

Application of artificial intelligence in modern public administration: new opportunities and challenges

Kateryna Shvets¹, Andrii Onyshchenko², Volodymyr Kudin³, Nataliia Korchak⁴, Olena Ivani⁵

¹Department of Public Administration, Interregional Academy of Personnel Management, Kyiv, Ukraine

²Department of Information Systems and Technologies, Faculty of Information Technologies,
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

³Department of Intellectual Technologies, Faculty of Information Technologies,
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

⁴Department of Public Policy, Educational and Scientific Institute of Public Administration and Civil Service,
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

⁵Department of Law and Public Administration, Sumy State Pedagogical University named after A.S. Makarenko, Sumy, Ukraine

Article Info

Article history:

Received Dec 13, 2023

Revised May 14, 2024

Accepted Jun 18, 2024

Keywords:

Artificial intelligence

Automation

Digitalisation of society

Public administration

Technological development

ABSTRACT

Humanity is entering a technological era of convergence of artificial intelligence (AI), cyber and biotechnology, robotics and additive manufacturing, which creates unprecedented opportunities and risks on a global scale. AI has quickly become an important topic for global development. Not only the corporate sector but also governments are interested in creating a favourable environment for these technologies. This article explores the role and impact of AI in the context of modern public administration. The authors assess how AI opens up new opportunities for improving public services and the efficiency of management processes. Particular emphasis is placed on the ability of AI to analyse large amounts of data to inform decision-making, improve interaction with citizens, and optimise internal management processes. Potential challenges are also discussed, including ethical issues, privacy concerns, and automation risks. The article proposes strategies for a balanced implementation of AI in public administration, with a special emphasis on the need to develop skills and competencies among civil servants to use these technologies effectively.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Kateryna Shvets

Department of Public Administration, Interregional Academy of Personnel Management

03039, 2 Frometivska Str., Kyiv, Ukraine

Email: kateryna_shvets@sci-academy.cc

1. INTRODUCTION

In the current conditions of state-building, given the peculiarities of the processes taking place during the period of military aggression in Ukraine, the main focus is shifting to the creation of an effective system of public administration that would be able to ensure the country's sustainability and promote Ukraine's development as a European state governed by the rule of law with a high level of democracy. It should be remembered that the creation of effective public administration in Ukraine is possible only through a combination of modern scientific research in the field of state building, law-making and regulatory activities, and modern organisational and managerial practices. In addition, it is important to improve the state apparatus and the material and technical support for its functioning [1]. Today, the effectiveness of public administration in general is determined by the efficiency of management decisions made at all levels of government. At the same time, the absence of effective mechanisms and tools for interaction between them does not allow for effective development of the state as a whole.

Public administration is influenced by several trends and factors of social development. The leading role among them is played by the processes of the environment external to public administration: globalisation and its challenges, the transition of modern society to the information stage of development [2]. The war undoubtedly brings about relevant changes and new challenges. Given this state of affairs, it is necessary to pay attention to the latest forms and methods of management that can meet the existing management needs. Among these newest management tools, we should highlight the quite popular artificial intelligence (AI). It is important to pay attention to and analyse the work of AI with a focus on finding out how it can be used in public administration. This issue is also important and relevant given that the President of Ukraine has named the establishment and development of digitalisation in Ukraine as one of the strategic goals of improving and actively engaging in public administration. Using these concepts, both the state and society have concluded that it is time to develop AI and IT technologies in both private and public administration [3].

AI continues to evolve, its application in the public sector is becoming more and more extensive, and it has significant potential to change approaches to the management of society [4]. On the one hand, AI can increase the efficiency of public administration, facilitate fast and accurate data analysis, improve interaction with citizens, and provide personalised services. This can lead to more efficient use of resources, public safety, and optimised decisions in healthcare, education, and other sectors. On the other hand, the use of AI also carries risks that should be taken into account. Ethical issues, demonstrating transparency and accountability, unequal access, as well as data security and privacy are relevant and require attention when introducing AI to the public [5]. The growing amount of data accumulated in the public sector requires new approaches to its processing and analysis.

