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SHAPING THE FUTURE ARTIFICIAL INTELLIGENCE ECONOMY FOR GLOBAL GROWTH AND INNOVATION

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Summary. The article deals with the rapid integration of AI into global businesses and underscores the necessity for policymakers to act swiftly. The problems discussed include varying levels of readiness among countries to adopt AI, as measured by the IMF's newly developed AI Preparedness Index. This index analyzes aspects such as digital infrastructure, human capital and labor market policies, innovation, and regulation and ethics. The main focus is on how wealthier economies like Singapore, the U.S., and Denmark lead in AI readiness, while low-income countries lag behind. The article emphasizes the need for advanced economies to balance AI innovation with robust regulations and for emerging markets to invest in digital infrastructure and workforce development. **Key words:** cybersecurity; artificial intelligence; entrepreneurship and startups; internationalization; educational technologies.

Introduction. The technological revolution jumpstarts productivity and boost global growth. The development of artificial intelligence (AI) has captivated the world, caused both excitement and alarm, and raising important questions about its potential impact on the global economy. We can't predict how AI will ripple through economies in complex ways. In the nearest future we will need to come up with a set of policies to useful and safely leverage the vast potential of AI for the benefit of humanity.

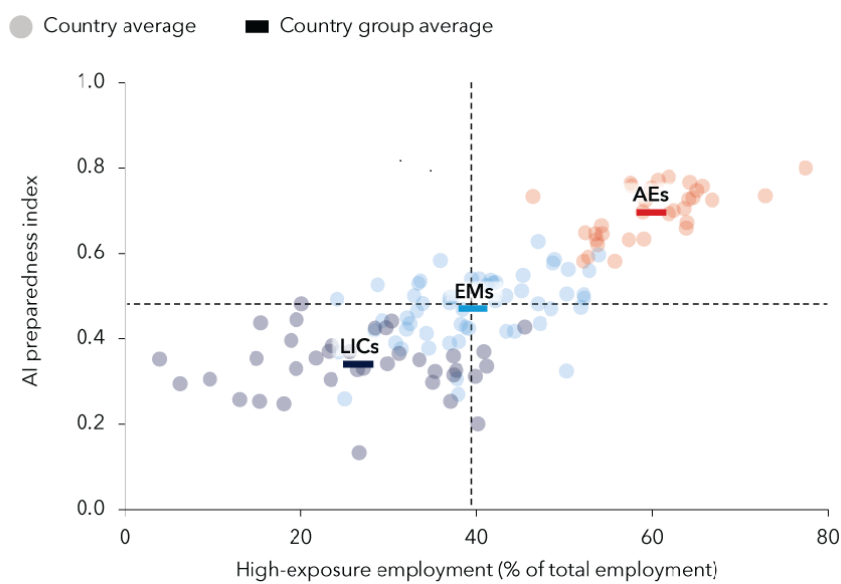
Research results. AI is being integrated into businesses around the world at remarkable speed, underscoring the need for policymakers to act. To help countries craft the right policies, the IMF has developed an AI Preparedness Index that measures readiness in areas such as digital infrastructure, human-capital and labor-market policies, innovation and economic integration, and regulation and ethics.

The human-capital and labor-market policies component, for example, evaluates elements such as years of schooling and job-market mobility, as well as the proportion of the population covered by social safety nets. The regulation and ethics component assess the adaptability to digital business models of a country's legal framework and the presence of strong governance for effective enforcement.



Using the index, IMF staff assessed the readiness of 125 countries. The findings reveal that wealthier economies, including advanced and some emerging market economies, tend to be better equipped for AI adoption than low-income countries, though there is considerable variation across countries. Singapore, the United States and Denmark posted the highest scores on the index, based on their strong results in all four categories tracked.

Guided by the insights from the AI Preparedness Index, advanced economies should prioritize AI innovation and integration while developing robust regulatory frameworks. This approach will cultivate a safe and responsible AI environment, helping maintain public trust. For emerging market and developing economies, the priority should be laying a strong foundation through investments in digital infrastructure and a digitally competent workforce. The AI era is upon us, and it is still within our power to ensure it brings prosperity for all (pic. 1).

