THE USE OF DIGITAL TECHNOLOGIES IN LIGHT INDUSTRY ENTERPRISES

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Abstract. The article covers the issues of developing the organization of production based on digital technologies in industrial enterprises, analyzes existing problems in this field, studies the factors hindering digitalization processes, and describes the directions of digitalization of production. Features of modern digital production systems are revealed.

Keywords. production process, digital economy, digital technology, automation, software, artificial intelligence, smart enterprise, blockchain.

Introduction. In modern conditions, the digitalization of economic processes and information technologies is penetrating into all spheres of activity. The new development strategy of Uzbekistan for 2022-2026 also plans to make the digital economy the main "driver" of economic development and increase its volume by at least 2.5 times. The task is to increase the volume of software production by 5 times, their exports by 10 times to 500 million dollars. To fulfill these tasks, large-scale measures have been outlined to widely introduce and support the digital economy, and as part of these tasks, new electronic document management systems are being introduced in the country, electronic payments are developing and the regulatory framework in the field of electronic commerce is being improved, electronic infrastructure and commerce are being formed, digital technologies are being introduced in all areas of the economy. Moving to transformation step by step is a step in the process.

With the introduction of digital technologies into production processes, new requirements are being placed on the sources of competitive advantage of enterprises, on effective concepts of their functioning and management. Taking into account the specifics of the transition to the digital economy, forecasting possible problems, as well as developing solutions and proposals to minimize negative consequences are becoming the main condition for organizing the company's activities. An important aspect of achieving competitive advantage is the system of effective management of available resources and business processes in industrial enterprises, based on innovative technologies and methods of optimizing business processes.

Literature review. Digital technologies are a part of our lives today and are widely used in practice in various fields. Several scientists expressed their opinion about digitization in the manufacturing process.

The term "digital economy" was first used in 1994 by Canadian economist Don Tapscott. In his work, the author talked about the impact of digitalization on the economy. He considered the reduction of transaction costs and the emergence of completely new business models to be one of the main advantages of digitalization.

V.A. In his research, Plotnikov defined digitization as "a modern stage in the development of informatization, characterized by a combination of a new device and software, characterized by the widespread use of digital technologies for the creation, processing, transmission, storage and visualization of information." He also lists several advantages that businesses receive when using digital technologies.:

- the flexibility of production increases due to its rapid restructuring, dynamic changes in the characteristics of the production process, which creates a competitive advantage and leads to an increase in potential profits.;
- provides information integration of product lifecycle stages from development to disposal, which allows us not only to optimize production, but also to effectively

and comprehensively address issues of quality, environmental safety, creation of new business opportunities, etc.

Brynjolfsson and Priests (2002) first promoted the digitization of the economy as a topic of discussion in the mid-1990s, providing the first definitions recognized in these definitions as a means of meeting businesses and consumers in virtual worlds.

With the development of digitalization, the company's business models are constantly changing. Therefore, many authors interpret the definition of digitization in different ways. For example, Alexander Kutsman characterizes the digital economy as "a modern type of economy characterized by the priority role of information and knowledge based on the active use of digital technologies to identify, store, and process resources in the production of tangible products and services." Aksenov R. K. He argues that the digital economy is based on the production of electronic products and e-commerce services. Aksenov R. under e-commerce. The electronic movement of capital and electronic products also implies the process of electronic information exchange.

Issues such as the effective use of new information technologies in various sectors of the national economy, methods of introducing digitalization systems into them, principles of digital modeling based on new information systems, evaluation of the effectiveness of using automated information systems in corporate governance, their control, and conditions for the development of the digital economy are reflected in Kabulov's scientific research (1998).

E.In Muminova's study, studies were conducted on the effectiveness of using blockchain technologies in the development of the country's industry, the importance of electronic commerce and electronic contracts in enterprise cooperation. Openness as a result of the ongoing reforms in Uzbekistan, the development of international economic and political ties have created opportunities for modernization, technical and technological re-equipment of industries in the country. As you know, the digital economy also plays an important role in creating

added value today. As a result of the ongoing reforms in the sectors of the economy, the processes observed on the basis of the impact of digital information acquire a key decisive force in the strategic development of industrial enterprises.