AI can identify patterns and dependencies in large data sets so that governments can make informed decisions. It can identify trends and predict events, which contribute to more accurate and efficient planning. There are more and more examples of AI being implemented in public administration. For example, the use of machine learning algorithms can help detect fraud and corruption in social security systems, ensure efficient planning of transport networks and route optimisation, and automate document processing and citizen interaction.

Many scientific works have been devoted to these issues, in particular, by such scholars as Yarovoi [6], Denisyuk [7], Tsiapa [8], Fostolovych [9], Kocharyan [10]. The purpose of the article is to study the role and impact of AI in the context of modern public administration. Assessing how AI opens up new opportunities for improving public services and the efficiency of management processes. Exploring the ability of AI to analyse large amounts of data for informed decision-making, improving interaction with citizens, and optimising internal management processes. Identify potential challenges, including ethical issues, privacy concerns, and automation risks. To propose a strategy for the balanced implementation of AI in public administration, with a particular emphasis on the need to develop skills and competencies among civil servants to use these technologies effectively.

2. RESEARCH METHOD

To achieve the goal and solve the research objectives, the relevant general scientific and special methods of scientific knowledge based on the principles of objective, comprehensive and integrated analysis of relations in the chosen field of research were used. The dialectical method applied to the study of the role of AI in public administration allows for a thorough analysis of its impact and also creates an opportunity to determine the optimal strategies for implementing these technologies to achieve effective and modern public administration. The approach based on the dialectical method allows for avoiding one-sided assessments and taking into account the complex interrelationships between technological innovations and the dynamics of modern governance systems.

In the context of assessing how AI opens up new opportunities for improving the quality of public services and the efficiency of management processes, the logical method is used to analyse and study the chain of connections and the consequences of this impact. The logical method identifies the logical links between the use of AI and the improvement of various aspects of management processes. The effectiveness of management processes is assessed by analysing the logical interaction between decisions made with the help of AI and their impact on the quality of services and the efficiency of public administration. The logical method in this context allows us to systematise and determine how the use of AI is becoming a key element in optimising public services and improving the efficiency of management processes.

System-structural analysis is a key tool for studying the capabilities of AI to analyse large amounts of data to make informed decisions, improve interaction with citizens, and optimise internal management processes. System-structural analysis allows us to consider AI as a complex system that interacts with various data components and processes. The study examines the structure and interaction of the elements of an AI

system in the context of big data analysis. It also explores how this technology can improve citizen engagement and optimise internal governance processes. A formal legal method was used to identify potential problems, including ethical issues, privacy concerns, and automation risks. The analytical method used to substantiate the theoretical conclusions of the study is key to defining a strategy for the balanced implementation of AI in public administration.

3. RESULTS

With the widespread use of AI in the implementation of state tasks and functions, a new chapter in the history of public management and administration has begun. Advanced digital technologies have significantly changed and continue to change the procedures for providing public services, ensuring interaction between public authorities and citizens, and engaging citizens in the management of public affairs [11]. The concept of AI has been considered by scholars in various aspects: technical, educational, economic, and informational. As of today, this concept is enshrined in the concept of AI development in Ukraine dated 02 December 2020. No. 1556-p [12] as “an organised set of information technologies that can be used to perform complex tasks by using a system of scientific research methods and algorithms for processing information received or independently created during work, as well as to create and use own knowledge bases, decision-making models, algorithms for working with information and determine ways to achieve the tasks set”.

The rapid development of information and communication technologies, the need to find ways to process large amounts of data and information, and the change in the concepts of space and time in the digital environment have become the basis for the development of AI technologies [13]. The changes give rise to challenges and risks: how to organise an effective digital public administration, how to reduce digital violations, how to ensure digital dignity, how to protect the digital identity of the people, how to develop the digital intelligence of citizens, how to raise the level of trust in the government, how to ensure digital literacy for everyone. AI technologies are very dynamic, and fast, and require public administration entities to carry out transformational processes within each authority, interact with other authorities and the public, and ensure that new technologies optimise decision-making, guarantee the rule of law, respect for civil rights and freedoms, democratic values, and ensure sustainable economic development that reduces existing gaps in society [6].

