The Role of Artificial Intelligence in the Legal, Business and Economic Spheres to Achieve Sustainable Development

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Abstract. The article examines the benefits of using Artificial Intelligence (AI) in various areas, namely, in the legal and economic spheres, and the possible risks associated with the impact of this new technology on information security and cybersecurity, which are integral components of national security. The paper emphasises that the development of AI has become a top priority for most states, but at the same time, questions arise about the security of this technology and the consequences of its use. The expansion of the scope of artificial intelligence to critical infrastructure, the complexity of verification of information resources and solutions created by such systems, and the threat of a dangerous impact of their results on human security, society and the state lead to risks associated with the use of artificial intelligence. The problematic issue is that the lack of reliable methods for verifying the conclusions and recommendations of artificial intelligence systems creates a source of uncertainty about their accuracy and practical value. This actually means that AI systems can be part of an information war aimed at spreading dubious unverified data and common fakes. The use of artificial intelligence helps to improve the level of computer security. This paper discusses the mechanism of assessing the risks of AI application in various fields and ways to manage them. Artificial intelligence plays an important role in ensuring national security and increases efficiency in various areas, but it is necessary to develop mechanisms for assessing the risks of using artificial intelligence systems. One of the key measures is the creation of an AI risk management system, which is the basis for the state's regulatory policy in this area.

Keywords: artificial intelligence; sustainable development, risk assessment, risk management.

JEL Classification: A11, M21, Q01

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INTRODUCTION

Relevance of the topic

The development of artificial intelligence has opened up new perspectives for various sectors of the economy and business in numerous countries around the world, unlocking previously unknown opportunities. Let's take a look at some of the ways artificial intelligence can be used.

- Many business owners are using AI for cybersecurity and fraud prevention;
- Almost every business owner is concerned about the impact of AI on website traffic;
- Many people believe that ChatGPT will help them grow their business;
- one in three businesses plan to use ChatGPT to write content for their own website, while others plan to use ChatGPT to translate it into other languages;
- most business owners use AI to create and optimise internal communications;
- However, a large number of people are concerned about the over-reliance on technology through the use of AI (Kontseptsiia rozvytku sfery shtuchnoho intelektu v Ukraini, 2021);

The impact of artificial intelligence can be observed both at the level of individual businesses and at the macroeconomic level (Artificial Intelligence Risk Management Framework, 2023). However, along with the broad possibilities of AI, its rapid development and spread create inherent significant risks that may even go beyond the economic sphere and affect important aspects such as human rights and democratic values. Therefore, studying the problems and prospects of artificial intelligence development is relevant and can help balance the potential benefits with the risks arising from its use.

Analysis of recent research and publications

Many scientists, both in Ukraine and abroad, are researching the processes of introducing artificial intelligence into law, economics and business practice, including: I.V. Kryvytskyi, O.G. Lytvyn, E.A. Tymoshenko, S.O. Ostrovskyi, V.H. Chorna, O.O. Chernysheva and others.

The purpose of the paper is to identify the expected results of the introduction of AI-based technologies in law, economy and business at the macroeconomic level by outlining the main potential advantages and disadvantages and its impact on sustainable development.

METHODOLOGY

The research was conducted using scientific methods that provide an objective analysis of the studied material. When analyzing this aspect, objectivity, the use of value and structural-systemic approaches, as well as logical techniques such as analysis, synthesis, comparison and generalization are important.

To achieve the set goals and solve scientific problems, the following research methods will be used in this work: theoretical and practical:

- A literature review is a fundamental step in scientific research, which consists of analyzing scientific publications, available sources and patents to determine the current state of research in the field of multimedia content and artificial intelligence. This process involves reviewing and summarizing information contained in the literature on the research topic, identifying key theoretical concepts, and using a variety of sources to confirm or support the identified findings. This process allows you to assess the degree of detail and completeness of the conducted research, as well as take into account the previous achievements of other scientists in the relevant field.

- The process of comparing the results of using the developed system with traditional methods of creating multimedia content using a series of experiments. Experimental research is a scientific activity that includes conducting special experiments to identify connections between phenomena or properties. This method provides an opportunity to obtain objective data and test hypotheses under controlled conditions. The key stages of the experiment are formulating a hypothesis, drawing up a research plan, collecting and analyzing data, as well as formulating conclusions.

