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LXP AS A TOOL OF THE ORGANIZATIONAL LEARNING OF THE PERSONNEL OF IT ENTERPRISES

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Abstract. *The article examines the peculiarities of organizational learning of personnel in the conditions of the formation of "Industry 4.0". Attention is focused on the concept of microlearning, which is becoming more and more widespread in the practice of IT enterprises, as it allows making learning an integral part of the daily work of employees and forming in them a culture of lifelong learning. Changes in the requirements for personnel competence under the influence of the emergence of "Industry 4.0" are analyzed and the features of T-shaped employees, which IT companies focus on when forming teams, are described. A comparative analysis of LMS and LXP was carried out, their main features were revealed, and the advantages of using the latter to improve the system of organizational learning of personnel were also given.*
Keywords: *personnel, human resource management, LXP, digitalization, distance learning, "Industry 4.0"*

Problem statement. In the conditions of the formation of "Industry 4.0", there is a rapid development of digital technologies that fundamentally change all business processes in organizations. This is largely due to the spread of such technologies as artificial intelligence, big data, "cloud" technologies, etc. More and more operations are moving into the digital space, the formats of interaction and communication are changing significantly, and the availability and volumes of information are increasing. This leads to the need for the rapid acquisition of new skills by the personnel, as well as the constant updating of their knowledge, which quickly loses its relevance. Therefore, more and more attention has recently been paid to the processes of organizational learning of personnel, which can ensure the solution of such tasks, due to the introduction of modern and innovative tools. This is especially important for IT companies that largely rely on intellectual capital to ensure their long-term competitive advantages**.**

Analysis of recent research and publications. A significant share of the works of domestic and foreign researchers is devoted to the study of issues of organizational learning, the variety of its methods, and the peculiarities of its functioning in the conditions of the formation of "Industry 4.0". Among them are V. Vergelis, V. Zhuravlev, V. Vasiliev, I. Dashko, K. Kasemsap, S. Bersin, M. Ogiri, J. Scott, S. Wasserman, K. Faust, D. Combe, G. Siemens, M. Feng, J. Arla, A. Kolot, O. Gerasimenko, O. Kravchuk, I. Varis, S. Voitko, T. Zatonatska, O. Russiyan, A. Malik, K. Govender, V. Adegbite, M. Alli, N. Vark. However,

despite such a significant number of works, many questions remain unsolved, especially in terms of the use of new digital technologies for the learning and development of employees.

Setting objectives. The aim of this article is to investigate the possibilities of implementing LXP to improve the organizational learning system and to identify its benefits. To achieve this, the following methods were used in the study: analysis and synthesis, a logical method for identifying patterns of organizational learning in the conditions of the formation of "Industry 4.0", a method of comparison and critical analysis for comparing different concepts of learning and different learning tools.

Presentation of the basic material of the research. The formation of "Industry 4.0" is accompanied by the transformation of many processes of organizational learning of personnel (Table 1). Considerable attention is paid to building a culture of lifelong learning, integration of learning initiatives into the daily work of employees. Employees act as the main initiators in the formation of their individual learning plans, they almost independently form their further development trajectory. This necessitates the revision of existing learning strategies and the formation of radically new ones.

Table 1

Changing approaches to organizational learning of personnel in the conditions of "Industry 4.0"

From	To
«Know all»	«Learn all»
Planned learning programs	Lifelong learning culture
Periodic learning	Continuous, digital-based learning
Company-directed learning	Self-driven learning
Homogenous learning	Personalized learning

**Compiled by the author on the basis of [10]*

Therefore, one of the actively developing concepts is microlearning. It is based on the idea of developing small pieces of learning content and flexible technologies that allow employees to access them at any time and under any conditions, for example, during a work break or from transport [9]. Educational content is published in a rather short form and is devoted to the coverage of one main topic, limited by the technical capabilities of the software and devices through which it is provided [3].