The topic of AI and robots is being actively developed in the state context in several countries, including the UK, in parallel in two directions: i) grant funding of developments and their implementation in commercial sector companies; ii) research funding in educational and research organisations. In particular, in 2010, most countries introduced electronic delivery of state and municipal services to citizens and businesses, and the UK created a single portal for government data. New (innovative) digital technologies (AI, the internet of things (IoT), e-governance, and drones) are replacing traditional approaches to production and business automation. The authors of the so-called “digital strategy” believe that being at the peak of this wave of digital innovation is super necessary for business. This is the key to the UK’s modern approach and competitiveness in 2023 [14]. The United States also has a similar policy instrument, in particular, the national strategic plan for research and development in the art of new intelligence. This is nothing more than the US strategy for the development and application of AI at the level of public administration and the economic component, of course.

As a recommendation for the Ukrainian government, it is worthwhile to organise an interdepartmental commission on the possible use of AI in the public administration process. Such a group should include scientists, economists, lawyers, programmers and other specialists working side by side. In such joint activities, it is necessary to develop and implement a state programme of automated public administration based on AI technologies to gradually partially replace some officials, possibly judges and police officers [9]. The implementation of the recommended measures will also result in the elimination of corruption in the public administration system and increase the efficiency of the system itself. Countries that have implemented AI in their public administration systems will be able to compete on the international stage and will be able to withstand various internal and external threats. In this case, it is important to remember that bringing domestic management practices in line with current trends in the global transformation processes of European countries will help to achieve a positive result for the functioning of public administration in Ukraine [15].

In 2012, the United Nations presented the report “E-government for people”, which examines the benefits of information and computer technologies for the development of e-government, namely for the quality of online services provided by the state; for integrated governance; for creating services related to life situations; for overcoming digital inequality; for outlining the current picture and understanding the challenges. In other words, the UN states that states should implement state programmes and policies aimed

at correcting the existing instability in societies regarding equality, and access to the benefits that the use of information and computer technologies, in particular AI technology, can provide [16].

By digitalisation of society, we mean the process of creating and developing a digital environment - a set of conditions and factors that provide the most favourable conditions for building a people-oriented, open to all, development-oriented civil society where everyone can fully realise their potential, contributing to social and personal development, improving the quality of personal and social life. The state ensures the functioning of information resources, and automated methods of their processing and use to implement national interests in the daily activities of public servants and improve management interaction, development, productivity and efficiency in the system of public administration and local self-government [8]. In global practice, each country chooses its role in building a digital society. Summarising the approaches, we can conclude that the first approach is the active (centralised) participation of the state in the development of the digital society through interference in all its processes; the second is a liberal (supportive) approach, where the state carries out minimal state interference in the development of the digital society, the state intervenes only when there are conflicts over violations of the needs and interests of an individual, society, and the state; the third is a situational combination of the previous two approaches.

In the European Union, more and more attention is being paid to regulating issues related to the use of AI (the declaration on cooperation on AI adopted by all EU member States, Norway and Switzerland (April 2018), the communication “AI for Europe” (April 2018), the coordinated plan for the development and implementation of AI in Europe (April 2018)), the harmonised plan for the development and use of AI developed in Europe (December 2018), the definition of the EU’s digital strategy in the European commission’s communication shaping Europe’s digital future (February 2020), the white paper on AI - A European approach to excellence and trust (February 2020)). The overall goal of the agenda is to achieve the EU’s leading role in the development and deployment of advanced, ethical and secure AI, contributing to a human-centred approach at the global level. The main objectives of the agenda include encouraging all EU member states to develop their national AI strategies and adopting common indicators to monitor and analyse the success of such strategies. The European commission’s AI watch was established to monitor the development, implementation and impact of AI [17].

