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MANAGEMENT OF INDUSTRIAL ENTERPRISES IN THE ERA OF THE DIGITAL ECONOMY

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Abstract

In this article are discussed management methods in the era of the digital economy. Such as blockchain, big data method, expert systems. The threats and advantages of modern management methods are considered.

Keywords: digital economy, management methods, information and communication technologies, blockchain, expert systems, big data method.

Currently, the Republic of Uzbekistan is being transformed into an information society based on the introduction of new technologies and platforms. The digitalization of the country's industrial enterprises involves the active use of information and communication technologies, the involvement of stakeholders to participate in the company's activities while creating its value and image in the market. The digital reality for businesses is no longer just an opportunity to play for high stakes, but an obligation, as it is necessary to survive in today's environment.

According to the Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, dated 05.10.2020 No. UP-6079, comprehensive measures are being implemented in the republic to actively develop the digital economy, as well as to widely introduce modern information and communication technologies in all industries and spheres. According to the State Strategy "Digital Uzbekistan - 2030" among the advanced digital technologies are:

- ✓ big data;
- ✓ neurotechnologies and artificial intelligence;
- ✓ distributed ledger systems;
- ✓ quantum technologies;
- ✓ new production technologies;
- ✓ industrial Internet;
- ✓ components of robotics and sensors;
- ✓ wireless communication technologies;
- ✓ virtual and augmented reality technologies.

Intelligent systems make it possible to effectively use big data, which is understood as a set of methods for processing arrays of information to obtain certain dependencies between phenomena.

Big data is a variety of data that is coming at a faster rate and is constantly growing in volume. Thus, the three main properties of big data are diversity, high speed of arrival and large volume.

In simple terms, big data is larger and more complex datasets, especially from new sources. The size of these datasets is so large that traditional processing programs cannot handle them. However, this big data can be used to solve business problems that could not be solved before.

The main properties of big data are volume, speed and variety. Two more properties have emerged over the past few years: value and credibility. Data has intrinsic value. However, in order for them to be useful, this value must be unlocked. Equally important is how reliable your big data is and how much you can rely on it. Today, big data has become a form of capital. Imagine the biggest technology companies. The value of their offerings largely depends on their data, which they constantly analyze to improve efficiency and develop new products. The latest advances in technology have made it possible to significantly reduce the cost of storage and computing, which makes it possible to store and process ever-increasing volumes of data. Modern technologies allow you to store and process more data at a lower cost, which allows you to make more accurate and informed business decisions.

Extracting value from big data is not limited to their analysis (this is their separate advantage). This is an end-to-end research process involving deep analysts, enterprise users, and executives who will ask the right questions, identify patterns, make informed guesses, and predict behavior.

Big data systems are effective in all areas of management, including industry. We can make an obvious conclusion that in the near future, big data methods will gradually penetrate into all spheres of human activity.

Today, expert systems, which are computer programs that use formal logic to access large data of specialized information, are one of the prototypes of artificial intelligence. The development of artificial intelligence will lead to the emergence of expert systems in the most unexpected areas of human activity.

An expert system is a set of programs that performs the functions of an expert in solving problems from a certain subject area. Expert systems give advice, analyze, give consultations, make a diagnosis. The practical application of expert systems in enterprises contributes to work efficiency and professional development of specialists. The main advantage of expert systems is the ability to accumulate knowledge, store it for a long time, update it, and thereby ensure the relative independence of a particular organization from the presence of qualified specialists in it. The accumulation of knowledge allows you to improve the skills of specialists working at the enterprise, using the best, proven solutions.

The practical application of artificial intelligence in machine-building enterprises and in the economy is based on expert systems that improve quality and save decision-making time, as well as contribute to increased work efficiency and advanced training of specialists.

Expert systems are based on the search for answers on specialized topics. The accuracy of the results largely depends on the correct input of the initial task. The main advantage of expert systems is the ability to accumulate and process large amounts of information. Therefore, these artificial intelligence prototypes are very promising and are used in many areas of life. Such systems are indispensable in planning and forecasting, which allows them to be used both in business and at the level of government. Building forecast models can be carried out both on the basis of available extrapolation methods and on the basis of processing big data arrays.