- Analysis of the results: processing and analyzing the information to determine the advantages and disadvantages of the developed system, as well as its impact on the quality and effectiveness of the multimedia content, are key steps. Usually, this process includes several stages: data collection, cleaning, transformation, analysis, modeling and visualization. These steps allow you to get the information you need to make informed decisions.

- Statistical analysis: using statistical methods to process information, comparing the obtained results and forming objective conclusions is an important stage. These methods help to analyze

data, identify relationships between phenomena, forecast and make decisions. For example, statistical approaches are used for conducting experiments, assessing risks, finding optimal solutions, and other purposes. They allow you to confirm or refute hypotheses, establish the statistical significance of research results and ensure objectivity in decision-making.

A review of the main methods used in artificial intelligence systems has shown that today there are a large number of approaches in understanding the directions, means and foundations of the application of AI tools. Artificial intelligence is not limited to mathematical methods and models, but includes a wide range of software, hardware and methods based on the laws of logic, as well as informal methods. Artificial intelligence systems are developed using the theory and practice of neural networks, fuzzy logic systems, expert systems, and thinking modeling systems. Methods and systems of artificial intelligence have found application in various spheres of life, improving the standards of their functioning and the quality of technological processes.

RESEARCH RESULTS

Concept and legal regulation of artificial intelligence

The question of determining the legal status of artificial intelligence arises and becomes relevant primarily due to the technical capabilities of modern AI systems, their results exceeding even the most ambitious expectations regarding the complexity, structure and analytical abilities of these systems (Tymoshenko, 2023).

On the one hand, the coverage of AI technology achievements demonstrates its special significance for the legal and scientific community. On the other hand, the rapid growth of interest in AI may divert attention from important aspects and promote conspiracy theories about the future of artificial intelligence (Chui et al., 2022). The philosophical and legal analysis of this issue should aim to find ways to integrate AI concepts organically, taking into account the balance between the interest in technology development and security issues. In general, there are two opposing approaches to supporting the development of AI technologies (Shcherbak, 2021):

1. *Maximising the benefits to the industry*. According to this approach, scientists, lawyers, and IT specialists identify positive aspects and potential benefits of artificial intelligence in a wide range of areas**,** from healthcare and defence to education and others. This underscores the importance of creating a favourable technological, economic and legal environment for its further development (Tyurya Yu, 2022).

2. *The approach of effective legal regulation*. In this universal approach, representatives of various fields point out significant risks to law and order, the existing system of values, as well as to human health and life in the event of unrestricted rapid spread and development of artificial intelligence capabilities (both in the form of individual systems and as part of a complex of AI technologies). Based on similar beliefs, authors sometimes make pessimistic predictions that justify the importance of security issues in the context of AI development. However, warnings about artificial intelligence as a source of threats have different directions and roots, often having human origins.

The role of artificial intelligence in the legal sphere

According to the Concept for the Development of Artificial Intelligence in Ukraine, AI is an orderly set of digital technologies that help solve complex problems by applying a system of scientific research methods and information processing algorithms. These technologies can use information collected during the performance of tasks or created independently (This alliance aims to accelerate the adoption of inclusive, trusted and transparent AI worldwide, 2021).

The purpose of the Concept is to create a framework for the development of AI, promote scientific and innovative achievements in this area, and support cooperation between government agencies, scientific organisations, as well as with business and the public for its implementation and development in Ukraine (On the approval of the Concept for the Development of Artificial Intelligence in Ukraine, 2020).

In his study, Yurii Kryvytskyi emphasises that general artificial intelligence has a number of cognitive functions. Among them are the ability to understand the purpose of its existence, the ability to set interrelated and interdependent goals, not just tasks, and the ability to work autonomously (Kurakin & Skryabin, 2023). In achieving its goals, artificial intelligence should also be able to dynamically change its goals in accordance with changing external and internal conditions, as humans do (Kryvytskyi, 2021).

It is important to note that artificial intelligence technologies are already widely used in the field of law and legal practice. For example, in early 2017, JP Morgan announced the use of Contract Intelligence software that can quickly analyse legal documents in a few seconds, instead of the previous 360,000 hours of manual work (Boom in Artificial Intelligence Patents, Points to "quantum leap" in tech: UN report, 2019).

