

DEVELOPMENT OF STAFF OF INNOVATIVE ENTERPRISES IN THE CONTEXT OF DIGITALIZATION

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Development of Staff of Innovative Enterprises in the Context of Digitalization

The aim of the article is to study the aspects of staff development of innovative enterprises in the context of digitalization. The analysis and generalization, together with the systematization of current trends and scientific works taking place in the digital economy, made it possible to consider the global features of digitalization of the economy and the specifics of domestic trends in the context of a hybrid war and to identify important components of the staff development system that can have a significant impact on the development of staff of innovative enterprises. As a result of the study, new directions of staff development of innovative enterprises have been allocated, which can be used in practice by a proactive worker of an innovative enterprise, as well as employees of the staff management system of enterprises, scientists and other interested persons. The vectors for the development of staff of innovative enterprises in the context of expanding the capabilities of artificial intelligence and the spread of technologies, as well as in accordance with the known conceptions of the world, are determined. It is substantiated that the development of staff of an innovative enterprise will allow more active dissemination of technologies, contribute to their improvement in the process of use, provide advantages to enterprises that will be the first to apply them in practice in a new competitive field of goods and services. Further improvement and deepening of knowledge on the development of staff of innovative enterprises can contribute to the formation and improvement of its competitive advantages, as well as lead to the creation of a new categorical norm for the characteristics of staff of enterprises and organizations in the digital economy. Directions for further research on this topic are quantitative analysis of components and indices of digital development by categories: knowledge, technology and readiness for the future, also allocation of significant factors influencing the qualitative indicators of the results of the staff of innovative enterprises of Ukraine on the basis of building a model of interconnection of the key components of the staff development system of an innovative enterprise and the results of its activities.

Keywords: innovative enterprises, digitalization, staff development, reskilling and upskilling, digital economy, world conceptions (SPOD, VUCA, BANI).

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Мажник Л. О., Литовченко І. В., Шевченко С. О. Розвиток персоналу інноваційних підприємств в умовах диджиталізації

Метою статті є дослідження аспектів розвитку персоналу інноваційних підприємств в умовах диджиталізації. Аналіз та узагальнення, разом із систематизацією сучасних трендів та наукових праць, що відбуваються у цифровій економіці, дозволив розглянути світові особливості диджиталізації цифрової економіки і специфіку вітчизняних тенденцій в умовах гібридної війни та виявити важливі складові компоненти системи розвитку персоналу, що можуть мати суттєвий вплив на розвиток персоналу інноваційних підприємств. У результаті дослідження було виділено нові напрями розвитку персоналу інноваційних підприємств, які може на практиці використовувати проактивний робітник інноваційного підприємства, а також працівники системи управління персоналом підприємств, науковці й інші зацікавлені особи. Визначено вектори щодо розвитку персоналу інноваційних підприємств в умовах розширення можливостей штучного інтелекту і поширення технологій, а також відповідно до концепцій світу. Обґрунтовано, що розвиток персоналу інноваційного підприємства дозволить активніше поширювати технології, сприятиме їх удосконаленню в процесі використання, а також надасть переваги підприємствам, що першими будуть їх застосовувати на практиці на новому конкурентному полі товарів і послуг. Подальше удосконалення та поглиблення знань щодо розвитку персоналу інноваційних підприємств може сприяти форму-

ванню та удосконаленню його конкурентних переваг, а також призвести до створення нової категоріальної норми ознак персоналу підприємств та організацій у цифровій економіці. Напрямками подальших досліджень з означеної проблематики є кількісний аналіз компонентів та індексів цифрового розвитку за категоріями: знання, технології та готовність до майбутнього, а також виокремлення вагомих факторів впливу на якісні показники результатів діяльності персоналу інноваційних підприємств України на підставі побудови моделі взаємозв'язку ключових компонентів системи розвитку персоналу інноваційного підприємства та результатів його діяльності.

Ключові слова: інноваційні підприємства, диджиталізація, розвиток персоналу, рескілінг та апскілінг, цифрова економіка, концепції світу (SPOD, VUCA, BANI).

Рис.: 2. Табл.: 1. Бібл.: 20.

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Introduction. The relentless global trends in the digitalization of all management processes also have a direct impact on the peculiarities of staff development. To date, world experience demonstrates that it is the presence of recorded results in digital data in many areas of enterprise activity that allows automating processes, accelerating the features of interaction procedures and obtaining results of activities in modern conditions of global digitalization.