Particular attention is paid to the study of AI potential in the public sector, including opportunities, achievements, and barriers to the use of AI from both the “user” and the “regulator” sides. The AI White Paper highlights the importance for public administrations, hospitals, utilities, transport, financial supervision structures, and other areas of public interest to use AI in their operations. It is about developing the governance mechanisms and regulatory frameworks necessary to protect human rights and ethical standards of AI use, especially in sensitive policy areas and in the area of relations between public administration and citizens. The main priorities of the EU policy in this area include the provision of AI-based services, the implementation of an approach to the government (s) as a platform that stimulates the development of AI in Europe, and the provision of public funding for innovation and reliability of AI [18]. The conceptual basis for AI regulation is the asilomar principles, approved in 2017 by the expert community at an international conference in California. Out of 23 principles, the latter defines the basis for the development of transnational regulatory mechanisms in the field of AI technologies: “Superintelligence should be developed only in the service of widely shared ethical ideals and for the benefit of all mankind, not just one state or organisation.”

An analysis of the international documentary framework reveals the priority of ethical principles for the development and implementation of AI technologies, as evidenced even by the titles of documents, such as the council of Europe resolution “technological convergence, AI and human rights”; the organisation for economic development and cooperation directive “recommendations of the AI council”, which is the first intergovernmental standard for regulating personal data protection, digital security, risk management, and responsible business behaviour; the organization for security and cooperation in Europe’s guidelines on the use of AI [19].

Today in Ukraine, the focus should no longer be on further building up the technical potential of society, but on its intellectualisation and humanisation, creation and use of new social technologies based on the effective use of the main strategic resources of humanity - intellectual, managerial, informational, spiritual, cultural and legal, and AI technologies will help in this. In such a complex organism as a modern society, AI technologies and other digital tools will help to establish effective interaction between government agencies and thus increase the efficiency of decision-making and reduce losses from managerial errors. At the same time, it is of particular importance to address such tasks as empowering citizens to influence government decision-making and control authorities at all levels; understanding responsibility, and ensuring law and order that protect individual rights and freedoms [20].

By using AI in public administration, the state is obliged to transform its information systems so that they are accessible and understandable, and in terms of convenience and interactivity, they are closer to social networks to engage citizens in constant, interested and responsible interaction. By social

technologization, we mean the process of optimising social space, overcoming its imbalance based on an innovative method of mastering social activities and actively influencing the development of social systems using information and communication technologies, AI and social technologies. They make it possible to introduce not only cognition and methods of social diagnostics into the process of its transformation, but also active ways of changing it: motivation, learning, innovation, and creativity in subjects and objects of public administration.

Society does not care whether the essence of the managerial orientation of the technology of social activity is humanistic or instrumental. We believe that only the “humanisation” of standards, norms, tools, and techniques orientates managers to the conscious, creative performance of tasks, thereby shaping the desire to achieve the result of performing tasks more efficiently, effectively, and quickly. The instrumentalization of the norm, focusing on obedience to volitional pressure alone, can obscure the main goal. Therefore, it is very important to combine managerial socio-technological solutions, in particular decisions on the use of AI technology with the deepening of democracy and the expansion of self-management, which makes it possible for every manager of any managerial level to self-realise the creative potential of the personality [7].

The use of information and computer technologies, in particular AI, allows for fuller use of the main resource of human survival, according to scientists, which is management based on innovative principles. Through the prism of this approach, it is advisable to define the technologization of social public administration as a consistent and clear formulation of the rules that must be followed to transform the initial data into the desired result of solving a management task. Its main characteristics are determinism, i.e., the unambiguous result of the transformation of the initial data; discreteness, i.e., the separation of technologization into separate stages, procedures and operations; massiveness, since its algorithm can provide a solution to any problem. The creation of such a system will allow citizens of the digital society to independently assess the effectiveness of public authorities. Of course, not every public body’s performance can be quantified, but political will is always needed to put in place a public system of performance indicators for government and municipal bodies, organisations, and institutions regularly [21].

