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FORMATION OF HUMAN CAPITAL IN ENTERPRISES AMIDST DIGITALIZATION AND ARTIFICIAL INTELLIGENCE ADVANCEMENT

Introduction. *In the context of the digital economy, the importance of knowledge in ensuring the efficiency of industrial enterprises has sharply increased. Human capital has acquired new properties, functions, and competencies, becoming one of the key factors in driving digital transformations. This evolution necessitates a novel approach to addressing the challenges of forming and developing human capital in enterprises.*

Problem Statement. *In today's business environment, the adoption of digital tools and artificial intelligence technologies has diminished the traditional roles of the workforce. The growing prevalence of remote work and the weakening of social and collective ties have heightened the need to preserve and enhance the quality of human capital within enterprises while safeguarding employee interests. This has created an imperative to identify innovation tools for the formation and development of human capital in enterprises.*

Purpose. *This study aims to substantiate scientific tasks related to the formation of human capital in enterprises, considering the opportunities and risks associated with digitalization and the increased use of artificial intelligence.*

Materials and Methods. *The research employs the principles of dialectical and trialectic theories of knowledge and adopts a systemic and interdisciplinary approach to analyzing socio-economic processes and phenomena. General scientific methods, including scientific generalization, analysis of cause-and-effect relationships, and economic analysis, are applied.*

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Results. *Factors influencing the formation of human capital in Ukrainian enterprises under the impact of digitalization and artificial intelligence have been identified. Scientific problems related to the formation and development of human capital in the digital era have been substantiated. Strategies for creating new opportunities to realize human capital potential, along with the development of innovation, creative, and digital industries and businesses, have been proposed.*

Conclusions. *The necessity of forming a new economic model for enterprises that mobilizes human potential, mitigates the risks associated with artificial intelligence and digital technologies, and competes effectively for high-quality labor has been confirmed.*

Keywords: industrial enterprises, digitalization of the economy, artificial intelligence, human capital, formation and development of human capital of enterprises, spirituality and values of employees and management.

Shifts in global competition toward a struggle for labor, the consumer society's establishment of a basic guaranteed income that undermines incentives for professional development and knowledge acquisition, and the use of digital tools and artificial intelligence technologies have collectively weakened the cognitive function of workers. These trends have intensified the alienation of labor, eroded production, social, and collective ties, and diminished shared values. As a result, workers have become increasingly socially vulnerable. Even within a single enterprise, digitalization and artificial intelligence technologies have caused significant differentiation in human capital, categorizing it into creative, managerial, technical, operational, and other forms. This differentiation is shaped by various characteristics, such as education level, experience, professionalism, knowledge, quality of life, spirituality, values, and standing within the workplace and society.

An objective need has arisen to develop a novel approach to addressing the challenges of forming and developing human capital within enterprises. This approach must account for the growing implementation of digital technologies and artificial intelligence, emphasizing a new production ideology that strengthens the social dimension of human capital. It must prioritize workers' interests, spirituality, and values while preserving enterprise-level human capital amidst an increasingly mobilized economy and high migration rates of skilled labor. Such conditions could enable the creation of a new economic model for enterprises, one capable of mobilizing human potential while mitigating the risks associated with artificial intelligence and digital technologies.

The study has aimed to substantiate scientific tasks related to the formation of human capital in enterprises, considering the opportunities and risks associated with digitalization and the expanding use of artificial intelligence.

The research has employed the principles of dialectical and trialectic theories of knowledge, adopting a systemic and interdisciplinary approach to analyzing socio-economic processes and phenomena. General scientific methods — including analysis and synthesis, the hypothetico-deductive approach, and systematic and interdisciplinary scientific generalization — have been used to systematize modern approaches to studying the digital economy and human capital development. The cause-and-effect method has been applied to assess the impact of production digitalization on the performance and competitiveness of domestic enterprises and the formation and development of human capital. Economic analysis has facilitated the evaluation of external and internal factors influencing enterprise management and human capital development.