The law firm Baker & Hostetler also announced that they will use ROSS AI to analyse bankruptcy cases that were previously handled by almost 50 lawyers. ROSS AI, which is based on IBM's Watson cognitive computer, monitors legislation and legal situations around the clock, can read and understand language, formulate hypotheses, conduct research, generate responses with proper references and citations, and learn from its own mistakes (Chayka, 2023). These examples show that artificial intelligence is already being used in legal practice and is changing the way we work in this area. The use of artificial intelligence can save time and resources, increase the accuracy and speed of decision-making, and improve the accessibility of legal services to a wide range of users (Tymoshenko, 2023).

The White Paper on Artificial Intelligence: Lessons from Europe for Excellence and Trust, published on 19 February 2020, has become a key factor in defining the strategy for the development of artificial intelligence in Europe. The document highlights the importance of AI development and the need for change to ensure the safe and secure development of this industry, respecting the rights and values of European Union citizens. The Artificial Intelligence White Paper reflects the EU's strategic focus on economic development, innovation and the rational use of AI in society. The document covers various aspects such as ethics, accessibility, personal data security, and the need to support AI education and training (Evolvous, 2020). Overall, the White Paper plays an important role in shaping the regulatory framework in Europe that will facilitate the smart and responsible development of artificial intelligence (Piper, 2019).

When analysing the peculiarities of the development of artificial intelligence in Ukrainian legal practice, it should be noted that on 2 December 2020, the Cabinet of Ministers of Ukraine approved the Concept for the Development of Artificial Intelligence in Ukraine (On the approval of the Concept for the Development of Artificial Intelligence in Ukraine, 2020), which provides for the use of AI technologies in the field of law and administration of justice. In particular, the CMU Resolution No. 650 of 17 July 2019 "On the Establishment of a Working Group on Recodification (Update) of the Civil Legislation of Ukraine" (Kryvytskyi et al., 2021) provides for comprehensive work to improve the quality and substantive update of domestic civil legislation. The use of artificial intelligence in the legal sphere of Ukraine is a key step towards modernising the legal system using the latest technologies. The approved Concept for the Development of Artificial Intelligence in the country demonstrates the government's understanding of the importance and potential of artificial intelligence in the legal field (Androshchuk, 2019).

The Hague Institute for Innovation in Law (HiiL) supports the innovative development of domestic legal projects. Over the past two years, HiiL has allocated EUR 150 thousand to support legal start-ups in Ukraine. HiiL plays an important role in promoting the innovative development of Ukrainian legal projects, specialising in the development of legal innovation, the introduction of technology and improving access to justice (Priymuk, 2023).

HiiL's funding of legal start-ups in Ukraine is an important stepping stone for the development and promotion of legal projects. The allocation of €150,000 over the past two years demonstrates HiiL's interest in supporting and promoting innovative ideas in the Ukrainian legal industry. This fund helps startups to obtain the necessary resources to develop and implement their projects; in addition to financial assistance, HiiL also provides entrepreneurs and teams with the knowledge, experience and connections they need to succeed (Vinnikova, 2022).

HiiL's funding and support fosters innovative projects, improves access to justice, and grows the legal technology ecosystem in Ukraine. This helps to solve legal problems, increase the efficiency of the judicial system, and ensure greater accessibility and quality of legal services for citizens and businesses (Sadiku et al., 2021). In summary, cooperation with HiiL and receiving funding from this organisation is a key factor for Ukrainian legal startups and contributes to the innovative development of the legal sector in Ukraine (Recommendation CM/Rec,2020).

I. Varava's study points out that the use of advanced technologies such as artificial intelligence, automated document processing, Big Data and online justice can lead to a significant reduction in the cost of legal services. This opens up new opportunities for greater accessibility of legal services and promotes cost-effectiveness in the legal sector. The introduction of advanced technologies, such as artificial intelligence, into the legal sector has the potential to change the traditional approach to lawyer work and increase its efficiency. By automating routine tasks, analysing large amounts of data and understanding language, artificial intelligence can provide more accurate and faster information processing, which contributes to better legal decisions. Further development of artificial intelligence technologies in the field of law may change the well-known approach to law and create new opportunities for improving justice and legal aid.

Another key factor that will have a huge impact on the legal profession in the future is the relationship between lawyers and clients. Nowadays, clients in Ukraine expect their legal advisers to be ready to offer comprehensive business solutions, not just individual cases. This means that a lawyer must be not only a specialist in a particular area of law, but also an expert, analyst and manager in the industry where his client operates. In other words, lawyers must have not only in-depth knowledge and experience in a particular area of law, but also analytical, strategic and managerial skills (Spizheva, 2022).

