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"Management of Public Policies: *National Selfishness vs. Planetary Responsibility*"

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DIGITALIZATION OF ENTERPRISE ACTIVITIES

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Abstract

The article examines the influence of digitalization on the development of business structures Submitted definition of digitization. The stages of digitization research are defined. Detected motivational factors of digital transformation of companies. It turned out that digital transformations are often driven by changing consumer behavior and expectations, digital shifts in companies and changes in the competitive environment. The main ones are explained directions of digitization. The key factors that need to be taken into account when introduction of digitization. The impact of the coronavirus epidemic on decision-making has been determined regarding digitization. It is established that to use the possibilities of digital technologies, organizational transformation is necessary. It is noted that many companies fail when trying to implement digital transformations. Highlighted nine practical tips for company managers that must be taken into account when implementation of digitization. The role of CRM, ERP and BPM digital technologies is indicated digitization of enterprises. The analysis of the enterprise's business processes was carried out, their importance was revealed and the degree of problem was estimated. A generalized matrix of business process ranking is given, which is built on the basis of the importance and problems of a certain process. Problem places at the enterprise are revealed. The need for digitalization of preparation and registration of the application for the order of materials and a choice of suppliers is established.

Key words: *digitalization; digital transformation; motivational factors OneBox; CRM; ERP; BPM.*

JEL Classification: *M40, G31.*

Introduction.

Technical progress affects the development of all spheres of human life, work and activity. Leads to the pursuit of a higher level of education, science, and medicine. In order to be modern and in demand on the labor market, you need to develop, constantly improve, develop, and raise your professional level. It is impossible to predict what the world will be like in 10-15 years, because now humanity uses innovative technologies that were unknown even 15-20 years ago.

The requirements, rules and capabilities of the processes of information processing, storage, analysis and management are changing at a particularly fast pace. In connection with this, new types of economy are emerging: innovative, informational, new, knowledge economy, education economy, etc.

The European economy is currently being shaped under the influence of the concept of "Industry 4.0", which was first announced in April 2011 at the Hannover Messe and became the main idea of the World Economic Forum in January 2016 year, in Davos.

1. Literature review.

The problems of the essence and value of digitization are studied in works of researchers. Factors affecting the implementation of digital transformation at the enterprise determined in studies. The results of the impact of the implementation of digitization on enterprises are disclosed in works. But, as a result of increasing the pace of digitalization due to the coronavirus pandemic, the impact of digitalization in within the limits of domestic business structures needs in-depth study.

2. Research methodology, data and hypotheses.

Industry 4.0 is an initiative of the German federal government as a strategic plan for the development of the economy with the aim of fully automating all production components and connecting to a global data exchange network. It is considered the fourth industrial revolution, which is taking place in many developed countries of Europe and is the sixth technological order.

What does the sixth technological order mean? The first is caused by the introduction of the loom, the second technological development is associated with the invention of steam engines, the electric motor is

associated with the third, and the invention of the internal combustion engine and petrochemicals is associated with the fourth. It was on the fourth technological system that Ukraine stopped. The fifth technological order is characterized by the transition to an informational post-industrial society, the level of high technology and constant improvement. It is characteristic of most of the leading countries of the world, which are already striving for the sixth order.

The sixth technological order is the development of biotechnology, genetic engineering, nanotechnology, space technology, artificial intelligence, etc. This arrangement ensures the transition to the fourth industrial revolution - Industry 4.0. (1, electronic resource).

Industry 4.0 is a new reality, the formation of which is facilitated by three trends: demographic, ecological and digitalization. Business is becoming more demanding, dependent on the Internet - already about 70% of the population actively uses it. According to the president of the board of the Future Industry Platform Fund, A. Soldaty, already in 2030, Industry 4.0 will completely change the world: "Industry will become autonomous, interoperable."

According to Jan Peter de Jong, CEO of Microsoft Ukraine, augmented reality, Big Data and artificial intelligence will change production. The application of the two latest technologies in Ukrainian agriculture will improve crop growth and reduce companies' costs of pesticides and fuel. Such cases have increased the income of agricultural companies in the USA and Africa by 10-25%, noted Peter de Jong.