The theory of human capital emerged as an independent field in the late 1950s and early 1960s, largely attributed to the work of Nobel laureates Theodore Schultz and Gary Becker, prominent American economists [1, 2]. Subsequent contributions were made by other international economists, including H. Bowen, L. Thurow, Y. Ben-Porath, M. Blaug, F. Welch, and B. Chiswick, among others [3—5]. These scholars emphasized the importance of economic and social investments in individuals and highlighted the critical role of education in reproducing human capital, enhancing knowledge, skills, and human capabilities.

Modern human capital theory has been shaped significantly by Gary Becker's research, which identifies knowledge, production skills, and motivation as key components of human capital. Becker has argued that increased investment in the education and training of future professionals and skilled workers can yield returns comparable to, if not greater than, expenditures on equipment and infrastructure [6, p. 47]. Skilled workers are better positioned to generate new knowledge and ideas, create intellectual property, and implement innovations across various domains.

The challenges of personnel development and human capital formation in the context of digitalization and the emergence of Industry 4.0 have been actively studied by scholars across different countries. For instance, Turkish researcher M. Aybas has noted that digital technologies are transforming the nature of work, working conditions, and employee schedules, which, in turn, affect human resource management [7]. Finnish researcher J. Longstedt has explored how advanced automation and digitalization influence labor processes in industrial settings, focusing on qualification requirements for employees in the digital economy [8]. Meanwhile, Polish researcher A. Karasek has identified several benefits of IT tools in human resource management, including improved employee engagement and productivity [9].

Issues surrounding human capital formation and labor markets under the growing influence of artificial intelligence have also been addressed in studies by influential international organizations, consulting firms, and research networks. These entities frequently provide services related to digitalization and enterprise human capital management [10—12].

The labor market in Ukraine has been currently experiencing a crisis due to the mass evacuation of the population abroad, predominantly women with children. In 2022, unemployment was estimated by the National Bank of Ukraine (NBU) to have reached approximately 35%. The deep decline in economic activity and migration caused by security risks in front-line regions have resulted in significant job losses [13, pp. 27—29].

In 2023, according to NBU data [14, pp. 21—22], employment has gradually increased due to a growing demand for labor. However, the labor market remains challenging: unemployment is decreasing slowly, and finding qualified workers continues to be problematic. Persistent high-security risks hinder the return of displaced migrants. An increasing number of enterprises report shortages of skilled workers, with construction companies and manufacturing enterprises facing this issue most acutely. The situation is particularly severe in eastern Ukraine, where unemployment is significantly higher (43% among those employed before February 24, 2022), primarily due to proximity to the front line and the destruction of infrastructure and production facilities. Nationwide, this figure stands at 25%.

Given these conditions, the issues surrounding the development of human capital in Ukraine are currently being examined not only in the context of digitalization but also within the framework of wartime challenges.

Scholars at the Institute of Industrial Economics of the National Academy of Sciences of Ukraine (NASU) have studied the transformation of the socio-labor sphere in the context of economic digitalization. Their research addresses various aspects, including the development of human capital, particularly the enhancement of employees' digital competencies and advancements in personnel management systems under the digital transformation of the economy [15], human capital losses due to the war [16], the restoration of Ukraine's human capital in the post-war period leveraging the benefits of digitalization [17], and issues related to human capital development and labor motivation [18—25].

In addition to the Institute of Industrial Economics, researchers from other leading institutions in Ukraine actively explore the intersections of digitalization, artificial intelligence, and human capital. These include the Institute of Demography and Social Studies of NASU, the

Institute for Economics and Forecasting of NASU, the National Institute for Strategic Studies, and the Research Center for Industrial Problems of Development of NASU, among others.

Research highlights numerous advantages and risks of digitalization and artificial intelligence (AI) in the development of human capital, as well as other challenges and threats faced by Ukraine. Digitalization enables more efficient and precise management of human capital. However, it is essential to consider risks such as data security threats and adverse effects on employees' health caused by excessive digitalization.

The challenge of developing a scientific and methodological framework for the advancement of enterprise human capital in the context of digitalization and increasing AI utilization necessitates a multi-faceted research approach. This approach should account for both the opportunities and risks of digitalization, which are amplified by the global progression of the Fourth Industrial Revolution and, in Ukraine, further intensified by wartime conditions, the destruction of industrial potential, and the migration of skilled workers abroad.

Consequently, identifying factors and justifying research directions for the formation of enterprise human capital amidst digitalization and the strengthening role of AI requires further investigation.