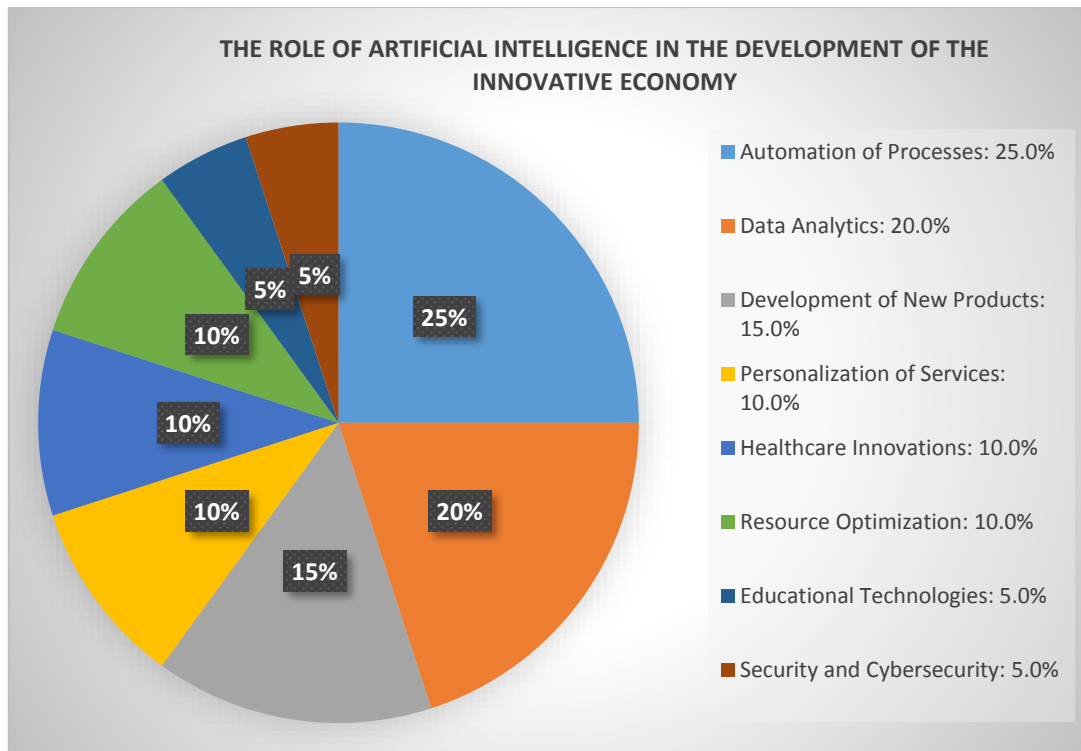


Pic. 1. AI Preparedness Index and employment share in high-exposure occupations [7]

Nowadays the integration of artificial intelligence significantly influences the development of an innovative economy. Due to these influences, we can do the following conclusions. Leading the impact is the automation of processes, accounting for 25.0%, which enhances efficiency and reduces manual labor in various industries. Data Analytics follows closely at 20.0%, providing critical insights that drive informed decision-making and strategic planning. The development of new products stands at 15.0%, showcasing AI's role in fostering innovation and bringing new solutions to market.

Personalization of services and healthcare innovations each contribute 10.0%, highlighting AI's ability to tailor experiences to individual needs and revolutionize medical practices. Similarly, resource optimization at 10.0% demonstrates AI's effectiveness in managing resources more efficiently, thereby reducing costs and environmental impact. Educational technologies and security and cybersecurity each hold a 5.0% share, reflecting AI's growing importance in enhancing learning experiences and safeguarding digital infrastructures.

Overall, AI's diverse applications are pivotal in driving the growth and sustainability of an innovative economy, impacting various sectors with significant contributions (pic. 2).