It is worth noting that it is the staff that carries out the organizational integration and use of digital technologies in practice in the activities of enterprises. According to statistics, at the present stage of development of the digital economy, it is innovative enterprises that are the first to respond to the emergence of various technological innovations and directly implement, probate and test them, as well as fulfill further active dissemination of various digital applications and the results of artificial intelligence achievements.

Since, in the era of the digital economy, the tools and components of the digitalization process are becoming more and more widespread in various areas of management, in particular financial and tax spheres of activity, various educational processes, etc. [3; 6; 15], which have an increasingly active impact on the activities of enterprises [12], there is a need for an additional study of the components of the staff development process of directly innovative enterprises [3], as these are usually exemplary organizations and most often, in terms of metrics, they act as indicators of trends and potential generalized trends, which in the future usually become widespread among global organizations in practice.

However, at the same time, it is necessary to focus on the processes that take place among the development of staff of domestic innovative enterprises, which are accordingly associated with the potential expectation of recession processes in the domestic economy and the peculiarities of management in the conditions of military aggression.

Analysis of the latest research on the problem. In modern economic conditions, the concept of the digital economy is increasingly associated with various digitalization processes, as they should affect the peculiarities of training staff of enterprises and organizations [2; 15; 19].

At the State level, special attention is given to the development of the staff of the Administrative Service Centers and the staff who provide advisory support, contact with the population of the country after training and increasing the level of competence on certain issues of digitalization for the provision of the list of public services [11].

Because of the ongoing military aggression, many enterprises suffer from a shortage of staff, so staff development is becoming an increasingly relevant topic among domestic enterprises and organizations.

The issues of innovative development of industrial enterprises are considered by L. L. Antonyuk, L. V. Bilozor [4], B. Grepon [1] and others, aspects of innovative development of industrial enterprises in the context of digitalization are paid attention to by such domestic scientists as I. Mihus, Ya. Koval [10], S. Makarenko [7].

However, at current, an extremely difficult situation is being formed for Ukraine with the staff of enterprises, so it is worth paying additional attention to the consideration of staff development, though the constituent aspects on this topic were considered by such scientists as M. Rudenko, D. Lakutin [14], I. Dashko [5], no proper attention was paid to the development of staff of innovative enterprises, so the topic of the present research appears relevant.

Therefore, direct attention should be paid to the peculiarities of the development of the existing staff of innovative enterprises in the current conditions of intensification of digitalization processes, since these processes open up a list of positive economic prospects and form a number of advantages for enterprises and organizations that use them in practice.

The aim of the article is to identify the components of staff development of innovative enterprises in the context of digitalization.

Presentation of research results. The carried out analysis of digitalization processes makes it possible to distinguish several levels, in particular: global; State; macro level by industry; macro level, with considerations of the features of digitalization in the activities of an individual enterprise; and personal, which directly concerns the staff of the enterprise and citizens of the country. The article deals mainly with innovative enterprises that are the first to respond to changes and introduce the latest technologies into the practical activities of the organization, so that special attention is paid to the staff, who are the first to introduce into practice certain tools that facilitate and optimize their work.

It should be noted that taking into account the global trends in the spread of the digital economy due to the spread of digitalization processes, the State authority bodies of Ukraine are making a significant amount of efforts to disseminate these strategic decisions [18] towards the development of the digital economy and staff, and that is directly related to innovative enterprises.

It is worth noting that the development of technologies and the formation of the digital economy have a significant impact on enterprises, since there is a need to form systems and databases of enterprises, which should be coordinated with the external and internal systems of users in terms of content.

One of the significant features of the domestic digitalization process is that it is innovative enterprises, mainly in the IT sector, that act as accelerators of digitalization processes, so special attention should be paid to the development of staff of innovative enterprises. In particular, one of the basic tasks for the State authority agencies is the formation of a high-performance digital infrastructure [2, p. 166–167] by means of the development of communication technologies, the Internet of Things and blockchain (Fig. 1, developed by the authors). Interaction of constituent components in the trinity of production, educational and public sectors through the formation, improvement of constituent components, synchronized coordination between them and support on the part of the State, together with investors – all this will contribute to the development of Ukraine's digital infrastructure and improve the interaction of citizens, enterprises, educational and government institutions in the context of digitalization.