In this study, enterprise human capital is understood as follows:

1. A set of qualitative characteristics of employees: This includes abilities, work skills, knowledge, motivations, educational and cultural development, and health. These characteristics are shaped throughout an individual's life through investment and utilized by enterprises in economic activities [23].

2. The tools of productive, managerial, and intellectual labor: This also encompasses the network of production, managerial, and social connections, as well as the environment in which employees function and perform their work.

Modern economic science abroad identifies that the contemporary approach to developing and managing human capital involves structuring the skills and capabilities of individuals into soft skills and hard skills. The balance between these skills influences not only the income of human capital holders but also shapes the strategy for managing human capital development [26—29].

The development of digital technologies and the growth of the digital economy impose new demands on human capital. Under these conditions, the necessity of developing digital competencies and "future skills" becomes increasingly relevant.

Artificial intelligence (AI) represents a new generation of digital technologies and serves as the foundation for the digital transformation of all economic sectors. This technology encompasses a suite of solutions aimed at emulating human cognitive functions, producing results comparable to those of human intellectual activity. However, its application entails significant existential (ethical) risks, fosters labor alienation, weakens social and collective bonds, and undermines shared spiritual values.

AI can be defined as an organized set of information technologies that enables the performance of complex, multifaceted tasks through scientific research methods and information-processing algorithms. It creates and utilizes its own knowledge bases, decision-making models, and algorithms to achieve assigned objectives while generating or independently acquiring information [30].

Currently, the adoption of AI and digital technologies in production is advancing much faster than any previous innovation developments. The resulting technological revolutions lead to profound changes in labor dynamics, human capital, and the forms and models of enterprise operations.

FEATURES OF HUMAN CAPITAL FORMATION AND REPRODUCTION IN THE ECONOMY UNDER DIGITALIZATION AND INCREASING AI UTILIZATION

Contemporary technological advancements drive the transformation of the economy into an information-driven and digital framework, fundamentally