According to The Law Society, a key element that contributes to the establishment of effective relationships between clients and law firms is a CRM (Customer Relationship Management) system, which is a software program designed to automate client interaction. This system allows law firms to manage their client base, store information about inquiries, manage projects with the ability to monitor the productivity of each employee, and automate the process of sending letters and SMS messages (A. Y. Shevchenko, 2016).

Using a CRM system in a law firm has a significant advantage in storing and analysing client data. It helps to create client profiles that include information about their needs, past interactions, payments, and other important transactions. By analysing this data, law firms can better understand their target audience (The IEEE Global Initiative…, n.d.). The implementation of a CRM system helps to increase the productivity of a law firm, helps to retain and attract clients, and increases client satisfaction. As clients' demands and expectations are constantly growing, this system is an important tool for the success of a law practice in the future AIM (AIM AT 2030 Artificial Intelligence Mission Austria, 2023) .

In view of the above, it is important to emphasise that today there are many legal grounds for the introduction of artificial intelligence into modern jurisprudence (Artificial Intelligence Index Report, 2022);

- Improving the level of understanding and effective use of information technology among citizens by developing educational programmes aimed at using advanced technologies in the process of forming a comprehensive personality output;

- information and documentary support for legal activities, including automatic classification of legal documents;

- Developing projects to solve various legal problems with the help of artificial intelligence, using automated intelligent classification of legal documents, case and document management, as well as database collection and analysis;

- development of intelligent analytical software to support legal practice using AI, aimed at comparing legal rules and regulations, determining their hierarchy and identifying which legislation has a greater legal impact;

- preparation and provision of legal expert opinions using electronic automated systems;

- support in the process of forming decisions in various tasks based on implicit, insufficiently accurate or unstructured information in a significant and complex context (Polikovska, 2023).

Therefore, the use of artificial intelligence in legal practice can help resolve complex legal issues and ensure significant and progressive reforms in the legal sector. The introduction of AI in legal reform expands opportunities for improving legislative processes.

The role of artificial intelligence in the economic sphere

Every day, business analysts, entrepreneurs, and economists have to work with a large amount of statistical data that needs to be interpreted correctly. Successful data analysis is crucial for choosing the priority direction of economic development and business management (The

economic potential of generative AI: The next productivity frontier, 2022).

AI **is** a technology that is based on a certain model and, using various methods, especially mathematical analysis, can evaluate various data, make predictions, identify relationships between concepts, and detect patterns, i.e., model the processes that occur in the human brain when processing information. Artificial intelligence technologies are developed for different purposes, and depending on this, the range of tasks for a particular system is determined and the optimal method of its configuration is chosen (Litvin, 2023).

By applying various methods of training artificial intelligence systems, developers are trying to adapt them to solve various problems and expand the scope of data mining applications. This sector of knowledge is actively evolving, as the volume of processed data is growing exponentially with the Internet and the proliferation of social media. The use of artificial intelligence can improve the productivity, quality and speed of processing various data, which is critical for economic progress (The economic potential of generative AI: The next productivity frontier, 2022).

Artificial intelligence can automate a significant number of economic and production processes. These technologies will improve the quality, accuracy, and scale of operations, which will lead to improved economic performance and help increase profits. The financial benefits may be the main incentive for investors, business leaders, banks and the government to invest significant resources in data analytics systems.

When it comes to the overall development of the economy with the help of artificial intelligence, medicine, finance, industry, and transport are becoming important areas for the introduction of innovative developments. It is through qualitative improvements in these sectors that high economic growth is expected to be achieved (Makedon et al., 2021).

The introduction of artificial intelligence systems plays an important role in industry. It should be noted that the use of data mining systems is essential at any stage of the production process. AI helps organise the process of designing new products, analysing potential suppliers, and studying the requirements for equipment and components in detail. These systems are integral in assessing, planning and designing transport routes.

AI plays an important role in market research, being used to analyse the situation in the target market, strategically plan changes in demand for goods and services, and manage production volumes (Yushkevich, 2021).

The main incentive for such an active use of AI-based information systems is value creation. Many companies realise that AI not only helps to reduce costs, but also plays an important role in increasing profits, for example, by improving customer relations, making a new contribution to innovation, and so on (Mohylevska & Sidak, 2023).

