



## USE OF ARTIFICIAL INTELLIGENCE AND COMPUTERS TECHNOLOGIES IN VARIOUS AREAS OF SMALL BUSINESS

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**Abstract:** This article discusses how the digital economy and its practical importance are associated with the AI. Nowadays, the digital economy and a number of effective technologies related to it, including e-commerce and e-business, are rapidly entering our lives. In the conditions of today's rapidly developing global economy, the digital economy is in the initial stage of its development, and it is highlighted that it can significantly increase people's living standards and this is its main benefit.

**Keywords:** digital economy, artificial intelligence, digital technologies, development, system, internet economy, international competition, digital technology, competition, communication, digitization, hybrid world.

Artificial intelligence refers to the ability of computers to perform mental and creative tasks traditionally performed by humans. With this term, they also understand the science and technology of creating intelligent machines. This definition of artificial intelligence was introduced in 1956 by the American computer scientist John McCarthy. In English, the phrase "artificial intelligence" means "artificial intellect", and the word "intelligence" is understood in English as "the ability to think intelligently". Therefore, artificial intelligence information technology means to create programs to solve problems related to a certain class in the heuristic process of self-learning of a system and to solve these problems with the help of these programs. An empirical test for determining artificial intelligence was proposed by Alan Turing in 1950. According to him, a thinking machine should be understood as a person when a person talks to it. There are several approaches to creating artificial intelligence systems. The most popular of them is the heuristic approach, in which the machine learns the world around it by trial and error analysis. The idea of a probabilistic machine called "Teacherless Learning Process" was first mentioned by Ray Solomonoff at the Dartmund Conference in 1956. Although scientific research on artificial intelligence is being carried out in many fields at the present time, not a single person or scientific group has been able to create a full-fledged artificial intelligence system. Nowadays, artificial intelligence systems have become reliable assistants of people in all fields, but the following question of many people still remains unanswered: What will happen if tomorrow the machine becomes smarter than a person? If we look at the essence of the matter, there is still a long time for this, because at the moment the capabilities of the machine are very small compared to the human. If a machine works based on algorithms, a person works with images. That is why the object that uses the machine resources the most is video information. In addition to video data, a person can process sound, smell, image, coordination of movements online at lightning speed. This means that a machine will become smarter than a person, which is still a myth that has not come true.

Currently, artificial intelligence is used in the following areas:

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- Processing of texts expressed through words;
- Machine learning;

According to the British scientist Stephen Hawking, if people can create a very powerful artificial intelligence, such artificial intelligence can be very dangerous for people. Below are the applications of artificial intelligence in several fields. examples are given. The use of artificial intelligence in electric power engineering At the design level: predicting the generation of energy resources and the demand for it, estimating the reliability of energy-generating equipment, increasing the generation when the demand increases; In production: optimization of preventive maintenance of equipment, increase of efficiency of generation, reduction of losses and reduction of theft of energy resources;

When selling the product on the market: changing prices depending on the time of day and dynamic pricing. At the level of service: automatic selection of the most profitable supplier, compilation of complete statistics of consumption, automatic maintenance of customers, optimization of energy supply depending on the habits and behavior of the customer.

**Artificial intelligence in production**

During the design process: increase the efficiency of creating new products, automatically evaluate product suppliers, evaluate requirements for details and spare parts; In the production process: perfecting the execution process of various issues, automating the assembly lines, reducing the number of errors and reducing the time of delivery of raw materials.

When selling a product on the market: managing the evaluation process, forecasting the volume of services related to the service. In the process of service: improvement of the planning of vehicle fleet routes, management of vehicle fleet resources and improvement of the quality of training of service engineers.

Artificial intelligence in logistics In May of this year, a logistics company that delivers products by express method and IBM presented a report called "Artificial intelligence in logistics". The dialogues of 5,800 real people collected using the Amazon Mechanical Turk online crowdsourcing platform were used. Analyzing the dialogues, the bot not only learned to communicate, but also learned to lie when necessary. According to the engineers, the artificial intelligence focused not only on the things it was interested in, but also began to be interested in other information. After the bot has finished interacting with the customer, it can return to other issues. But the engineers weren't sure if the bot learned to lie through human interaction, or if it happened randomly as a result of learning on its own.

Artificial intelligence in the market of valuable goods and services In November 2017, the Financial Times published an article on the possibility that artificial intelligence could bring about major changes in the market of valuable goods and services. Inspired by the unprecedented success of Amazon, Google, Alibaba and similar tech giants, watch and laundry brands are also trying to use artificial intelligence technologies to expand their customer base.