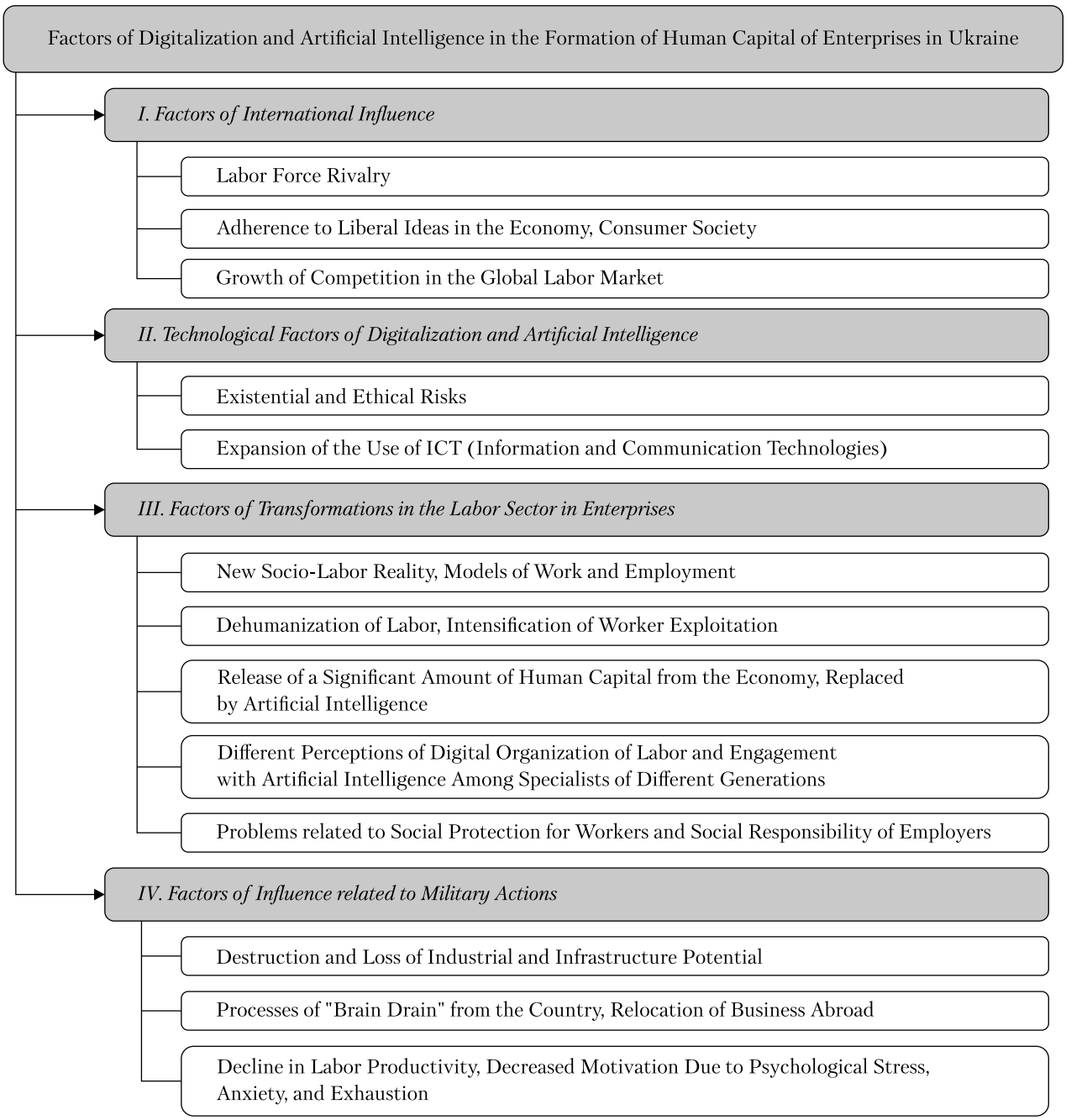

Fig. 1. Factors of digitalization and artificial intelligence in the formation of human capital in enterprises of Ukraine
Source: prepared by the authors.

altering working and living conditions. These changes significantly influence the direction of investments in human capital, particularly during wartime conditions. They create specific circumstances for enterprise operations, human capital formation, and its reproduction within the economy (Fig. 1).

I. Factors of International Influence:

- Shift in global competition towards labor force rivalry: modern competition increasingly focuses on acquiring skilled labor, implemented through ideologies, education, and selection processes starting at school and university levels; the facilitating factors include visa-free regimes and migration of skilled professionals, particularly under wartime conditions.
- Impact of liberal economic ideas: the adoption of liberal economic principles has led to the creation of a consumer society where the provision of a basic subsistence level diminishes incentives for professional growth, skill enhancement, and retraining.
- Rising competition in the global labor market: leading global companies strive to attract the most skilled and creative professionals by offering favorable working conditions and compensation packages, thereby increasing the value of specific human capital.

II. Technological Factors of Digitalization and Artificial Intelligence:

- Risks associated with artificial intelligence: AI presents significant existential and ethical challenges. Science and practice are tasked with addressing issues such as the predictability of potential risks and the controllability of AI outcomes.
- Expansion of information and communication technologies (ICT): the growing use of ICT requires the acquisition of new knowledge in the field and the adaptation of existing skills in related areas such as management, monitoring, and security.

III. Factors of Change in Labor Practices at Enterprises:

- Emergence of a new socio-labor reality: a shift toward network-based employment models utilizing ICT, virtual interactions between employes and managers, and remote work forms. This transition transforms traditional methods of labor organization and human capital management, including the use of artificial intelligence. While these changes introduce adverse effects on workers, they simultaneously open vast opportunities for acquiring digital competencies and developing new professions.
- Dehumanization of labor: AI technologies do not liberate labor but instead promote the aggressive implementation of surveillance and control tools, aimed solely at increasing corporate profits and intensifying worker exploitation.
- Generational differences in perception: workers from different generations exhibit significant variations in their perception of digital labor organization and their involvement in AI-related work.
- Displacement of human capital: a substantial portion of the workforce is being displaced as the demand for specialists, whose tasks can be replaced by AI, declines.
- Challenges in social protection and employer responsibility: the emergence of technological platforms creates a vast divide, categorizing participants as either information intermediaries or executors. This "Uberization" of the economy and social processes relegates many individuals to the status of self-employed entrepreneurs, leaving them largely socially unprotected, anonymized, and spiritually depleted.

