technostructure, increasing the role of education, and are actively introduced into all aspects of social, political and cultural life, including household, entertainment and recreation.

Features of information technology:

Information technologies enable the activation and effective use of information resources, which are the most important strategic factor of society's development today.

Information technologies enable optimization and, in many cases, automation of information processes that have been increasing in the life of human society in recent years.

Information processes are important elements of other complex production or social processes. The ability to use modern information technologies in their work is becoming one of the main components of the professional training of any specialist, including a specialist in the social sphere.

Information technology has entered all aspects of our life. The computer is a means of increasing the efficiency of the educational process, participates in all types of human activity, and is indispensable for the social sphere.

You can live as an educated person in the 21st century only if you know information technology well. After all, the activity of people depends more and more on their awareness, ability to use information effectively. In order to navigate freely in information flows, a modern specialist of any profile must be able to receive, process and use information using computers, telecommunications and other means of communication. People start talking about information as a strategic resource of society, a resource that determines the level of development of the state.

By studying the history of the development of computer technology, you can learn the whole structure of the computer and its importance in human life. This will help you understand them better and easily perceive new advanced technologies, because you should not forget that computer technology is developing almost every day, and if you do not understand the structure of machines from many years ago, it will be difficult to cope with it. current generation.

In the presented work, it was possible to show how the development of computer technologies began and ended, and how they play an important role for people today.

With the exception of only a few gifted individuals, mankind has long regarded arithmetic calculations as a drudgery that must be avoided at all costs and by any means. The abacus (basically a primitive manual digital calculating device) has a long history and seems to have been independently invented in different parts of the world and is still used in some places. After the end of the 16th century. logarithms were invented, the slide rule became an indispensable mechanical tool. The first slide rule appeared in the 20s of the 17th century. Although the analog nature of the instrument (numbers are represented by distances) greatly limited the accuracy of many calculations, it allowed for more complex calculations. Nevertheless, the slide rule is still widely used by mathematicians, scientists, and engineers around the world. In addition, there are a number of specialized calculation tools: ready-made calculation tables in accounting, automatic scales in food and gastronomic stores or counters in gas stations. All these devices use pre-prepared tables or scales, which allow you to perform multiplication operations for various monetary calculations very quickly.

The development of human society requires material, instrumental, energy and other resources, including information. The current era is characterized by an unprecedented increase in the volume of information flows. This applies to almost all areas of human activity. The largest increase in the volume of information is observed in industry, trade, finance and banking and other fields of education.

Information is one of the main, decisive factors determining the development of technology and resources in general. In this regard, it is very important not only to understand the relationship between the information industry, computerization, information technology and the development of the informatization process, but also to determine the level and degree of influence of the informatization process on the field of management. Due to the following objective processes, a lot of attention is paid to management problems as a general information and information process:

Humanity is experiencing an information explosion. The growth of information circulating and stored in society has outstripped the human capacity to absorb it;

Development of mass communication processes;

The need to develop a general theory of information;

The development of cybernetics as a management science;

Penetration of information technology into social spheres;

Research in the field of natural sciences confirms the role of information in the processes of self-organization of animate and inanimate nature;

Actualizing the problem of sustainable development, forming an information economy whose main driving force is information potential, information resources;

The problem of development prospects as a whole of humanity makes it necessary to raise the issue of development criteria in modern conditions.

Information has become a subject of purchase and sale, that is, an information product, which, along with information that constitutes public property, constitutes an information resource of society.

As a commodity, information cannot be alienated like material products. Its sale and purchase has a notional value. Passing to the buyer, it remains with the seller. It does not disappear during consumption.

The formation and development of the information sector, the movement of many types of information as a commodity, influenced the formation of a special market - the information market.

The use of modern information technologies provides almost instantaneous connection to any electronic information arrays from international, regional and national information systems (for example, databases, electronic references and encyclopedias, various operational reports, analytical reviews, legislation and regulatory documents, etc.). and use them for successful business interests.