Decree of the President of the Republic of Uzbekistan dated October 10, 2020 No. PF — 6079 On the approval of the strategy "digital Uzbekistan-2030" and Measures for its Effective Implementation also noted that the following activities will be carried out in order to develop digital technologies in the real sector of the economy:

- S ensuring automation and management of all stages of the enterprise's supply chain, as well as reducing logistics and procurement costs due to this;
- S improving the quality of products and services through the introduction of modern information systems and software products, reducing their cost, production shutdowns, and increasing the transparency of financial and economic activities;
- C Improving the regulatory framework for the introduction of innovative automated control systems and software products;
- Step-by-step automation of workplaces and robotization of production processes, as well as the introduction of artificial intelligence technologies;
- S improving the mechanisms of interaction with customers (clients) in order to increase sales and improve customer service;
- C Improvement of the management information acceptance support system, including the implementation of a real-time business analysis system;
- S to increase the share of large business entities that have implemented an enterprise resource management system (shp) to 90% in 2025;

With the transition of the economy to a new technological stage, there is a need to modernize the country's production structures, organizational and economic support for production processes, and the formation of modern approaches to management methods. In the context of deepening economic reforms, the processes of automation and robotization of production at industrial

enterprises, the introduction of advanced methods and techniques of production organization, and increasing the level of its digital intellectualization are rapidly developing. Modern approaches to the organization and management of production are based on a complete exchange of information, reducing the number of workers and employees in a short time, increasing their competence, and introducing flexible production systems and robotic complexes. To do this, it is necessary to pay attention to the development of innovative, high-tech production. In the field of digital production, such modern trends as the "industrial Internet of things", "additive manufacturing technologies", "cloud technologies", "artificial intelligence", and "intelligent robotic manufacturing" are developing, and the organization uses simulation and economic mathematical modeling in decision-making. The following advantages and risks of digital transformation of industrial enterprises can be cited.

Pros and cons of risks

New breakthrough digital technologies, artificial intelligence, industrial Internet of things, big data analysis, dependence on borrowed imported technologies, violation of one's own competence, the presence of hidden "bookmarks" in hardware and software

New sales markets, business models, innovative productions, media services the risk of rapid capture of innovative markets by companies in economically developed countries.

Growth of labor productivity, production efficiency, automation, robotization, job cuts, termination of some special jobs, unemployment, social conflicts

Increased efficiency and standardization of services, exclusion of intermediaries, uberization of transport, medicine, education, services, legal uncertainty, increased fraud, ethical issues, social stratification

In modern conditions, the organization of production is considered as a process of effectively combining highly qualified personnel (workers) with the

necessary competencies with innovative tools and products of labor in a certain environment and at a certain time, based on the digitalization of product lifecycle management.

In our opinion, digitalization of production is hindered by such factors as the fact that enterprises continue to use outdated technologies (64%), the lack of specialists with certain experience, knowledge and skills (61%) and weak integration links between new technologies (62%). According to the results of research in the field of digital transformation of production, enterprises using digital technologies and management methods receive 26% more profit than their competitors. The financial results of enterprises that pay little attention to management with sufficient investment in digital technologies are 11% lower, and due to the modernization of the management process, only 9% of additional income can be obtained.

The current economic situation with the beginning of the fourth industrial revolution

is characterized. As part of this revolution, digitized "smart" enterprises are being created. Such enterprises provide an opportunity to produce products that are competitive in the domestic and foreign markets. But the process of large-scale introduction of digital technologies into production processes at industrial enterprises operating in our country today is unsatisfactory. The following circumstances prevent this:

- the lack of a legislative framework governing the new economic order, or its inconsistency with the technological changes taking place at the present stage;

- the emergence of new technologies, objects and subjects of economic relations, the rapid growth of information, which has become a form of capital

- insufficient training of qualified personnel, lack of human capital;

- large amounts of data create large information flows and risks associated with ensuring information security during data transmission, processing and storage;

- the lack of financial resources of the enterprise and the high cost of projects aimed at digitalization of the industry;

- the conservative nature of individual industries. Little attention is paid to these processes, knowing that the widespread use of digital technologies opens up new opportunities for enterprises.