IV. Factors Influenced by Military Actions:

- Destruction and loss of industrial and infrastructure potential: the ongoing conflict leads to the devastation and complete loss of industrial and infrastructural capacities.
- Brain drain and business relocation: there is an active outflow of skilled specialists from the country, coupled with the relocation of businesses abroad.
- Decline in labor productivity and motivation: psychological tension, anxiety, and exhaustion contribute to reduced productivity and diminished motivation among the workforce.

On the other hand, the strengthening of artificial intelligence is an objective reality. Over recent years, many nations have developed long-term national AI development strategies and initiated steps to implement them [31].

GLOBAL EXPERIENCE IN DEVELOPING HUMAN CAPITAL FOR DIGITAL TECHNOLOGIES

The management at IBM acknowledges the importance of supporting its workforce throughout their entire lifecycle. IBM's HR teams have been tasked with managing human capital by accounting for the financial value of each employee. Effective human capital management at IBM involves various aspects, such as recruitment, career monitoring, skill development, and the use of software platforms [32, pp. 118—119].

According to McKinsey, by 2030, up to 800 million people could lose their jobs due to the automation of work processes, with many employees uncertain about their readiness and skills for high-paying jobs.

Goldman Sachs estimates that 300 million full-time employees in advanced economies are already experiencing the impact of AI technologies. In the U.S. and Europe, two-thirds of occupations are expected to face negative effects from automation [33].

Research by McKinsey on the impact of artificial intelligence and advanced automation on labor processes and human capital demonstrates that, at the macroeconomic level, advanced automation alone can increase productivity growth by 0.8% to 1.4% annually. Although digital technologies replace certain jobs and lead to the release of a significant portion of the workforce, they also create new jobs in emerging sectors, foster new methods of generating revenue, and engage human capital in innovation roles.

For example, one-third of the new jobs created in the United States over the past 25 years were either entirely new or had barely existed previously. These include roles in IT development, hardware production, app creation, and IT systems management. Additionally, the growing role of big data in the economy and business sectors is anticipated to generate substantial demand for statistical and data analytics expertise. Within the next decade, the U.S. may face a shortage of up to 250,000 data scientists. This underscores the need for investments in enterprise human capital and the development of mechanisms to encourage and engage human capital in research and development activities [34].

PRACTICAL EXPERIENCE IN DEVELOPING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN UKRAINE

In Ukraine, the development of artificial intelligence technologies is recognized as one of the priority areas in scientific and technological research [35]. A corresponding labor market has emerged, employing nearly 10,000 IT engineers in AI systems. Machine learning technologies are widely applied. In the energy sector, the *DTEK* group of companies is implementing AI-driven process control systems at power plants. Similarly, energy specialists at *MHP EcoEnergy* use these technologies to forecast electricity consumption [36].

According to IT-Enterprise data [37], Ukrainian enterprises across various industries have implemented digital technologies (ERP systems and their components). These implementations span sectors such as: engineering and instrumentation (NDC *Mashproject*, *Zorya*, Lviv Locomotive Repair Plant, Kremenchuk Wheel Plant, Rivne High-Voltage Equipment Plant, State Enterprise *Antonov*, PJSC *FED*, *Interpipe*, among others); power engineering (*DTEK*, LLC *Podilskyi Energy Consulting*, and *D.TRADING*); chemical and pharmaceutical (*UKRNAFTA*, *Liktravy*, etc); consumer and durable goods manufacturing (*Interfoam*, Publishing House *Ukrpol*, and *STALEKS*); finance and services (*Ukrposhta*, *EXIM Bank*, and others).

An analysis of these enterprises indicates that the adoption of digital technologies enables more personalized, diversified, and mass-scale product creation, enhances responsiveness to market changes, and boosts operational efficiency.

Another study, *Sustainable Digital Development* [38], has highlighted successful examples of digital technology implementation by companies such as *Interpipe*, *DTEK*, *SCM*, *Metinvest*, *Biopharm*,

UkrBud, and *FED*, with ***Interpipe*** emerging as a leader by most criteria [39].

The digital transformation of enterprises worldwide, and in Ukraine specifically, reflects a pursuit of new competitive advantages and the opportunities offered by the digital economy.