Table 2

Comparative characteristics of macrolearning and microlearning

Criterion	Macrolearning	Microlearning
Learning context	Formal learning	Informal learning
Time for learning	A few hours or a few days	From a few seconds to 15 minutes
Content	Learning modules that cover a wide range of topics and ideas	Small chunks of information that focus on one specific idea or topic
The structure of the learning cycle	Hierarchical, sequential, pre-planned structures consisting of a series of chapters or lessons, each of which combines several learning objects such as texts, images, audio, video	Dynamic, flexible structures formed by employees in the process of learning
Target group	Employees focused on obtaining thorough knowledge in a certain field	Employees aimed at solving specific practical tasks

**Compiled by the author on the basis of [3, 6, 9].*

Learning activities should be user-oriented. The environment in which it takes place should encourage employees to explore, use and create content and provide tools for active participation, such as text editing, commenting, tagging, etc. Micro-content can be distributed through communities of practice and used for different purposes. In such communities, for example, it can be a topic for discussions and debates [3].

Microlearning should help employees acquire basic skills such as flexibility and adaptability; promote the development of creative skills, as well as problem-solving skills; use the communication skills of employees as a way of supporting the social production and reconstruction of knowledge during learning and work activities and try to improve them by offering employees ways to analyze their own communication styles [9].

Under the conditions of the formation of "Industry 4.0", there is also a change in the priority competencies that employees must possess. In particular, the following are becoming increasingly important: desire for self-development, continuous acquisition of new knowledge, skills and abilities; readiness for changes and the ability to quickly adapt to new environmental conditions; critical thinking; teamwork skills; the ability to process and analyze large amounts of data, etc. [11, c. 277]. Thus, training programs of IT enterprises should fully ensure the development of such a set of competencies.

Researchers and practitioners have developed a classification to characterize the knowledge of specialists based on content-graphic forms, in particular, they distinguish I-shaped, Pi-shaped, H-shaped, stroke-shaped, and T-shaped employees (Figure 1). The form is a metaphor for the level of knowledge and skills of team members. For example, an employee may have deep knowledge in one field (I-type); or in two fields (Pi-shaped / H-shaped); or be a specialist in one field, but with good knowledge, skills, experience and strong communication skills in many other fields ("T-shape"), with practical relevance to his professional tasks; or have a small depth of knowledge, but with a significant breadth (stroke-shaped).

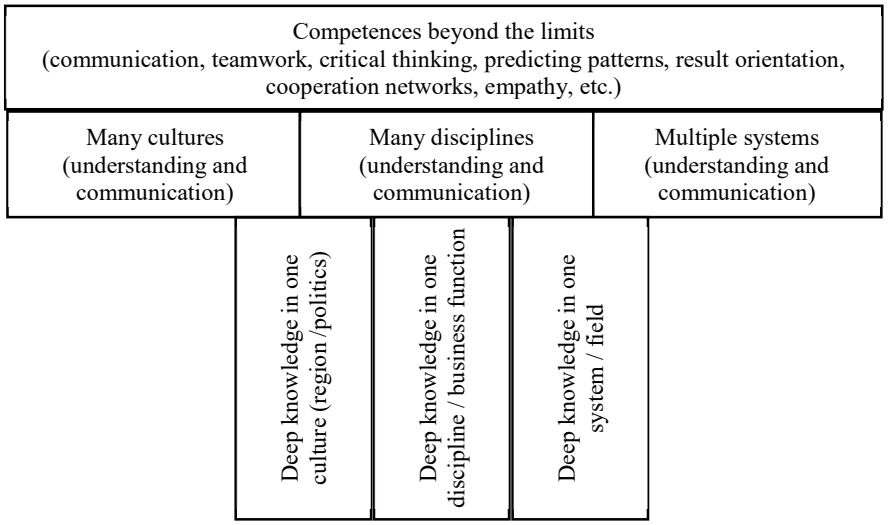

Figure 1. Features of T-shaped specialists [5, c. 102]

T-shaped employees are usually lifelong learners, have an open mind, easily interact in local and global networks, have communication skills, developed empathy, deep immersion in processes, and critical thinking. The breadth of knowledge and flexibility allow such employees to expand the general adaptive and innovative potential [4, c. 13].

Therefore, in order to ensure the effective learning of such specialists and to fully integrate microlearning for IT enterprises, it is advisable to implement LXP (Learning Experience Platform), which is an alternative to LMS (Learning Management System). To choose the optimal system, it is worth identifying what their main differences are (Table 3), as well as taking into account the strategic goals of the enterprise.

