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ПРИМЕНЕНИЕ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В СФЕРЕ ЭКОНОМИКИ И МЕНЕДЖМЕНТА

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APPLICATION OF INFORMATION TECHNOLOGIES IN THE FIELD OF ECONOMICS AND MANAGEMENT

The relevance of this topic is that today IT products occupy an important place in economic development. At the moment, you can often hear such terms as information or digital economy. Information technologies are often understood as a set of methods for collecting, storing, converting and transmitting information. In the information economy, economic activity consists mainly in increasing the efficiency of all other forms of production through the use of information technologies and accumulated information, which allows achieving new and higher rates of economic growth and creating more information wealth. A distinctive feature of the modern economy is the transition from an industrial economy to a post-industrial economy based on automated production.

Scientific substantiation of the need for digitalization

The development of forms and methods of industrial management in the late 19th - early 20th centuries objectively determined the process of formation of large enterprises and the increase in the number of state bodies for economic management. This was the period when the theories of academically educated scientists and engineers began to be systematically used in industry, and the creation of national research institutes and laboratories gave a new impetus to the development of higher education institutions.

In 1922, N. D. Kondratiev published the results of observations that there is a periodic pattern in the long-term dynamics of some economic indicators. In the course of this pattern, the period of growth of the corresponding indicator is replaced by a period of relative decline, and the characteristic period of these long-term fluctuations is about 50 years. The main contribution to the dissemination of his ideas was made by Joseph Schumpeter, who introduced the term "Kondratiev wave". Changes in the cycle occur as the capabilities of existing technologies are exhausted. As a result, the emergence of new technical methods is necessary. Technological modes are a complex of acquired and innovative technologies specializing in the development of the economy, technology and production at a certain level. Currently, the world is at the end of the 5th technological stage: consumer economy, service economy and financial technology. The core of the fifth tech-

nological mode consists of the electronic industry, computer technology, software, communications, robotics, and IT. The main technical factors are computers, microelectronic components and information technology. The transition to a new technological level of production began in 1980. For the first time, computer sales in the United States exceeded car sales. Now the transition to the sixth stage is underway. At this stage, the emphasis is on the development and application of high-tech technologies, such as artificial intelligence and nanotechnology. The current technological leader will become the future economic leader. According to the system analysis of the cyclical development process of the modern world market economy, its main trend is the transformation of science into the main productive forces of society under the influence of the scientific and technological revolution and technical progress.

Globalization of IT Applications in the Economy

Global communication and management systems provide consumers with information about products, their quality and prices, and allow them to trade and place orders 24 hours a day, 7 days a week, wherever they have access to the network. Using information technology, it is possible to radically change the management style and business processes, and significantly improve the company's performance indicators. Old business rules will soon become obsolete. Companies that cannot "see" the consequences of these changes will be left far behind.

Digital technologies in economics and business

Production processes and products change under the influence of information technologies. According to the classes of implemented technological operations, IT is considered essentially in the software aspect and includes: text processing, electronic tables, automated data banks, processing of graphic and sound information, multimedia and other systems. A promising direction in the development of computer technology is the creation of software for outputting high-quality sound and video images. Computer graphics is the creation, storage and processing of models of objects and their images using a computer. This technology has penetrated the field of economic analysis, modeling of various types of structures, it is indispensable in production, penetrates into advertising activities, makes leisure entertaining. Software and hardware organization of the exchange of text, graphic, audio and video information with a computer is called multimedia technology. This technology is implemented by special software that has built-in multimedia support and allows it to be used in professional activities, educational, popular science areas. The infrastructure of the digital economy includes a large number of the latest information and communication technologies:

- cloud computing;
- Big Data;
- Internet of Things;
- distributed computing technologies;
- cognitive technologies;
- blockchain;
- cryptocurrency.

Using Big Data in Russia and in the World

The use of Big Data is monitored more abroad than in Russia. On the one hand, this protects the data of users of various online services well, but on the other hand, it greatly limits business opportunities.

In the USA, the main consumers and holders of Big Data are large corporations: Apple, Google, Facebook, Amazon. However, the state is increasingly restricting their activities and monopoly on the collection and storage of data every year. In some states, for example, in California, any user can request from online services all the data that is stored in relation to his profile and demand that it be destroyed.

The largest Russian retailer X5 Retail Group has accumulated more than 5 petabytes of data today. Rostelecom also has data volumes in petabytes: they are collected from more than 200 information systems and are used by more than 12 thousand unique users. At Rostelecom, data management units, which are part of the IT block, are responsible for the entire cycle of working with data: data infrastructure, building a data warehouse, data architecture, implementing master data systems, building analytics and reporting, building solutions using artificial intelligence technologies, data monetization and developing data products for the external market.

Specialists whose work is related to Big Data can be divided into three large groups:

- infrastructure professions: employees of cloud providers who provide technical collection and storage of data, data engineers and developers of data processing centers;
- analytical professions: systems, web and data analysts, marketers;
- specialists in artificial intelligence and machine learning.

The role of large companies in the development of the digital economy

Firm 1C

Firm 1C was founded in 1991 and specializes in the development, distribution, publication and support of computer programs for business and home use.

Of the company's own developments, the most famous are the programs of the 1C: Enterprise system, as well as products for home computers and the educational sphere.

The 1C: Enterprise software system is designed to automate management and accounting at enterprises of various industries, types of activities and types of financing, and includes solutions for the comprehensive automation of manufacturing, trade and service enterprises, products for managing the finances of holdings and individual enterprises, and accounting.

SBER

At a new stage of development, the bank launched a large-scale digital transformation and finally turned into a technology company. Under the general brand of Sber, financial and non-financial services for individuals and corporate clients are united, accessible from anywhere in the world 24/7. The bank participates in the

national project “Digital Economy of the Russian Federation” and becomes a center of competence in the field of artificial intelligence and cybersecurity.

Conclusion

It is impossible to imagine any sphere of production without the economy. In turn, nowadays it is impossible to imagine the economy without information technology. Computers help to process and systematize huge volumes of information, as well as to make complex calculations.

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