At the same time, these factors pose significant challenges for Ukraine's government and economy. The well-being of the population, the development of industrial enterprises, and the quality of the labor potential hinge on addressing these challenges effectively.

To manage these trends, it is necessary to revise approaches to preserving, shaping, and developing enterprise human capital. This involves aligning the economic interests of employees, businesses, and the state.

These developments call for a profound reassessment and the formulation of a robust strategy to navigate the risks and threats posed by digitalization.

GOVERNMENT MEASURES FOR DIGITAL ECONOMY AND ARTIFICIAL INTELLIGENCE

The Concept of Artificial Intelligence Development in Ukraine [30], set to 2030 (approved by Cabinet of Ministers Order No. 1556-r, December 2, 2020), outlines key areas for AI development. These aim to safeguard human rights and interests, build a competitive economy, and improve public administration.

Action Plan for the Implementation of the AI Development Concept in Ukraine (2021—2024) approved by the Cabinet of Ministers of Ukraine (Order No. 438-r, May 12, 2021) [40]. This plan sets forth the framework for shaping state policy in the field of artificial intelligence (AI).

Agreement Between Ukraine and the EU on Participation in the *Digital Europe* Program ratified by the Verkhovna Rada of Ukraine on February 23, 2023 [41]. This agreement establishes conditions for Ukraine's involvement in the EU program. It provides additional incentives and opportunities for developing the digital economy, IT business, AI technologies, and enhancing workers' digital skills.

OECD Recommendations on Artificial Intelligence adopted in June 2019 (OECD/LEGAL/0449) [42]. These recommendations emphasize adherence to ethical standards outlined in CM/Rec (2020)1, approved by the Council of Europe's Committee of Ministers on April 8, 2020. They guide the formulation of national policies and international cooperation in AI development.

Membership in the Special Committee on Artificial Intelligence of the Council of Europe: since October 2019, Ukraine has been part of this committee and aligned with the OECD's AI Recommendations (OECD/LEGAL/0449) [42]. This membership fosters an institutional environment conducive to AI development, supports human capacity-building, prepares for labor market transformation, and promotes international collaboration.

Law of Ukraine on Higher Education: this law [43] underscores the importance of preparing a competitive workforce for high-tech and innovation development, ensuring self-realization of individuals, and addressing the needs of society, the labor market, and the state for qualified professionals.

International Declaration on AI Safety: Ukraine signed the Bletchley Declaration on AI Safety during the AI Safety Summit on November 2, 2023, joining 29 governments, including the U.S., Australia, and EU members. The declaration seeks collective agreements to develop and implement risk-oriented AI regulation policies to prevent potential negative impacts [44].

The Law of Ukraine on the Priority Directions of Science and Technology Development [45] identifies fundamental scientific research ... of human potential as one of the priority areas for ensuring Ukraine's competitiveness in the world and the sustainable development of society and the state.

The National Economic Strategy for the Period up to 2030 (NES) [46]. One of the NES tasks is to ensure the development of human potential and win the competition for talent. In the *Digital Economy* section, one of the strategic goals is iden-