Thus, in the short term, we can assume that the use of expert systems is widely distributed in commercial and government structures, which will free up a certain amount of labor. This has both a negative aspect in the form of rising unemployment, and a positive one - the formation of new necessary skills and competencies.

Another hot topic discussed is the possibility of using the blockchain at different levels of government. Blockchain technology is a continuous sequential chain of blocks containing information built according to certain rules. Literally translated, blockchain is a continuous chain of blocks. It contains all records of

transactions. Unlike conventional databases, these records cannot be changed or deleted, only new ones can be added. Blockchain is also called distributed registry technology, because many independent users store the entire chain of transactions and the current list of owners on their computers. Even if one or more computers fail, the information will not be lost. For the first time, this technology was used by Satoshi Nakamoto when creating bitcoin. Blockchain is essentially a decentralized ledger of data. This technology has been used since the 19th century.

The use of blockchain technology in industry and commerce has many advantages:

- ✓ meeting the needs of the modern consumer;
- ✓ providing access to reliable knowledge about the product;
- ✓ immutability;
- ✓ stability;
- ✓ the ability to track the entire production process;
- ✓ ensuring brand transparency;
- ✓ product authentication;
- ✓ helping to build confidence in the manufacturer and brand loyalty;
- ✓ protecting the brand and consumers from counterfeit products;
- ✓ use in logistics.

However, the decentralized nature of blockchain networks is not without its drawbacks. Compared to a traditional centralized database, it has limited performance and requires much more memory to run properly. The inability to change data, which, on the one hand, is a huge advantage of the blockchain, can be a disadvantage in certain situations.

In the era of digitalization, the importance of the Industrial Internet of Things (IIoT) cannot be ignored. The Industrial Internet of Things is a system of interconnected computer networks and industrial facilities connected to them with built-in sensors and software for collecting and exchanging data, with the possibility of remote control and management in an automated mode, without human intervention.

The Industrial Internet of Things (IIoT) connects machines, cloud computing, analytics and people to make industrial processes more efficient. With IIoT, industrial companies can digitize processes, reshape business models, and increase productivity and efficiency while reducing costs. These resource-intensive companies across industries such as manufacturing, energy, agriculture, transportation and utilities are developing IoT projects designed to connect billions of devices and deliver value in a variety of use cases, including predictive maintenance and quality control analytics, monitoring resource states and process optimization [1].

Typically, an industrial facility has thousands of sensors that generate data. With IIoT, manufacturers, for example, can combine technical data from a single production line, plant, or network of sites, such as industrial plants, as well as assembly and refineries, to proactively improve productivity by identifying and preventing potential process bottlenecks, failures, production gaps and quality problems. The integration of site network data can also improve the efficiency of material flow control and help detect, identify and eliminate factors that slow down production or delivery at an early stage, as well as optimize the operation of machinery and equipment at sites [2].

End-to-end digital technologies are the future of the economy. It is impossible to imagine the life of a modern person without the Internet, just as it is impossible to imagine a business today without remote communication with the customer, without representation in social networks, without the already existing level of data digitization. But this is a very small part of the level that Uzbekistan expects in the near future [4].

New production technologies are “a set of new, high-potential, de facto rapidly developing, but still relatively small in distribution compared to traditional technologies, new approaches, materials, methods and processes that are used to design and manufacture globally competitive and products or products (machines, structures, units, devices, installations, etc.) that are in demand on the world market.” The development and introduction of planned technologies and sub-technologies is a necessary step for the presence of domestic enterprises in the global production market. Today, high-tech processes are the norm, any development must “get” into production quickly in order to become competitive. Therefore, it is vital to reduce the time for bringing new products to the market, as well as to increase the knowledge intensity of production processes, effectively reduce costs at all stages of production, but at the same time maintain high consumer characteristics [2].

Thus, it can be assumed that the digital economy will allow the use of new methods of management, among which it is worth noting the blockchain, the big data method, expert systems and universal decentralization, in all industries and spheres of human life. These methods are promising and are likely to be widely used in the near future. However, for businesses and governments, new management methods provide both opportunities and can pose significant threats. They also do not always fit into the framework of existing management technologies. Strategic and project management, which is characteristic of modern management, are not suitable for the digital economy. The most promising in the future is the network management concept.

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