The public sector should be a leader in determining the national information policy and its priorities, in particular, related to AI; manage this policy and ensure coordination of activities (including international cooperation) in the field of providing information services; to regulate, within the limits provided by law, the development, introduction of standards and control over the quality of the services provided; invest in projects, programs and services related to the public information sector; create a general favourable environment for direct foreign investment and support of international financial institutions; participate in the formation of national, branch and municipal information systems [22]. It is clear that the digitalisation of public authorities leads to increased staff productivity, increased efficiency of the organisation, improved operational efficiency, cost savings and a clear inventory of resources, improved work discipline, balanced decision-making, fundamentally new information, the ability to model and forecast situations, and transparency in decision-making. The active and effective use of AI technologies will transform public administration into digital public administration.

It should be noted that the assessment of the development of AI technologies and the digitalisation of all activities as a factor in building a digital society requires the intensification of high-quality and effective information and communication interaction between public administration bodies and the public and citizens [23]. AI is already being used in the public sector to improve public services. This is facilitated by chatbots and virtual assistants that provide fast and accurate information about services and answer questions. Such systems can operate around the clock and reduce staff workload. The study identified the benefits of using AI in public administration:

- Data analysis and forecasting: AI can effectively analyse the volume of big data from various sources and extract useful information. This can help managers make decisions based on objective analytical data, as well as predict future trends and risks.
- Improving citizen service: AI can provide fast and efficient services to citizens, for example, by introducing virtual assistants to answer questions, automating the application process, or improving e-services.
- Resource planning: AI can be used to optimise the use of resources such as budget, staff, and infrastructure. It can help find the most efficient ways to use resources and allocate them according to needs and priorities.
- Decision support: AI can be a valuable tool for decision-making by managers.
- Performance management and monitoring: AI can be used to measure and monitor the effectiveness of government programmes and projects. This can help identify problem areas, provide quick responses, and improve the effectiveness of management decisions.

- Improving public engagement: AI can help engage the public by analysing social media, forums, and other sources of public opinion. It can identify the key issues and concerns of citizens, allowing managers to better understand their needs and implement appropriate policies.
- Crisis prediction: AI can analyse large amounts of data, including news, social media, sensors and other sources, to predict crises such as natural disasters, epidemics or terrorist attacks. This allows managers to plan and take precautionary measures.
- Electronic document management: AI can be used to automate document management, including classification, indexing, and searching for information. This will facilitate access to documents, consolidation and storage in a secure electronic format.
- Electronic voting: AI can be used to implement an electronic voting system that ensures the convenience and security of the electoral process. This can improve the quality of democratic governance and ensure greater citizen participation in decision-making.
- Personalised services: AI can provide personalised services to citizens based on their needs and requirements. Through data analytics, AI can recommend customised solutions and services that will help bring public administration closer to citizens.
- Predictive budgeting: AI can help forecast and plan budget resources based on the analysis of economic data and other factors. This can help to allocate funds more accurately and increase the efficiency of spending in the public sector.
- Detecting fraud and corruption: AI can be used to analyse data and detect illegal activities such as fraud and corruption. It can analyse financial transactions, contracts, and more to detect and prevent them from being misrepresented.
- Cybersecurity: AI can be used to detect and prevent cyberattacks, ensuring the protection of control systems and data.
- Service demand forecasting systems: AI can analyse data on the demand for various services and resources, allowing managers to plan and allocate them efficiently.
- Electronic payments and financial management: AI can be used to implement electronic payment systems, facilitating payment for various services and protecting financial transactions. It can also help manage budgets and financial processes in the public sector.
- Interactive reporting systems: AI can create interactive reporting systems that allow citizens to interact with the government and monitor the implementation of projects and programmes. This includes transparency and accountability in public administration.

While the use of AI in public administration has significant benefits, it also involves certain risks. It should be remembered that the use of AI in public administration can have numerous benefits, but it also involves several potential problems, ethical issues, privacy concerns and automation risks. The question arises as to how transparent and responsible AI systems in public administration are. If algorithms are used to make important decisions, it must be clear how they work and what data they take into account. There is a risk of systematic and non-transparent bias in decision-making, which can exacerbate inequalities in society if the data they are trained on reflects stereotypes or distortions of reality. There is a threat of violation of citizens' privacy when collecting and processing large amounts of data for use in AI systems. The use of AI in public administration may require large amounts of personal data of citizens. This raises questions about how this data is collected, stored and used, and whether it is adequately protected. The use of AI systems for mass surveillance may violate the privacy of citizens and cause outrage over invasions of privacy [24].