For example, virtual chat rooms based on messengers can help such brands to collect information about users without breaking the law. In March 2017, at the Baselworld watch show, jewelry brand de Grisogono introduced a chatbot to help customers choose gemstone pieces from the Crazymals collection. This chatbot tells customers about itself, asks users about their interests, and then offers them laundry products based on their interests. According to Olivier de Coente, one of the founders of the Southpigalle company, today's difficult economic conditions and increasing

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competition have encouraged luxury brands to apply innovative technologies, including virtual chats, in order not to lose customers. According to the results of Facebook research in 2016, more than 50% of respondents said that it is better to send a text message than to call them.

According to the Financial Times, artificial intelligence not only improves communication with customers, but is also an important source of information for brands. Because instead of using cookies or analyzing browsing history, the information is sent directly to customers. Based on information obtained from users' social media status and demographic data, brands can make necessary changes to their product management strategy by inferring customer aspirations, desires, emotions, and trends. Based on data processing in the same way, the Montblanc company produced a "smart" watch called Summit in 2017. Although this watch has a classic appearance, it works on the basis of artificial intelligence and is equipped with Google Assistant, which can perform the functions of navigator, translator and voice-controlled assistant. At the exhibition held in Geneva in 2017, the Jaeger-LeCoultre brand introduced its products to all participants. Participants were given a wristband with a QR code and asked to select watches using an iPhone app. This technology allowed the company to collect information about customers with the help of augmented reality technology. According to PwC analysts, in their latest report on the most promising areas of business, the consistent application of artificial intelligence to life will lead to an increase in world GDP by 14% or 15.7 trillion dollars by 2030. That is why the investment of companies in our country in artificial intelligence can bring great results.

If we analyze the situation on a global scale, now artificial intelligence is widely applied to production and agriculture with the help of robots and drones. Artificial intelligence will soon be used on a large scale for monitoring and building information models in areas related to the collection and processing of large amounts of data. Chat bots equipped with artificial intelligence are actively used in e-commerce and finance. They help users to get information about this or that product and perform various operations. For example, Sberbank created a virtual collector called Iron Lady, BTB24 uses chatbots for small businesses, and Alfabank developed trading robots for trading operations. There are several examples of the use of artificial intelligence in online shopping: for example, Amazon and its virtual assistant Alexa, VR viewers, virtual reality stores of the online retailer AliExpress, etc. Artificial intelligence systems are actively used in the telecommunications sector, and virtual assistants and various services are offered to subscribers. We use the aforementioned technologies constantly: Yandex's Alice, Apple's Siri, news aggregators on our computers, and the like are obvious examples of robotic solutions. Innovative solutions with artificial intelligence are actively used in the field of security - recognition and identification of people based on their pictures is an example of this. But when using artificial intelligence systems, we face a number of risks. For example, since the knowledge base is very small in the initial period of using artificial intelligence, there is a possibility of obtaining erroneous results. Another risk is the probability that a human will come to help the AI system when it has difficulty making a decision, the huge amount of costs for the artificial intelligence system, the risk associated with controlling the process of training the artificial intelligence, artificial intelligence lack of a regulatory framework for the use of artificial intelligence, etc. It should also be said that in the last four years, the amount of investments for the development of artificial intelligence has quadrupled worldwide. According to V. Ostrovskayai, head of strategic projects of the Russian Federation (CAF), despite the fact that robotics technologies are developing very quickly, they have not yet reached the level of artificial intelligence. However, "artificial intelligence has a huge



investment potential in the development of high technologies," he says. The development potential of robotic solutions may reach 600-700% in the next two years, and the total size of the RPA(Robotic process automation) market may reach 2.3 billion dollars by the end of 2019. According to some estimates, in the next ten years, one out of every ten working professionals will be replaced by robots. Therefore, it can be said that there is not much time left for the active application of artificial intelligence systems to life. Almost half of all investments in artificial intelligence were made by major players in the software and consumer electronics market. We are talking not only about Google, macOS, iOS, Yandex, Microsoft, but also about auxiliary services, companies engaged in data collection and processing, companies engaged in big data and analytics.

Thus, a global trend for the use of artificial intelligence has been created that will last for several years, and investing in this field will be profitable for the next 15-20 years. Therefore, in the coming years, we can witness the rapid development of artificial intelligence in medicine, cosmonautics, economy, robotics, transport and other fields.