Scientists distinguish nine developments (implementation) of NTP that form and are the basis of Industry 4.0:

1. Big Data and Analytics. Large arrays of information coming from various sources require quick processing and management decisions. Currently, Big Data and Analytics provides: storage, management, cleaning, search, analysis, visualization, integration and grouping of large volumes of data. Big Data and Analytics allows you to analyze the entire array of information in full in a short period of time (on request, in minutes).

2. Autonomous Robots are robots capable of performing tasks independently, without human intervention. They are used to perform difficult and dangerous work for humans. It is believed that autonomous robots are the basis of cyber-physical systems and an important component of Industry 4.0.

3. Simulation is typical at the stage of creating (designing) a business process. The goal of Industry 4.0 is to introduce modeling into the production process. That is, production operating in the real (physical) world will have a virtual model developed to the smallest detail. The real and virtual model will fully correspond to each other and will be closely related to each other. For example, changes to physical (real) production will first be made and processed on a virtual model, and then made to the real production process. This will help save money and time, eliminate miscalculations, and deficiencies in production. Because errors in a virtual model have less global consequences than in real production.

4. Horizontal and Vertical System Integration – horizontal and vertical integration systems involve competition among enterprises and companies. Horizontal integration - acquisition by one company of another, completely adjacent. Vertical integration is the acquisition by a certain company of the entire production chain, even an industry. Industry 4.0, within the framework of horizontal and vertical integration, unites various enterprises into a single information system, a single information space. All objects will be connected to the Industrial Internet of Things and will receive complete information regardless of the information level.

5. The Industrial Internet of Things. Industrial Internet of Things is a key technology of Industry 4.0. This is a single network of industrial (production) objects with built-in sensors and software for data collection, analysis and exchange with possible remote control.

6. Cybersecurity. Cyber security is a system of measures to protect places of data storage, processing and transmission. Constant checking of electronic information flows, protection against malicious cyber attacks is a set of measures currently carried out by every company. In Industry 4.0, objects in the Industrial Internet of Things, a single information system, will have an increased level of protection, a high level of organizational cyber security measures.

7. The Cloud. Clouds (cloud technologies) are a secure system for storing and integrating a large amount of information, which should be available to the user from anywhere in the world. In Industry 4.0, cloud technologies are actively used, information protection, speed and ease of processing are constantly being improved.

8. Additive Manufacturing. The basis of additional (additive) production is 3D printing, which allows you to create a prototype of future

finished products or mock-ups of parts. Additive manufacturing creates small batches of goods, allows to reduce material costs and costs of product delivery.

9. Augmented Reality. In Industry 4.0, the speed of error elimination and management decision-making is expected. The use of elements of virtual reality significantly reduces the cost of working time for product development and error elimination. Because the employee instantly has detailed information about the product, production elements, or the cause of a production failure.

Cloud technologies are designed to save data online in the cloud, which can be accessed by both internal and external users. Thanks to cloud technologies, business processes can be carried out continuously, only a stable connection to the Internet is required. At the same time, with an unstable connection or problems with the network, the Internet can become a significant disadvantage.

However, there are many more advantages in using cloud technologies, which is why they are actively used in the activities of well-known companies such as Microsoft, Apple, Google, Yahoo, Amazon, Cisco, etc. The most famous software for cloud accounting systems for enterprises are Xero, Kashoo, "My business", "Elba", SAP Business All-in-One, "Prostoy biznes" and others. "Cloud" technologies are being actively implemented in the practice of using the most common accounting programs in Ukraine today: 1C, "Bukhsoft", "PARUS", "iFin", "iforma" and others.

Researchers are considering the application of Internet of Things technology in the future, subject to changes in organizational approaches to the primary accounting of the enterprise. When providing production with special devices that read information and transmit it for the automatic formation of the accounting database, which will allow freedom from the formation of primary documents.

Digitalization of accounting and analytical processes is a complex and expensive process that has a number of advantages. The main of which is freedom from constant paper document circulation and the ability to work continuously from anywhere. Digitization will lead to an increase in the value and efficiency of information for enterprise management processes.

The above components of Industry 4.0 are typical for enterprises providing services, but they can also be used in food, forestry, processing, automotive, metallurgical engineering and, especially, in agriculture. The

spread of digital technologies and management systems has a beneficial effect on the quality of goods and services, customer service and information provision of subjects of market relations. However, problems may arise at various stages related to issues of economic security, technological equipment of networks, the rationality of management decisions regarding the implementation of a single digital infrastructure.