The introduction of automated AI systems may result in the loss of jobs in areas where human labour is replaced by machine algorithms. There is a risk that the use of AI could lead to a digital divide, with some groups or regions benefiting more from these technologies than others. Dependence on AI systems may look attractive, but it can pose a risk to society if these systems become unavailable or vulnerable to attack. Also, the introduction of new technologies may face distrust from the public and relevant government agencies. Decisions made by AI systems may be objected to by the public if their criteria and algorithms are considered to be unlawful. Addressing these issues will require the active participation of various parties, including government agencies, technology developers, ethics experts, and members of the public.

4. DISCUSSION

AI has the potential to change the approach to public administration and increase its efficiency. We have identified several examples of successful AI implementation in public administration:

- Automation of decision-making actions: AI can help government agencies make more informed decisions using more data. For example, machine learning systems can generate socio-economic data and provide analyses to analyse certain policy decisions.

- Data analytics for forecasting and crisis management: AI can be used to analyse data from a variety of sources, including social media, sensors, and sensors to predict crises such as natural disasters or epidemics. These authorities are prepared for them and make quick and effective decisions.
- Improved interaction with the public: AI can be used to automate the process of collecting and analysing public feedback. For example, using text analytics and natural language processing, systems can analyse citizen feedback on certain projects or policies and make recommendations to government agencies for improvement.
- E-government: AI can be used to create e-government systems that simplify access to public services and ensure efficient processing of documents and applications. For example, chatbot systems can provide citizens with answers to additional questions and help them with request forms. Systems can also be used to automatically assign certain services or authorisations.
- Forecasting and resource management: AI can help governments forecast and manage resources such as budget, energy, and water. AI-based analytical models can calculate optimal solutions for resource allocation and efficient use to meet the needs of society.
- Monitoring and forecasting systems: AI can be used to create a system for monitoring and forecasting social and economic indicators. This allows governments to obtain up-to-date information on the state of various policy areas and adapt their policies accordingly.

These examples show how AI can be successfully implemented in public administration to increase the efficiency of service delivery, inform decision-making, and improve public engagement. However, it is important to ensure that AI is used ethically and appropriately and that transparency and trust in government processes are maintained. AI can be used to recognise patterns and analyse video data to ensure the safety of citizens. For example, video surveillance systems can automatically detect suspicious activity or anomalous behaviour and notify law enforcement. AI can play an important role in analysing data to predict demand for social services. AI can process large amounts of data and identify complex relationships and parents, further establishing cause and effect and making more accurate predictions [25].

One of the main ways AI is used for data analysis is through machine learning. Machine learning models can be created from existing data on the demand for social services and then fed with new data to predict future demand. Such models can develop various factors such as demographics, economic indicators, and social change trends. to make predictions with high accuracy. AI can also be used to analyse social media, where people share their opinions, requests, and needs. By analysing textual data on social media, forums, and other platforms, AI can identify trends and emotional moods of users, which can be useful for predicting requests for social services. In addition, AI can help optimise resource allocation and planning for social services. By using optimisation algorithms, AI can analyse the demands, resources, constraints, and efficiency of resource allocation to meet user needs [10]. The use of AI in data analysis to forecast demand for social services can also include:

- Clustering and segmentation of users: AI can analyse large amounts of data on social service users and group them into classes or segments based on common characteristics. This allows for a better understanding of the diversity of users' needs and the creation of more personalised services.
- Seasonality and trend analysis: AI can identify seasonal changes and trends in demand for social services. For example, it can determine that the demand for a particular social service increases during certain periods of the year or certain events. This allows us to adapt the allocation of resources and plan the development of services by these changes.
- Predicting the response to an incident: AI can analyse data on the demand for social services during crises or emergencies. It can predict which social services may be needed and in which regions. This allows for effective response and resource allocation in emergencies.