In the last short period of the globalization processes, new direction digital technologies are being created in the field of information and communication technologies, which are one of the main driving mechanisms. Although these technologies are sufficiently different from the classic models of computer networks, they work on the basis of similar principles in some cases. Although the idea of cloud computing technologies appeared at the end of the last century, as a result of the rapid development of digital electronic communication tools and the continuous growth of the demands of users of electronic systems, it became popular from 2007-2008 and quickly entered the development stage. Cloud computing (see Cloud computing) usually provides the user with computer resources and power in the form of a remote Internet electronic service. In this way, the user is presented with computing resources in a "virtual" form, and the user may not be able to get answers to a number of questions, such as how the computer is handling his problems, and under what type of operating system this work is being managed, and in fact, this there is no need to look for answers to questions. Cloud technologies can be compared with "mainframe" technologies (mainframe) if they find similarities and commonalities in their operation. But there are differences between "cloud" and "mainframe" in principle, in particular, the computing power of "cloud" is theoretically unlimited. Grid computing was quite common among the early digital data processing technologies. In the initial period, this direction was considered as an opportunity to effectively use the idle resources of the technical engine processor and to develop a system of voluntary rental of computing power. Grid computing and cloud computing architectures have some similarities in terms of the principles they use. At the same time, the cloud computing model is recognized as the most promising technology due to the fact that it has a sufficiently flexible platform for the use of remote computing resources. Today, large cloud computing consists of thousands of servers located in data processing centers. They provide thousands of applications and resources to millions of users at the same time.

It is very expensive for private companies to buy large computers, ERP, CRM or other types of additional equipment and maintain various servers that require configuration, and therefore the use of cloud technologies is a very convenient digital electronic tool for enterprises. Among individual users, it is very convenient and at the same time to use many cloud services, such as "Documents - Google.doc", "Calendar - Google calendar" and Google presenter, provided by Google. it has been. The reason why the use of cloud technologies continues to develop and achieve success is very simple: their application has a variety of antiquated capabilities and saves a lot of costs on the

organization of infrastructure, services and organization of employees. In a remote data processing center, the software and hardware that allows data processing and data storage can be sufficiently simplified. Almost all such issues and problems are entirely the responsibility of the service provider. This approach makes it possible to standardize them in some sense, even if different operating systems (Windows, Linux, MacOS, etc.) are installed on enterprise computers. Cloud technologies make it easy to access and use the company's shared information for employees and customers who are away from the organization's office but have access to the Internet. Despite the many conveniences for use, cloud technologies also have a number of minor disadvantages. In particular, the user's complete dependence on the global organization providing services. In fact, according to the principle of creation of cloud services, the activity of the enterprise depends on how the service provider and the Internet provider work. Modern cloud technologies are not only ready-made network and server devices, but also gradually entering the market of internal systems (embedded cloud). The idea of connecting and managing various devices in a global network is called "Internet of Things" (IoT). According to Kevin Dallas, general manager of Microsoft Windows Embedded, the idea of the Internet of Things has existed for many years, but the reason why such a network was not implemented was the lack of a single link, that is, cloud technology. According to distribution models, cloud computing technologies are divided into private, public and hybrid technologies.

**Private cloud** – is the company's internal cloud infrastructure and service. Usually, such a cloud information structure is located within a personal or corporate network. The organization can independently manage the cloud belonging to it or entrust this matter to an external contractor. The infrastructure can also be located at the premises of the customer or at an external operator, or partly at the premises of the customer and partly at the premises of the operator.

**Public cloud** - cloud computing services in such an infrastructure can be used by the general public, in which the necessary initial data is provided by its suppliers and placed outside the corporate network. Such cloud users will not be able to manage or provide services to the basic data in the information cloud, all responsibility for the quality of information services is assigned to the owner of the cloud. The client pays a fee for the software, technical and informational resources used, depending on their use. Users are offered the opportunity to use a business system or website with the possibility of large-scale expansion, which is unattainable in other electronic platform solutions of this type, in an understandable way and at the most satisfactory prices. Online services such as Amazon YEC2, Amazon Simple Storage Service (S3), Google Apps/Docs, Salesforce.com, and Microsoft Office Web can be cited as examples of providers of such cloud platforms. It is worth noting that in the public cloud, due to the low and limited level of control of the cloud system by the user, it cannot ensure strict security measures and compliance with regulatory requirements.

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