Another important area of AI application is retail. Recently, online trading platforms have become extremely popular. These marketplaces allow customers to quickly find the products they need by providing access to them and allowing them to communicate with sellers directly. The use of artificial intelligence in this area helps to facilitate online shopping and ensures effective contact between customers and sellers. In addition, these technologies allow us to assess customer attitudes towards a particular brand or product based on the analysis of reviews. The introduction of artificial intelligence can also simplify many processes related to inventory management and product location.

In 2018, the international company McKinsey conducted a study on the impact of artificial intelligence on the economy, considering five main categories of AI: computer vision, natural language, virtual assistants, process automation, and advanced machine learning.

McKinsey's assessment shows that the use of smart systems will help to find and develop innovative areas necessary to increase economic potential in all industries and areas of activity.

The overall goal of applying AI systems in manufacturing is to fully automate all manufacturing processes, which can lead to the elimination of the need for human presence. It is assumed that all stages of production - from the purchase of raw materials to product quality control, shipment tracking - will be managed by systems trained in various machine learning models.

In addition, the use of artificial intelligence systems will help reduce equipment depreciation costs by detecting and eliminating malfunctions in a timely manner. These systems will also provide control over the implementation of production plans and other factors that are usually assessed by employees.

It is especially important to note the benefits of AI in military technology. AI helps to track the movement of enemy equipment and military personnel, shoots down missiles, improves target compliance by unmanned aerial vehicles, and other aspects.

Even with all the positive aspects of using artificial intelligence technologies, scientists are considering the potential negative consequences of this process (Charts that Show What People Around the World Think About AI, 2022).

Researchers have found that the telecommunications, retail, and banking industries are the most suitable for implementing AI innovations. While the healthcare, transport, agriculture, and education sectors require support from the government and other stakeholders to successfully implement AI technologies (Marr, 2018). In the third case, most AI systems have a narrow specialisation. They are trained according to a certain pattern and cannot go beyond it, which limits their application capabilities (The economic potential of generative AI: The next productivity frontier, 2022).

Ukraine currently has limited use of artificial intelligence in the private sector and is mainly based on foreign developments. Often, such developments are created in Ukraine, but the intellectual property rights belong to foreign companies. According to LinkedIn, there are currently more than 2,000 software development institutions and companies in Ukraine that specialise in artificial intelligence (LinkedIn users in Ukraine in 2022, 2022). Among them are the world-famous companies Grammarly, Reface, Ring Ukraine (SQUAD).

Currently, artificial intelligence developments are only partially implemented, but science is on the verge of creating a full-fledged AI. Ukraine lags behind the leading countries in terms of the volume and pace of implementation of these developments, but has sufficient capacity in fundamental knowledge to achieve a breakthrough in the development of completely new technologies in the field of artificial intelligence.

The role of artificial intelligence in business

In today's world, artificial intelligence (AI) systems are increasingly penetrating various areas of business to improve efficiency and enable more accurate decision-making. Over the past ten years, the AI market has been growing rapidly, requiring companies to spend more time researching and implementing business strategies with this technology. The use of AI in business helps businesses to significantly reduce financial costs and time, while increasing their profits (Sizing the prize What's the real value of AI for your business and how canyou capitalise?2021).

More than 35% of companies worldwide use artificial intelligence in their operations. The highest level of AI integration into business processes is observed in China, where about 58% of companies do so. In India, 57% of companies use this technology, while in Canada, the figure is 48%. The United States of America is among the lowest in terms of AI adoption, with only 25% of companies using this technology (AIconference, 2022).

The global AI market is projected to reach $1.85 trillion by 2030. In addition, research shows that large corporations use artificial intelligence twice as often as small companies (Cardillo, 2023).

Artificial intelligence offers many benefits to companies. First, it facilitates better customer service, as AI can interact with customers in real time and answer their questions in a more natural way. Second, AI helps managers make accurate and consistent decisions quickly. Thirdly, the use of AI helps companies reduce operating costs (Blogersideas, 2022).

The fourth benefit of AI is to improve the understanding of a company's customers by analysing large amounts of data to identify specific trends and patterns. This information helps to identify current customer needs and future expectations from the company. Finally, artificial intelligence helps companies forecast sales and profits. Forecasting profits and sales is a complex task that requires a lot of different inputs from customers, suppliers, and internal staff. But with the help of AI tools, this task can be performed much more efficiently and quickly (Nguyen, 2022).