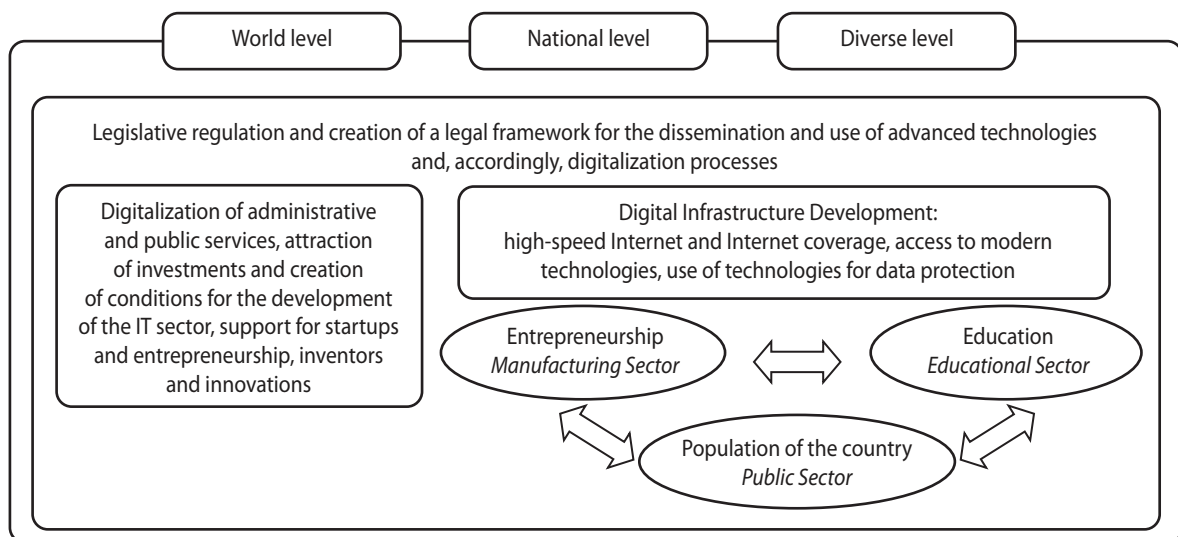


Fig. 1. Components of the formation of digital infrastructure in the context of digitalization

Source: developed by the authors based on [2; 18; 19]

The specificity of the development of staff of innovative enterprises in the context of digitalization lies in the application of active integration into management processes of the components of the digital economy tools in the following areas:

- modernization of the automated information complex of management of an innovative enterprise;
- electronic interaction between the components of the enterprise management system;
- formation of a system for accounting for the characteristics and key features of staff activities, which is reflected in the quantitative indicators of KPIs;
- improvement of components of normative legal acts;
- introduction and dissemination of the use of e-office work;

- development and formation of State statistics and reporting;
- tools for managers, etc.

The results of scientific and statistical studies of domestic enterprises indicate a low level of innovative activity of domestic industrial enterprises, especially in terms of the purchase of machinery, equipment and software [15, p. 89], although this situation is preceded by a number of reasons, in particular, military aggression against our country, reduction in economic activity and reduction in the number and level of employment of staff of domestic enterprises, which negatively affects the development of staff, including the development of staff of innovative enterprises.

The development of staff of innovative enterprises in the context of digitalization should be carried out in the following

areas: in accordance with the needs of retraining of the company's staff, depending on the needs for staff skills, in particular reskilling and upskilling [8], taking into account the ability to constantly learn; improvement of qualitative features of the content of soft and hard skills of the staff. It is worth noting that reskilling is sometimes considered as a variation of staff rotation and horizontal movement of staff to different levels of responsibility within the relevant project activities, while upskilling is considered not only as advanced training, but also as advancement of meta-skills, including self-discipline, self-motivation and self-organization, improvement of other individual skills.

However, the specificity of the development of staff of innovative enterprises lies in the matter that occupying the same position at different enterprises, the staff will have different responsibilities and, as a result, a list of competencies, respectively, and this will affect the results of the activities of such staff,

so it is increasingly difficult to put forward certain standardized requirements for staff members who must hold certain positions. Again and yet again, the staff of innovative enterprises should be capable of a list of universal features, which also provides a surplus value to the candidate when changing the type of activity among most organizations in positions with flexible requirements and responsibilities. Due to the specific conditions for the functioning of innovative enterprises and enterprises in general in the modern world in its process of permanent digitalization, when the SPOD world has long changed to VUCA and now there is an active transition to the new BANI world (see Tabl. 1), it should be understood that changes are becoming a permanent phenomenon, therefore, the components of staff development should also transform the configuration at domestic enterprises as quickly as possible, primarily at innovative enterprises, eventually extending these processes to other domestic enterprises.