Developing an effective approach to managing business processes and new technologies in an enterprise is not an easy task. The application of innovative management theories and methodologies is required to ensure the sustainable development of an industrial enterprise. The processes taking place in an enterprise require constant attention from management, process owners, and staff involved in the implementation of business processes. In the process of process improvement and optimization, it is necessary to maintain the level of efficiency and progress achieved as a result of the implementation of the process approach. The modern method of the digital economy is characterized by the development of a new generation of enterprise management concepts. These concepts are characterized by processes such as industrial robots, uncontrolled transport, the use of software-based equipment for digital control, the use of 3D printers, storage of large amounts of data in cloud technologies, artificial intelligence, the industrial Internet of Things (Internet of Things, IoT), innovations in blockchain, simulation and mathematical modeling and forecasting., cybersecurity.

When implementing the algorithm of the digital transformation process of an enterprise, depending on the chosen priority, it can be suggested to use the following modern concepts in enterprise management. For example, the use of IoT technologies makes it possible to transform an organization's business processes and significantly increase operational efficiency by reducing the duration of production and the duration of the production cycle; reduce operating costs and increase energy efficiency; reduce the number and duration of equipment downtime, and increase its utilization rate.; provides improved product quality.

The use of multi-coordinate machining centers based on digital control also makes it possible to move working tools during machining when performing turning, grinding, and grinding operations. Such four- to six-axis equipment ensures the simultaneous execution of several processes when processing any complex parts, which, in turn, leads to a shorter production cycle. Digital production ensures a high level of labor productivity and high product quality, remote collaboration between project participants, and contributes to a significant improvement in cost control.

The use of hardware and software complexes for production and control leads to the prevention of errors that occur under the influence of the human factor. The development of the industrial Internet of Things. as a result of the use of artificial intelligence based on neural network technologies, it becomes possible to create a "smart production" capable of promptly making decisions about the rational organization of production in the face of problematic situations. The modern paradigm (visibility) of production organization reflects the possibility of adapting equipment to the production of a variety of products, reducing the number of workers employed in production and maintenance, and moving to the production of new types of products based on the introduction of flexible technologies and robotic systems.

Digital control-based equipment makes it possible to control production processes with high accuracy and make independent decisions based on the data obtained. There are several levels of modern digital production systems. At the physical level, sensors, sensors, and equipment networks are located in the workshops.

Programmable logic controllers (PLC - programmale Logis Controller) are installed at the control and management level of the equipment, with the help of which information is collected.

The highest level of management consists of enterprise resource planning systems (ursp-Enterprise resoures Planning), which are hosted on data center servers.

The organization of digital production makes it possible to reduce the time interval between the order for the design of a product in accordance with the needs of consumers and the manufacture of finished products based on a digital model. The use of digital manufacturing technologies allows industrial robots to create complex-looking products using 3D printers.

The breakthrough of the digital production concept is that already at the stage of product modeling in a virtual environment, production costs are reduced by identifying and eliminating errors. The use of blockchain technologies improves the activities of an enterprise or organization in the field of financial transactions and transactions with tangible and intangible assets, as well as changes the management system by tracking and recording completed transactions (external and internal).

Summarizing the above, the following algorithm (algorithm) is proposedimproving the implementation of digital technologies in industrial enterprises:

When forming a roadmap, it is necessary to take into account the level of material and technical potential and the need for its modernization, as well as the level of personnel potential of the enterprise and the need to improve the skills and motivation of the organization's personnel.

Conclusion

In conclusion, it can be noted that the decision to use modern technologies in the organization of production affects the activities of the entire enterprise, and it is necessary to take into account the risks that may arise with it. Only a thorough planning and comprehensive study of promising technologies, their pros and cons, can you get the desired effect. It is also necessary to take into account the peculiarities of the management of the enterprise in the conditions of digitization.

It is possible to create flexible organizational structures using digital information technologies. During the period of digitization, the organization and management of the activities of an industrial enterprise imposes requirements on the head of the organization for professional knowledge, skills and qualifications in both management, production technologies and it technologies.

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