One of the main differences between LXP and LMS is how content is created. It is worth noting that, in this case, learning experience platforms differ in a much greater variety in terms of filling learning materials, as there are opportunities for their easy integration into the system, as well as the participation of users in their formation and further indexing and evaluation.

Table 3

Comparative characteristics of LMS and LXP

Criterion	LMS	LXP
Definition	Software for managing and distributing training courses through data collection and analysis.	Technology that promotes greater consumer orientation and encourages self-directed learning of your own choice at your own pace
Focus	Administration, data and compliance.	Users, content and personalization.
Learning approach	Top down.	Down top.
Main features	Course administration, program management, business rules, evaluation, compliance rules, management approval, reporting, analytics.	Content discovery, content recommendations, content and user paths, skill maps, content indexing, user content additions, usage analytics.
Advantages	Simplify learning administration. Facilitates access to data. Helps to centrally store learning materials. Simplification of certifications. Facilitating learning control. Works best with learning content that doesn't change much. Gamification of learning.	Support for personalized learning. Simplification of updating learning materials. Inclusion of external materials from a variety of sources. Adaptability and flexibility of the system. Ability to monitor learning in informal settings. Stimulating exchange and interaction between users.
Disadvantages	Difficulty applying personalization to users. Limited sources of learning materials. Too generalized information. Requires a high level of self-discipline.	Overloading the user due to excessive volumes of various materials. Insufficient control over the learning process. Risk of irrelevant recommendations to users.

**Compiled by the author on the basis of [2, 7, 8, 12].*

Considering the large amount of content, a very important function for LXP is the construction of a recommendation system, which is aimed at providing the most relevant information to the user in a timely manner. There are three different approaches to providing recommendations (Figure 2). Some of the providers of such platforms take a mixed approach. They build them, for example, both on skills and content consumption by various users (EdCast, LinkedIn). The third approach is quite complex, as it requires significant amounts of data that can be used for machine learning.

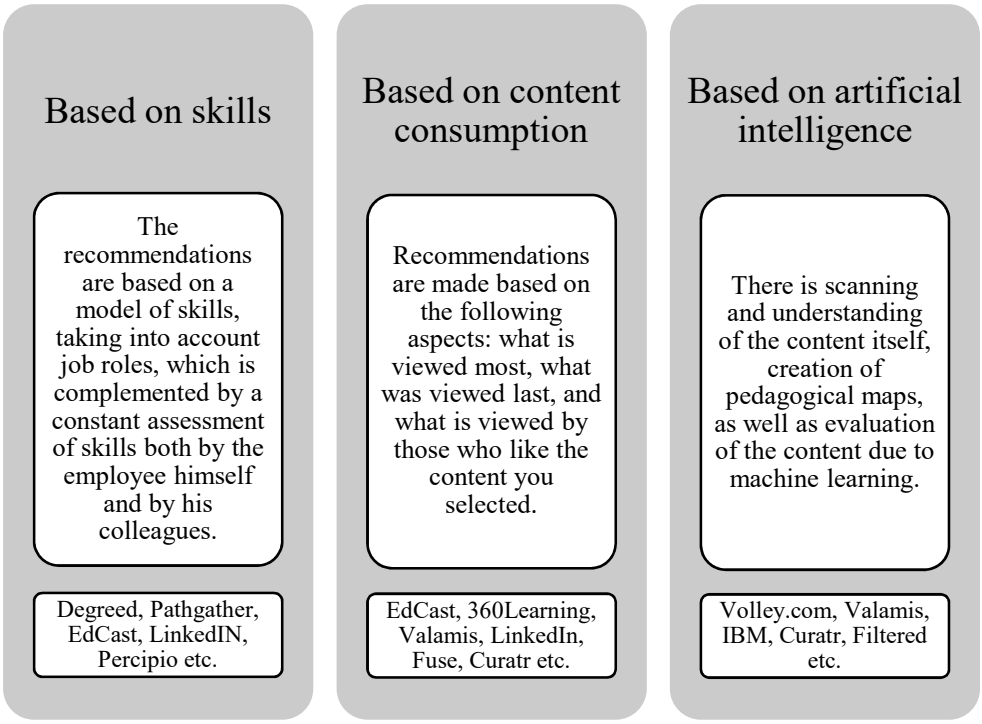

Figure 2. Approaches to providing recommendations in LXP [2]

The majority of learning experience platforms support microlearning, which involves delivering content in small chunks to make it easier to absorb. For example, instead of learning all the intricacies of Microsoft Excel all at once, training is narrowed down to specific tasks, such as creating a certain kind of graph [7]. Thus, it allows you to quickly cover the need of employees to acquire specific knowledge to perform a specific work task.