The events of recent years (pandemic, military operations) have emphasized the importance of digitalization and the development of Industry 4.0. Companies that focus on digitalization quickly solve the issue of their existence - remote work from any corner of the world is established, 3D printing reduces the cost of products, the use of artificial intelligence elements.

In April 2020, e-commerce in Poland grew by 200 %, and in Belgium by more than 120 %. The leading countries of the world (USA, Germany, Great Britain) have developed legislation for life in the new world, digitalization. Countries that do not support the Industry 4.0 development strategy may eventually lose their place in the market, their business projects will become unprofitable, and their products will be uncompetitive.

For most of the countries that are members of the European Union, the provisions of Industry 4.0 and its development are a priority. According to the results of 2021, Denmark, Finland and Sweden will be the leaders of digitization. Finland ranked first in the human capital component (digital skills of citizens). Denmark is the first in the "affordable connection" component.

The countries of Northern Europe are leaders in Industry 4.0 among the countries of the world. This is evidenced by the global digitization of all production processes and the life of the population, established networks, the spread of the Industrial Internet of Things, discoveries in the IT field, etc.

Based on the study of countries such as Germany, China, Japan, South Korea, Great Britain and the USA, it is determined that the main economic opportunities of Industry 4.0 are better customer service, new business models, expansion of the portfolio of products and services, optimization of production and higher sales, and threats are adoption issues, irrelevant decision making, migration issues, standardization issues, and data security.

Bulgaria, Greece and Romania, where the digitalization of society and production remains at a low level, were included in the list of countries that, according to the results of 2021, have minor movements towards Industry 4.0.

This list includes Ukraine, which in 2019 ranked 69th out of 100 countries among countries implementing digitalization.

In Ukraine, digitalization began to spread more actively starting in 2020, and reached even greater distribution during 2022. In the conditions of military operations, enterprises and companies switched to remote employment, training is conducted using online platforms, digitalization of many production processes has spread.

Among the main obstacles to the spread of digitalization within the framework of the development of Industry 4.0, the following can be distinguished:

1. personnel policy – professional development of enterprise employees and adaptation to digitalization processes;
2. a long period of setting up digitization processes - in some cases from one to three years;
3. high cost of setting up digitization at enterprises. The solution to this issue can be a gradual transition to full digitization and automation (primarily automate document processing, switch to cloud technologies, etc.).

3. Digitalization of enterprise activities.

Let's give an example of how quickly the digitalization process can take place. In 2020, Vodafone Ukraine increased the volume of electronic document circulation by 4 times. In the future, the company's management plans to leave only 15-20% of the documents required by law in paper form.

IT technologies are the driving force of Industry 4.0, new discoveries, implementation, know-how are its basis. For the development of Industry 4.0 in Ukraine, it is necessary to introduce changes at all levels:

1. To introduce updated educational programs into the educational process, which will involve global digitization;
2. Up-to-date training software updates;
3. IT technologies should be predominant. Training of IT specialists should interest young people and be accessible;
4. Teachers, specialists of the IT industry must have available opportunities for training and professional development.

Of course, the state should be interested in the development of Industry 4.0, only with state support are changes possible at all levels of implementation of the elements of the fourth industrial revolution.

For the development of Industry 4.0 in Ukraine, there must be constant cooperation between the state, business, education and science. The state must provide full support for the development and actualization of education, science, loyalty to business, which will participate in financing the development of Industry 4.0.

The main problems of digitization that arise in Ukraine include the uneven coverage of the Internet and its low speed, the presence of people without identification (ID cards), a significant percentage of state bodies whose services remain undigitized, and the low level of digital knowledge of the population.

On the portal "Action. Digital Education" The Ministry of Digital Transformation created a series in which media representatives explain to the public how to improve their digital skills.

4. Conclusions

Digitization is a fairly new concept for Ukraine. The process of spreading digitalization started in 2020 and became more important in wartime conditions, when most companies and a significant share of educational institutions began to work online, the level of remote work increased. According to the latest statistical data, the level of remote employment has increased 4 times.

There are still a lot of digitalization problems in Ukraine, but there are already steps that should form a coherent management model based on the latest technologies (Savon, 2021). Digitization consists in the implementation of the latest digital technologies in life, business processes. This can be achieved only if there is a change in both the technological, educational, and managerial components. For enterprises and companies, this will lead to increased employee productivity, customer satisfaction, and increased profitability of the enterprise.

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