Thanks to the rapid development of the latest information technologies, there is not only open access to the global flow of political, financial, scientific and technical information, but also a real opportunity to build a global business on the Internet.

In the modern world, the role of computer science, information processing, transmission and aggregation tools has increased immeasurably. Informatics and computing tools currently determine the scientific and technical potential of the country, the level of development of its national economy, lifestyle and human activity.

For the purposeful use of information, it is necessary to collect, transform, transmit, collect and systematize it. All these processes related to certain operations on information are called information processes. Receiving and changing information is a necessary condition for the life of any organism. Even the simplest unicellular organisms constantly perceive and use information about the temperature and chemical composition of the environment, for example, to choose the most favorable conditions for living. Living beings have the ability not only to perceive information from the environment with the help of sense organs, but also to exchange them with each other.

Humans also receive information through intuition and languages are used to exchange information between people. During the development of human society, there were many such languages. First of all, these are native languages spoken by many peoples of the world (Russian, Tatar, English, etc.). The role of language for humanity is extremely great. Without it, the emergence and development of society would not be possible without the exchange of information between people.

Information processes are characteristic not only for wildlife, man, and society. Mankind has created technical devices - automata, whose work is also related to the processes of receiving, transmitting and storing information. For example, an automatic device called a thermostat receives information about the room temperature and, depending on the temperature set by a person, turns the heating devices on or off.

Human activity related to the processes of receiving, changing, collecting and transmitting information is called information activity.

The development of science and education has led to a rapid increase in the volume of information and human knowledge. If at the beginning of the last century, the total amount of human knowledge doubled approximately

every fifty years, then in the following years - every five years.

Computers are used at all stages of production: from the design of individual parts of the product, to its assembly and sale. A computer-aided manufacturing system (CAD) allows you to create drawings, get an overview of the object immediately, control machines for the production of parts. A flexible production system (FPS) allows you to quickly respond to changing market conditions, quickly expand or reduce production, or replace it with another. The ease of transferring the conveyor to the production of new products allows the production of many different models of the product. Computers allow you to quickly process data from various sensors, including automated security, temperature sensors to regulate energy consumption for heating, ATMs that record money spent by customers, and a complex tomograph system that allows you to "see" the internal structure. correct placement of human organs and diagnosis.

A computer is on the desktop of any professional. With the help of educational programs and simulators, you can connect anywhere in the world through special computer mail, connect to large library funds without leaving your home, use powerful information systems - encyclopedias, learn new subjects and acquire various skills. . It helps a modeler to create patterns, a publisher to create text and illustrations, an artist to create new images, and a composer to create music. A valuable experiment can be fully calculated and simulated on a computer.

The development of methods and methods of information presentation, problem-solving technology using computers has become an important aspect of the activities of many professionals.

There are four main interrelated characteristics of the developing information society:

The change in the role of information and knowledge in the life of society is manifested, first of all, in the unprecedented growth of saturation of economic, management and other spheres of activity with information, in the fact that information and knowledge have become the most important resource for social life. economic development.

transformation of the information industry into the most dynamic, profitable and influential production sector, which ensures the leading role of individual countries and cities in the world economy.

The emergence of a developed market infrastructure for information consumption and information services, in particular, the widespread introduction of ICT into various aspects of life, not only professional, but also in everyday life.

In all aspects of society, there have been profound changes in models of social organization and cooperation as centralized hierarchical structures have been replaced by flexible network types. rapid change and innovative development.

"Tele-work" is becoming the norm in the information society, which is able to fundamentally solve the problem of employment, including one of the most difficult social problems for people with disabilities.

The use of satellites, live radio and television to transmit information has a profound effect on the formation of public opinion throughout the world. The emergence and improvement of multimedia, video conferencing, etc., artificial intelligence significantly expands the possibilities of information transmission, and therefore, the possibilities of spreading and sharing knowledge.

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