Since IT specialists identify the desire for self-development as one of the main motives for learning, this platform is able to provide them with the appropriate opportunities. LXP allows employees to have a high level of freedom in shaping their own learning path and choosing the content that is interesting and useful for them. And in order to meet the goals of the company, it is advisable to form individual development plans that will allow you to clearly define the desired results from learning, which are necessary for both organizational and personal success.

However, for now, most enterprises still choose to implement LMS, according to experts, the market for learning management systems in 2023 will be estimated at $22.4 billion. [1]. Such a system allows to control learning effectively, collect and accumule

detailed data for further analysis. The LMS enables systematic learning of the basic knowledge and skills necessary for a wide audience. Some of these systems have functionality with gamification of learning courses, thus ensuring a higher level of employee involvement in it.

In addition, there are also systems that try to combine LMS and LXP in order to eliminate their shortcomings and strengthen their advantages. They are mainly aimed at preserving the functionality that enables the collection and analysis of data and monitoring the learning process, while at the same time integrating functions to ensure social interaction between users, create more personalized programs and provide individual content recommendations.

Conclusions and prospects for further research. IT companies should focus their attention on the implementation of LXP, as it enables an employee-oriented approach, supports the maximum level of freedom and adaptability of the system to individual needs, allows you to build a personalized learning program, and fully supports microlearning. In addition, it is a source of a large amount of information about the learning of employees and their learning behavior, which can be used in the future to build more effective programs. LXP allows you to increase the effectiveness of social and informal learning, due to the possibility of commenting, evaluating content, and adding your own educational materials by employees. The application of multi-criteria analysis methods to select the optimal LXP system, as well as the study of the economic feasibility of its usage in comparison with other methods, may be interesting for further research.

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LXP ЯК ІНСТРУМЕНТ ОРГАНІЗАЦІЙНОГО НАВЧАННЯ ПЕРСОНАЛУ ІТ-ПІДПРИЄМСТВ

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Анотація. У статті розглянуто зміну підходів до організаційного навчання персоналу, що викликано становленням «Індустрії 4.0». Для того щоб залишатися ефективним воно повинно бути більшою мірою персоналізованим, ґрунтуватися на культурі навчання впродовж усього життя, бути орієнтованим на задоволення як організаційних, так і індивідуальних потреб. Було розглянуто концепцію мікронавчання, що набуває все більшої популярності у практиці ІТ-компаній, та проведено її порівняння з більш традиційними підходами. Виявлено тенденції змін у вимогах щодо компетентності працівників, що пов'язані зі значними трансформаціями бізнес-процесів під впливом розвитку цифрових технологій. Розглянуто особливості Т-подібних працівників, на яких орієнтуються та бажають залучати у свої команди ІТ-підприємства. Для їх підготовки запропоновано використання LXP як інноваційного та сучасного інструменту. Було детально розглянуто особливості надання рекомендацій у таких системах, що насправді є їх ключовою відмінністю та тим, що дозволяє побудувати персоналізовану траєкторію розвитку кожного окремого працівника. У ході порівняння з LMS було встановлено переваги та недоліки обидвох інструментів. Серед основних плюсів саме LXP було наведено підтримку надання персоналізованих рекомендацій, за рахунок використання машинного навчання та штучного інтелекту, простота поповнення контенту, можливість наповнення платформи споживачами, гнучкість та адаптивність, можливість відслідковувати не лише прогрес працівників, але і їх моделі поведінки, стимулювання соціальної взаємодії, обміну знаннями та досвідом. Проте, важливо враховувати, що для LXP важливим є все ж таки проведення контролю над контентом, що потрапляє до такої системи, а також мінімізація технічних помилок, які впливають на якість надання рекомендацій та роботу системи загалом.

Ключові слова: персонал, управління людськими ресурсами, LXP, цифровізація, дистанційне навчання, "Індустрія 4.0".

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