Pic. 2. The role of artificial intelligence in the development of the innovative economy
[created by authors]

Artificial intelligence plays an important role in the innovative economy. Its impact can be seen in various areas and aspects of economy.

AI allows for the automation of routine tasks, increasing the efficiency of production and business processes at the same time. AI frees up human resources for more complex and creative tasks. Data analytics requires great human efforts and the ability of AI to analyze large volumes of data in real-time enables companies to make more informed decisions, predict market trends, optimize supply chains, and better understand customer needs.

Artificial intelligence is revolutionizing numerous sectors by fostering the development of novel products and services, thereby unlocking new market opportunities and business prospects. This technological evolution is evident in areas such as smart homes, autonomous vehicles, and personalized medical solutions. AI-driven innovations are not only enhancing product functionality but are also creating entirely new categories of consumer goods and services. These advancements are opening up previously untapped markets, offering businesses a competitive edge and spurring economic growth.

One of the most significant contributions of AI is its ability to tailor products and services to meet the unique needs and preferences of individual customers. By leveraging vast amounts of data and sophisticated algorithms, AI enables a level of personalization that was previously unattainable. This customization enhances customer satisfaction and loyalty, as products and services are better aligned with



personal tastes and requirements. For instance, AI-powered recommendation systems in e-commerce or personalized treatment plans in healthcare exemplify how AI can cater to individual preferences, thereby fostering deeper customer engagement and retention.

In the realm of healthcare, AI is transforming the way medical professionals diagnose diseases, develop treatment protocols, manage medical data, and conduct clinical research. Advanced machine learning algorithms can analyze complex medical data to identify patterns and predict outcomes with a high degree of accuracy. This capability not only expedites the diagnostic process but also aids in the creation of new, more effective treatment methods. Additionally, AI's role in managing vast amounts of medical data facilitates better organization and retrieval, supporting more efficient clinical operations and research endeavors.

AI's impact extends to resource management, where it plays a crucial role in optimizing the use of both natural and human resources. By enabling more efficient processes and reducing waste, AI helps lower operational costs and minimize environmental impacts. In manufacturing, for example, AI can optimize production schedules and supply chain logistics, reducing energy consumption and material waste. Similarly, AI-driven systems in agriculture can monitor and manage crop health, ensuring more sustainable farming practices. These efficiencies contribute to both economic and environmental sustainability, highlighting AI's potential to drive responsible resource utilization.

In the domain of cybersecurity, AI is instrumental in safeguarding information systems and data. With the increasing sophistication of cyber threats, AI provides a proactive defense mechanism by detecting and mitigating potential attacks before they can cause significant harm. AI algorithms can continuously monitor network activity, identify anomalies, and respond to security breaches in real-time. This dynamic and adaptive approach to cybersecurity is essential in protecting sensitive information and maintaining the integrity of digital infrastructures.

AI's multifaceted capabilities are driving transformative changes across various industries. From fostering innovation and opening new markets to enhancing personalization and resource efficiency, AI is reshaping the business landscape. Moreover, its contributions to medicine and cybersecurity underscore its vital role in addressing some of the most pressing challenges of our time. As AI technology continues to evolve, its potential to drive further advancements and create value across diverse sectors remains boundless.

AI is used in educational platforms for adaptive learning and teaching, allowing the creation of individualized educational programs for each student and teacher, increasing the effectiveness of learning.

To illustrate the current breadth and depth of the AI trend, consider the following data points: 24 billion: the number of online visits generated by the top 50 artificial intelligence tools in one year; 14 billion: the number of visits generated by ChatGPT alone in one year; 5.5 billion: the number of visits generated by AI users in the USA, followed by India (2.1 billion) and Indonesia (1.4 billion) [2].

The impact of generative AI on productivity could increase the value of the global economy by trillions of dollars. AI could add the equivalent of \$2.6 trillion to \$4.4 trillion annually across the 63 analyzed scenarios of its application. For comparison, the entire GDP of the United Kingdom in 2021 was \$3.1 trillion. This

would increase the overall impact of AI by 15-40%. The estimate would roughly double if we consider the impact of integrating generative AI into software currently used for other tasks [8].