Today, there are many examples of successful use of artificial intelligence in companies' business. For example, Netflix uses artificial intelligence to create highly personalised video content for its users. Google also widely uses artificial intelligence in all areas of its business**,** from understanding web pages for its AI-powered search engine to improving customer experience through digital transformation tools. In addition, their voice recognition system has made significant strides with machine learning, data analytics and natural

language processing capabilities (Does your business need artificial intelligence, 2020).

Artificial intelligence has been successfully used by Amazon to personalise product offerings for each customer and detect suspicious activity on their website to prevent fraud (Koshelieva, 2019).

It's true, Apple uses artificial intelligence and big data to develop personalised experiences for its customers. This allows the company to create special commercial offers that meet the needs and wishes of users.

Meta, for example, uses artificial intelligence in various forms, such as machine learning models and natural language processing, to improve the user experience on social media platforms and protect user data and interests. AI technologies play a crucial role in content moderation, personalised recommendations, and overall system optimisation in the Meta ecosystem (Shcherbak, 2021).

One of the most notable applications of AI in business is chatbot systems that provide real-time support to customers. For example, H&M uses a chatbot on Facebook Messenger to help customers choose the size of clothes, check the availability of goods, and obtain other necessary information. Chatbots are based on machine learning and natural language processing technologies, which allows them to accurately understand customer queries and respond to them in real time. This helps reduce customer service costs and increase customer satisfaction (Artificial intelligence for business, 2023).

Regarding the development of artificial intelligence in Ukraine, it is worth noting that the country is actively developing in this area and already has several successful projects. For example, Grammarly uses artificial intelligence to improve the style of English-language texts. Rozetka uses the system to predict demand for goods and optimise delivery processes. Genesis, a Ukrainian tech company, creates software to automate banking operations by using artificial intelligence to solve tasks in risk management, financial analysis, and routine process automation. Other examples include SoftServe's automated logistics planning and management system, Datrics' data analytics system for financial decisions, and many others.

During conflicts and wars, artificial intelligence is actively used in various fields. The application of artificial intelligence in the military sphere includes surveillance, intelligence, logistics, command and control, and other aspects. It also contributes to solving humanitarian problems and improving military training (Kravchenko, 2023).

Business leaders and business owners are increasingly seeing opportunities in the use of artificial intelligence and other innovative technologies, despite the high costs, implementation complexities, and risks. Experts believe that the impact of artificial intelligence and other innovations on the economy exceeds the impact of political risks or climate change (Kuzyomko, 2021).

Looking at a wide range of studies, it can be noted that the successful implementation of artificial intelligence in the business activities of any company requires detailed planning and organisation. Common mistakes in this process include setting unclear goals, not choosing the right time to implement AI, lack of necessary skills for employees to interact with AI, limited access to important data, and imperfect organisational structure.

Risks of using artificial intelligence

In order to assess the potential impact of cybersecurity threats and reduce the likelihood of their implementation, it is necessary to combine the efforts of scientists, researchers and developers from academic and educational institutions, industrial and manufacturing enterprises, public and governmental organisations, legislative and executive authorities, as well as the international community.

The implementation of these measures will help create a risk reduction system that will allow to promptly identify, prepare for, and respond to challenges and threats associated with the development and operation of artificial intelligence systems (Yanenkova, 2020).

The risks posed by AI systems are unique in many cases. For example, AI systems may be trained on data that may change over time, sometimes significantly and unexpectedly, affecting the functionality and reliability of the system in ways that are difficult to understand. Artificial intelligence systems and the contexts in which they operate are often complex, making error detection and response difficult.

Artificial intelligence systems are socio-technical in nature, which means that they are influenced by social dynamics and human behaviour. Risks and benefits of artificial intelligence can arise from the interaction of

technical aspects with societal factors related to how the system is used (Artificial intelligence for business, 2023).

The expansion of artificial intelligence systems contributes to an increase in risks to national security in the information sphere. These risks include:

1. Strengthening cyberattacks. Artificial intelligence can increase the efficiency of identifying vulnerabilities in security systems, executing attacks, protecting against their consequences, and imitating human behaviour at various stages of a cyberattack (Hulak et al., 2020).