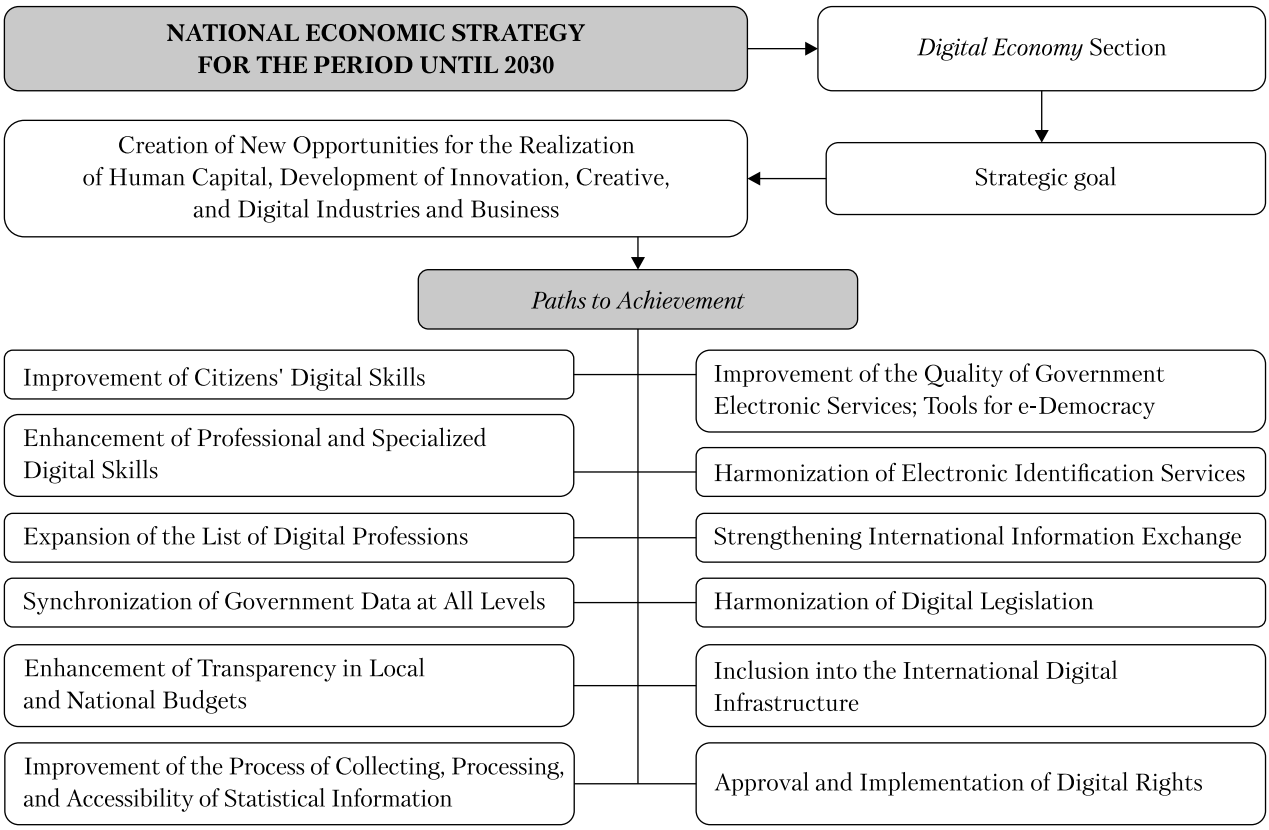

Fig. 2. Pathways to creating new opportunities for human capital realization, the development of innovation, creative, and digital industries and businesses

Note: compiled based on the National Economic Strategy for the period up to 2030 [50].

tified as creating new opportunities for the realization of human capital, the development of innovation, creative, and digital industries and businesses. The pathways to achieving this goal include improving citizens' digital skills, increasing the level of professional and specialized digital competencies, expanding the list of digital professions, synchronizing state data at all levels, enhancing the transparency of local and national budgets, improving the processes of collecting, processing, and accessing statistical information, improving the quality of public electronic services, e-democracy tools, harmonizing electronic identification services, strengthening international information exchange, harmonizing digital legislation, integrating into international digital infrastructure, and adopting and implementing digital rights (Fig. 2).

Efforts of the scientific community should focus on:

- anticipating potential risks and ensuring the controllability of artificial intelligence outcomes;
- conducting an in-depth analysis of the prospects and risks of digitalization with a focus on ensuring the competitiveness of Ukraine's industry;
- identifying forms and methods of labor organization and human capital management;
- mastering new knowledge in the ICT field and transforming skills and expertise in other areas, such as management, control, and security;
- implementing new approaches to the preservation, development, training, and retraining of employees, as well as changes in human and hu-

man capital management in the interests of employees;
- creating systems for training in digital competencies and new professions;
- establishing incentives for professional growth, qualification improvement, and retraining;
- paying attention to socio-labor relations, intellectual capabilities, and skills of specialists and workers of different generations;
- applying new methods and tools to influence the value orientations of employees from different generations;
- exploring new approaches to personnel management with the use of artificial intelligence;
- fostering organizational culture and employee engagement with artificial intelligence;
- identifying resources and potential for the postwar recovery of the country's socio-economic development;
- preparing and retaining qualified specialists within the country; and
- developing methodologies and programs that balance the interests of the state, enterprises, businesses, and employees.