AI can use optimisation algorithms to determine the best placement of social services and resources. It can take into account geographical, demographic, and other factors to optimise the location of social service centres. AI can analyse population data, transport accessibility, population density, and other factors to develop the most efficient locations for centres. This can help to ensure equal access to social services and optimise the use of resources. AI can be used to predict the effectiveness of various social services programmes and policies. It can analyse historical data and factors that influence programme success and predict their impact on demand and outcomes. This will help make better decisions about the design and implementation of social programmes. The use of AI in data analysis to predict demand for social services can significantly improve the efficiency and quality of these services. It understands the needs of users, adapts to changes in demand, and allocates resources rationally [26].

In our opinion, the balanced implementation of AI in public administration requires a comprehensive approach and attention to various aspects, including the development of skills and competencies among civil servants. Here are some strategies that can contribute to the successful implementation of AI in public administration. The first is to provide opportunities for civil servants to be

trained in the basics of AI and its implementation in public administration. This may include courses, training, and seminars. Developing specialised programmes for those who will be responsible for developing, implementing and monitoring AI systems in government agencies. Establish expert groups that bring together specialists from different fields, such as law, ethics, technology, and social sciences, to address complex problems and ethical issues.

The involvement of technology manufacturers is important, namely bringing together companies developing AI technologies in partnership to jointly address security, ethics and responsible use. Ethical standards for the use of AI in public institutions should be defined and implemented with transparency, fairness, and privacy in mind. It is important to develop audit and impact assessment procedures to check AI systems for compliance with the standards and identify possible shortcomings. It is also important to maintain an open dialogue with the public on the use of AI in public administration and take their opinions into account. Develop transparency tools so that the public can monitor and understand how AI systems are used in government agencies. Continuous evaluation and improvement of AI systems based on data and user feedback will also be important. These strategies can help create an effective and moral infrastructure for the use of AI in public administration, ensuring a high level of competence and trust in the process.

5. CONCLUSION

Summing up, it should be noted that public administration in the context of modern trends and challenges of social development is faced with the need to adapt to new conditions. AI, which continues to actively develop, has significant potential for the transformation of approaches in the field of public administration. The study shows that the use of AI in public administration can lead to significant benefits. In particular, the technology facilitates data analysis and forecasting, improved citizen service, optimized use of resources, decision support, performance management and monitoring, improved public engagement, crisis forecasting, electronic document management, electronic voting, personalized services, predictive budgeting, fraud and corruption detection, cyber security, service demand forecasting systems, electronic. The use of AI in public administration can significantly improve the efficiency and quality of services by ensuring greater transparency, efficiency and interaction with the public. The use of AI in public administration has undoubted advantages, but it is necessary to understand its potential risks. Ethics, privacy, transparency and automation issues require serious consideration. It is important to ensure transparency and accountability in the use of AI algorithms, especially in situations where they affect important decisions. Threats to data privacy, job losses, the digital divide, and a lack of public trust require careful consideration and cooperation from all stakeholders to ensure the fair and effective implementation of AI in public administration.

AI and jobs are widely used in the development of countries around the world, including the UK and the US, which actively fund development and research in this area. Digital technologies are replacing traditional automation methods, which is important for the competitiveness of countries. The European Union also actively regulates AI to ensure moral and safe development. The creation of the European AI Watch facilitates the coordination and monitoring of these processes at the EU level. This demonstrates the importance of AI adoption for leadership and global influence.

The introduction of AI into public administration requires a careful approach and attention to various aspects. Key strategies for successful AI adoption in public administration include training of civil servants, creation of specialised programmes, participation of technology manufacturers in partnerships, development of ethical standards, audit and impact assessment, open dialogue with the public, and continuous improvement of AI systems. These measures can help create an effective and moral infrastructure for the use of AI in public administration, ensuring a high level of competence and trust in the process. It is also recommended that Ukraine, following the example of international experience, create an interagency commission to study the possibilities of using AI in public administration. This will help automate and improve the efficiency of the system, as well as help fight corruption. A general decentralised or liberal model of digital society development can be chosen depending on the country's needs.