Table 1

A characterization of the external environment of the concepts of the world as the basis of staff development

Sign	SPOD	VUCA	BANI
Abbreviation	Steady; Predictable; Ordinary; Definite	Volatility; Uncertainty; Complexity; Ambiguity	Brittle; Anxious; Nonlinear; Incomprehensible
The emergence of the approach	The period of SPOD influence ended in the 80s of the last century due to the dramatic development of technology and the increase in the amount of information	Appeared in 1987, when this concept was formed and voiced by the US military, which in 2007-2009 gradually passed over to the world of business	Period of occurrence: times of Covid-19 and military aggression of 2019-2022.
Current conception	Being a leader means being able to adapt to the changes of turbulent times and to manage them	The VUCA Prime conception of the leaders of this world are distinguished by Vision, Understanding, Clarity and Agility. The conception assumes that it is necessary to study and process huge amounts of information, quickly respond to new facts	The current concept in the world, of BANI: Build up (the ability to recover, rebuild and complete); Attentiveness (attentiveness to the present, to oneself and to the environment due to the development of the individual's emotional intelligence); Non-dogmatic (the presence of critical thinking; the ability to perceive information that contradicts the prevailing ideas, the absence of blind faith in authority); Intuitive (intuitive grasping or transcensual thinking) or RAAT, which stands for Resilience; Attention; Adaptation; Transparency

Source: developed by the authors based on [9; 16]

Making forecasts in the changing current conditions of today is an extremely difficult task, but there is an assumption [16], that as a result of the acceleration of the development of the world, the conception of the VUCA world, which existed 20 to 40 years long and was gradually replaced by the BANI concept of the world, may also be replaced by new trends and conceptions of the world with a certain probability in 5 to 10 years.

The development of staff of innovative enterprises in accordance with the modern requirements of the external environment implies that it is necessary not only to acquire signs of belonging to the conception of staff development of the BANI world, which are rapidly transforming from the peculiarities of staff development in the VUCA world, one also has to bear in mind that the specifics of the features of staff development in the SPOD world remain to be of relevance, while in order to achieve

a faster and better result, an innovative enterprise should adhere to the essential contents of the above considered topical systems of organization of the world.

It should be noted that the trends in staff development have always had high speeds, but today, for qualitative total changes at the State level, Ukraine should rebuild and form systematically constituent components that will create the basis for further development of staff at not only innovative enterprises that are motivated, but also for a significant layer of entrepreneurs, scientists and people interested in development in general to promote the successes and achievements of the domestic economic system. For this end, the formation of a technical basis for access to digitalization opportunities and technologies, as well as for the collection of high-quality data, namely the filling and verification of registers, the availability of access for

institutional structures to other registers, the formation of open data, and the formation of analytics is fulfilled in an active manner. Formation of e-content is being accomplished due to the availability of information on the technology and areas of its application and further development. Digitization of documents has certain advantages, which include: saving money on costs associated with printing documents; reducing waste and creating the availability of free space as a result of avoiding the need to create a pile of documents on paper that lose their relevance over time; the possibility to quickly and efficiently search, sort the necessary information in accordance with the request and any other analytical manipulations.

It should be noted that depending on the age group of the staff of an innovative enterprise, in accordance with belonging to a certain generation, its development usually takes place according to a certain strategy. Statistics [20] show that the processes of digitalization in the field of staff development have certain features, which consist in the application by an innovative enterprise of strategies that usually correspond to simple, but not particularly effective and reliable tools. Staff, depending on the age group to which they belong and the stereotypes and prejudices that the individual is endowed with, chooses either effective (as a rule, categories of staff comprised of younger age groups, according to the theory of generations) or convenient tools that do not always imply rational choices to achieve the best results of the organization's activities – this choice is more typical for somewhat older age groups.