2. Formation of channels of information leakage with limited access (Satter, 2023). Artificial intelligence systems can contribute to increasing computer intelligence by analysing large amounts of data, identifying trends and patterns to reveal sensitive information about objects related to national security, critical infrastructure, etc. One example was the ability to identify US military installations using an interactive map published online that displays the location of users of fitness devices such as Fitbit.

3. Data Poisoning (DP) attacks are specially targeted attacks that aim to alter or distort data used for machine or deep learning. This can lead to an artificial intelligence system acquiring undesirable skills that can pose a threat to individuals, society, and the country as a whole. Typically, the machine learning training process involves using a large amount of data to train the model. This data can be collected from a variety of sources and may contain errors or inaccuracies. A DP attack exploits these inaccuracies to inject false or malicious data into the training set (Rahman et al., 2023).

Given the possibility of using artificial intelligence (AI) systems to create robotic military systems that can automatically detect and attack targets without the need for human intervention (Data Poisoning and Its Impact on the AI Ecosystem, 2023), a DP attack could have dire consequences.

This list of possible threats is not exhaustive, but it allows us to assess the complexity, depth and importance of the problem. Each of these threats requires a deep understanding of AI technologies and the development of effective strategies to prevent them.

In order to protect against specific threats to the use of artificial intelligence, a number of measures need to be taken to mitigate the risks associated with these systems, including approaches to identifying these risks. Similar to the risks that exist for other types of technology, AI risks can come in different formats and can be classified as short-term or long-term, with varying levels of probability, systemic or localised, and with a significant or minor impact (Artificial intelligence for business, 2023).

One of the key steps is to develop an AI risk management system that will form the basis of the state's regulatory policy in this sector. The implementation of AI risk management measures is proposed in three areas: regulatory, technical, and organisational (Table 1).

Table 1. Implementation of AI risk management measures

Regulatory and legal measures	*Technical measures*	*Organisational measures:*
1. Develop and adopt a state strategy in the field of artificial intelligence; **2.** Legislative regulation: establishing clear legal regulations that control the development and use of AI can be an effective way to address these risks; **3.** International cooperation: participation in international agreements and initiatives aimed at regulating artificial	**1.** Support government development and implementation of secure AI systems with built-in security measures. **2.** Setting technical restrictions for AI access to data, including personal data of citizens, to prevent the illegal use of this data. **3.** Creation of AI systems for conducting knowledge audit of the used AI application systems.	**1.** Create a model of AI risk management that includes mechanisms for determining the levels of threats and the likelihood of their implementation in various areas of activity of people, society and the state. **2.** Conduct educational campaigns to raise awareness of the potential risks associated with AI.

intelligence, developing international standards and safety norms for AI and their implementation in Ukraine.	**4.** Development of mechanisms for detecting signs of dangerous AI activity.	**3.** Cooperation with the private sector: The state cooperates with the private sector to create secure AI systems and develop effective strategies to counter potential threats. **4.** Establishment of specialised state bodies: Establishment of specialised institutions responsible for monitoring and responding to AI-related threats.

Thus, the key stage in the risk management system arising from the use of artificial intelligence systems is to assess the landscape of potential threats and identify them. This is a process of step-by-step search for new types of risks and collection of key characteristics for further interpretation, analysis and processing.

CONCLUSIONS

The study found that the introduction of artificial intelligence (AI) has a significant impact on both national economies and the business sector, which is a key driver of economic growth. The study shows that AI can help double economic growth rates, particularly in developed countries, and significantly increase productivity in many sectors of the economy. It is noted that businesses most often use AI to optimise customer service, cybersecurity, fraud prevention, the introduction of digital assistants, and customer relationship management. In most cases, customer interaction with AI can be improved with the help of chatbots. Improvements in manufacturing processes, search engine optimisation, and automation can significantly improve internal processes in organisations.

The introduction of artificial intelligence in business can have a positive impact on customer relations, productivity and sales. The benefits of its implementation include cost savings, process acceleration and risk mitigation. However, the main dangers include increased technological dependence, bias in decision-making, spread of misinformation, breach of confidentiality, and the possibility of job losses. To prevent these negative consequences, it is important to properly develop artificial intelligence (the technological stage) and implement the necessary government regulation. Future research could examine Ukraine's legal framework governing the development, implementation, and use of artificial intelligence in order to propose improvements based on it.

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