The authors also drew inspiration for their work from studies [47—50].

Thus, the recovery of Ukraine's economy and industry on a new technological foundation requires a higher quality workforce. Simultaneously, the rapid adoption of artificial intelligence, which forms the core of the new generation of digital technologies and drives the digital transformation across all economic sectors, brings significant challenges. These include a set of technological solutions mimicking human cognitive functions comparable to intellectual activity, accompanied by existential (ethical) risks. These risks contribute to the alienation of labor, the weakening of social and collective ties, and the erosion of shared spiritual values. The worker becomes increasingly socially vulnerable. Together, these factors lead to a decline in the overall quality of human capital in enterprises and the economy as a whole. There is an objective need to develop a new approach to addressing the issue of forming and developing human capital in enterprises amid the acceleration of digital technologies and artificial intelligence, focusing on the social dimension of human capital, human priorities, spirituality, and values for the effective utilization of human capital. Under such conditions, a new model of enterprise and economic organization must be formed. This model should mobilize the potential of human abilities and opportunities, reduce the risks associated with artificial intelligence and digital technologies, and address the competition for high-quality labor.

In view of the above, the following scientific and practical tasks require resolution:
- substantiating the theoretical and methodological foundations for the genesis and development of human capital in enterprises of various organizational forms and ownership structures within the digital economy;
- identifying the factors, risks, and prospects associated with the "producer–enterprise human capital" relationship under the conditions of expanding artificial intelligence and digital technologies;
- analyzing the prerequisites, needs, and motivational and technological readiness of enterprise management and employees for digital transformations;
- developing conceptual principles for managing the formation of human capital in enterprises amid digitalization and the growing influence of artificial intelligence; and
- substantiating and developing a system for preserving and developing the national human capital within the territory of the state.

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ФОРМУВАННЯ ЛЮДСЬКОГО КАПІТАЛУ ПІДПРИЄМСТВ В УМОВАХ ЦИФРОВІЗАЦІЇ ТА ПОСИЛЕННЯ ШТУЧНОГО ІНТЕЛЕКТУ

Вступ. В умовах формування цифрової економіки різко зростає значимість знань для забезпечення ефективності господарської діяльності промислових підприємств. Людський капітал набуває нових властивостей, функцій, компетенцій та є одним з головних факторів забезпечення цифрових трансформацій. Виникає потреба у розробці нового підходу до вирішення проблеми формування і розвитку людського капіталу підприємств.

Проблематика. В сучасній економіці підприємства застосування цифрових інструментів і технологій штучного інтелекту послаблюють функцію працюючої людини. Зростання обсягів віддаленої праці, послаблення соціальних та колективних зв'язків актуалізують питання збереження й підвищення якості людського капіталу підприємств, захисту інтересів працівників. Це зумовлює потребу пошуку нових інструментів формування і розвитку людського капіталу підприємств.

Мета. Обґрунтувати наукові завдання щодо формування людського капіталу підприємств з урахуванням перспектив і ризиків, пов'язаних з цифровізацією та посиленням застосування штучного інтелекту.

Матеріали й методи. Використано положення діалектичної та тріалектичної теорій пізнання, системний та міждисциплінарний підхід до аналізу соціально-економічних процесів та явищ. Застосовано загальнонаукові методи, методи наукового узагальнення, причинно-наслідкових зв'язків, економічного аналізу.

Результати. Визначено фактори цифровізації і штучного інтелекту формування людського капіталу підприємств в Україні. Обґрунтовано наукові завдання щодо формування і розвитку людського капіталу підприємств в умовах цифровізації. Зазначено шляхи створення нових можливостей реалізації людського капіталу, розвитку інноваційних, креативних та цифрових індустрій і бізнесу.

Висновки. Підтверджено необхідність формування нової моделі господарського укладу підприємств, економіки, яка здатна мобілізувати потенціал здібностей й можливостей людини, понизити ризики, що супроводжують штучний інтелект і цифрові технології, скласти конкуренцію за якісну робочу силу.

Ключові слова: промислові підприємства, цифровізація економіки, штучний інтелект, людський капітал, формування та розвиток людського капіталу підприємств, духовність та цінності працівників і менеджменту.