ChatGPT	Google Bard	Being AI	Cloude	Midjourney	Pictiry Veed. IO
HeyGen	Runway	Glasp	Chatpdf	Dall-E3	Leonardo Firefly
Tome	Slides.ai	Decktopus	Beautiful.Ai	Harpa	
Jasper.ai	Grammarly	Promptpal	Snack Prompt	OctiAI	G-prompter
Adobe Products	Figma	Microsoft Designer	Canva	InVideo	Zyro InShot
Synthesia	Deepbrain	Gamma	Durable	Quiltbot	Copy.ai
Copysmith	MarketingBlocks	Ulzard	Hatchful	Galileo	

Fig. 2. A list of useful tools for staff development, created on the basis of the achievements of artificial intelligence and neural networks when working with social networks

Since Ukraine is a country that ranks among the first-order world countries that implement artificial intelligence achievements in various business processes, as well as institutional and organizational processes at the State level, it should be noted that the management pays considerable attention to the development of staff directly and primarily to innovative enterprises that are the first to introduce technological changes and promote the spread of innovations. Currently, progressive forms of modernization of business processes are being created, thanks to which not only the structure of market entities is changing, but also the technology of managing market entities. It is assumed [10, p. 164], that the development of digitalization of business processes at enterprises contributes to:

- training of qualified staff specializing in electronic communications;
- development of new services for convenient online orders;
- optimization of business processes in the field of logistics and sales, etc.

During the period of staff development of innovative enterprises in the process of digitalization, the economy allows for greater openness and transparency in the management of public

and private enterprises, which ensures greater trust and in difficult current times helps to attract investment in the country's economy. Also, the positive effect of digitalization [13, p. 318] is the growth of the competitiveness of the national economy in the international market. Digital technologies make it possible to create innovative products and services that meet international standards and customer needs, at the same time, there is a gradual transition from traditional models of the economy to the introduction of innovative high-tech solutions, which requires permanent changes both on the part of the government of Ukraine and on the part of entrepreneurs and citizens, because only by joining forces together can we overcome the socioeconomic crisis and ensure the economic development of the country in difficult times of transformation.

Thus, S. V. Skrypnyk and O. L. Shpatakova note [15, p. 13], that the advantages of artificial intelligence for the domestic economy are to increase productivity and profitability, ensuring an increase in investment and in cost reduction, as well as creating jobs within the automation of new business processes and solving other problems.

It is worth noting that the current and projected size of the artificial intelligence market in Ukraine for the period from 2020 to 2030 is steadily growing, although at the beginning of the period there were slight fluctuations, as the full-scale russian-Ukrainian war in some way slowed down the transition of the economy to artificial intelligence technologies, accordingly, the implementation of the conception of artificial intelligence was significantly paced down, but regardless of the obstacles, domestic entrepreneurs and innovators actively continue as with the staff development, so with implementation in their everyday routines of results of artificial intelligence achievements (Fig. 2, developed by the authors).

Conclusions. Thus, based on the results of the study, it can be concluded that the dynamic development of the digital economy and the processes of digitalization and the impact of technology on the world leads to a permanent need for changes, including changes in the concept of staff development. Innovative enterprises respond to these needs in the first place, acting as bright indicators of change. The advantages of staff development of innovative enterprises are that these enterprises in the

context of digitalization receive not only an increase in staff productivity, but also due to the use of the advantages of artificial intelligence, they have a reduction in costs and an increase in profitability due to the automation of a certain list of business processes and the improvement of organizational components of the management process.

The conscious formation of the staff development system by the management of innovative enterprises creates competitive advantages in the context of active digitalization due to the anticipatory action and implementation of the system of using modern components of the digital economy and integrating the features of the BANI world into current business processes.

The directions of further research on this topic are the quantitative analysis of the components and indices of digital development by categories: knowledge, technology and readiness for the future, as well as the allocation of significant factors influencing the qualitative indicators of the results of the activities of the staff of innovative enterprises of Ukraine on the basis of building a model of the relationship between the key components of the system of development of the staff of an innovative enterprise and the results of its activities. Also, prospects for further research in this direction are to determine the degree of influence of certain components on the quality and speed of development of signs of staff of innovative enterprises, as well as in general on the activities of staff of any other enterprises, and at the conceptual level there is a need to clarify certain concepts and their logical use in practice. Further improvement and deepening of knowledge on the development of staff of innovative enterprises can contribute to the formation and improvement of its competitive advantages, as well as lead to the creation of a new categorical norm for the characteristics of staff of enterprises and organizations in the digital economy.

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