Artificial intelligence is one of the hottest topics in the business world, and speculations about its potential effects abound. Professional services giant PwC claims AI could add nearly \$16 trillion to the world economy by 2030. The consultancy group McKinsey predicts \$13 trillion in the same time frame. Quibble over a few trillion dollars if you'd like, but the fact remains that AI is going to be an important technological advancement that businesses will need to incorporate to stay competitive [3].

Today, there is not a single industry where this innovation has not been attempted. For example, in the United States, residents can already receive legal advice on many legislative issues from a robot named IBM Watson within seconds, with 90% accuracy compared to the 70% accuracy provided by a human lawyer. Artificial intelligence also demonstrates its advantages in factory production. As a result of replacing 90% of the workers in a mobile phone manufacturing factory with robots, the technological process was switched to a round-the-clock mode, labor productivity increased by 250%, and the number of defects decreased by 80% [7].

The e-commerce market grew by 41% in 2020, reaching \$4 billion, approximately 2.6% of Ukraine's GDP. Ukrainians often buy apparel, electronics, appliances, home and garden products, cosmetics, and food online [4]. Due to AI e-commerce market grows very fast. Ukraine, is the first country to launch an official nation-branding campaign in the midst of war. For the first time, brand communication is a key part of a country's response to a military invasion [5].

The modern economy is undergoing transformation under the influence of the transition to the fifth and sixth technological paradigms and is accompanied by the emergence of a new entity in the labor market – artificial intelligence. The change in technological paradigms has always been accompanied by a reduction in jobs in some areas of human activity and the emergence of new ones with higher productivity in others [6].

Conclusion. The examples above suggest that there is practically no field of activity where humanity will not at least attempt to use artificial intelligence. If an automated and AI-controlled factory produces goods, intelligent transport delivers them, and an online store sells them, then a natural question arises – how will consumers earn money to purchase such goods and services? An indicator of a high level of understanding of the current situation by humanity, for example, is the Danish government's decision to introduce the position of a "digital ambassador," who will monitor trends and defend the state's interests against global corporations such as Google and Apple, which have long reached a supranational level, and whose inventions in the field of information technology and artificial intelligence are continuously changing the world around us.

In the past, people often reacted with panic to the changes brought about by new eras. These fears were mainly related to the possibility of losing their jobs. History records examples of resistance to mechanization due to similar fears. Prominent economists, politicians, and scientists have repeatedly pondered reducing the negative effects of workforce reduction. All these statements are justified, and in the past, a way out of difficult situations was always found. However,



in terms of its scale and complexity, the current transformation will be completely different from what humanity has experienced before.

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ФОРМУВАННЯ МАЙБУТНЬОЇ ЕКОНОМІКИ ШТУЧНОГО ІНТЕЛЕКТУ ДЛЯ ГЛОБАЛЬНОГО ЗРОСТАННЯ ТА ІННОВАЦІЙ

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Анотація. Стаття розглядає швидку інтеграцію штучного інтелекту в глобальний бізнес і підкреслює необхідність швидких дій з боку політиків. Обговорюються проблеми різного рівня готовності країн до впровадження ШІ, що оцінюються за допомогою нової розробки МВФ — Індексу готовності до ШІ. Цей індекс аналізує аспекти, такі як цифрова інфраструктура, політика у сфері людських ресурсів і ринку праці, інновації, а також регулювання та етика. Основна увага приділяється тому, що багатші країни, такі як Сінгапур, США та Данія, очолюють список готовності до ШІ, тоді як країни з низьким рівнем доходів відстають. Стаття наголошує на необхідності для розвинених економік збалансувати інновації в сфері ШІ із міцним регулюванням, а для ринків, що розвиваються, інвестувати в цифрову інфраструктуру та розвиток робочої сили.

Ключові слова: кібербезпека; штучний інтелект; підприємництво та стартапи; інтернаціоналізація; освітні технології.