REFERENCES

- [1] O. Bazaluk, O. Yatsenko, O. Zakharchuk, A. Ovcharenko, O. Khrystenko, and V. Nitsenko, "Dynamic development of the global organic food market and opportunities for Ukraine," *Sustainability (Switzerland)*, vol. 12, no. 17, p. 6963, Aug. 2020, doi: 10.3390/SU12176963.
- [2] V. Kovaleva, I. Bukhteeva, O. Y. Kit, and I. V. Nesmelova, "Plant defensins from a structural perspective," *International Journal of Molecular Sciences*, vol. 21, no. 15, pp. 1–23, Jul. 2020, doi: 10.3390/ijms21155307.
- [3] I. Britchenko, T. Romanchenko, and O. Hladkyi, "Potential of sustainable regional development in view of smart specialisation," *Ikonomicheski Izsledvania*, vol. 28, no. 6, pp. 88–109, 2019.




- [4] D. S. Melnyk, O. A. Parfylo, O. V. Butenko, O. V. Tykhonova, and V. O. Zarosylo, "Practice of the member states of the European Union in the field of anti-corruption regulation," *Journal of Financial Crime*, vol. 29, no. 3, pp. 853–863, May 2022, doi: 10.1108/JFC-03-2021-0050.
- [5] O. M. Yaroshenko, N. O. Melnychuk, S. V. Moroz, O. O. Havrylova, and Y. P. Yaryhina, "Features of remote work in Ukraine and the European Union: comparative legal aspect," *Hasanuddin Law Review*, vol. 7, no. 3, pp. 136–149, Dec. 2021, doi: 10.20956/HALREV.V7I3.3218.
- [6] T. Yarovoi and D. Dryha, "Key problems of the current state of information security regulation in the sphere of public administration," *Curr. Issues Mod. Sci.* vol. 9, no. 15, 2023. doi: 10.52058/2786-6300-2023-9(15)-313-321
- [7] O.V. Denisyuk and A.V. Bokshorn, "Artificial intelligence: format in the functioning of public authorities," in *Mater. X Int. Sci. Pract. Internet Conf. "State and prospects for the development of administrative law of Ukraine"*, 2023, pp. 70-73. <https://univd.edu.ua/science-issue/issue/3056>.
- [8] S. Tsiapa, "Review of foreign legislative initiatives for the strategic use of artificial intelligence technologies in modern conditions," *Inf. Law*. vol. 2, no. 37, pp. 51-59, 2021, doi: 10.37750/2616-6798.2021.2(37).238336
- [9] V. Fostolovych, (2022). "Artificial intelligence in modern business: potential, current trends and prospects of integration in different spheres of economic activity and human life activity," *Efekt. Ekon.* Vol. 7, 2022, doi: 10.32702/2307-2105.2022.7.4
- [10] M.F. Kocharyan, "Trends in the use of digital technologies in public administration," *Mod. Sci. J.* vol. 1, no. 1, pp. 91-96, 2023. doi: 10.36994/2786-9008-2023-1-12.
- [11] I. Butyrska, N. Ivanyuta, O. Turkot, B. Derevyanko, and L. Nikolenko, "Mediation as an alternative form of protection of shareholders' rights in property relations," *International Journal of Public Law and Policy*, vol. 8, no. 3/4, p. 1, 2022, doi: 10.1504/ijplap.2022.10045670.
- [12] Order of the Cabinet of Ministers of Ukraine, "On the approval of the concept of the development of artificial intelligence in Ukraine," *Verkhovna Rada of Ukraine: Legislation of Ukraine*, 2020. <https://zakon.rada.gov.ua/laws/show/1556-2020-p?lang=en#Text>.
- [13] "Scientific approaches to the problem of reforming public administration in Ukraine in conditions of digitalization."
- [14] B. W. Wirtz, J. C. Weyerer, and C. Geyer, "Artificial intelligence and the public sector-applications and challenges," *International Journal of Public Administration*, vol. 42, no. 7, pp. 596–615, May 2019, doi: 10.1080/01900692.2018.1498103.
- [15] B. W. Wirtz, J. C. Weyerer, and B. J. Sturm, "The dark sides of artificial intelligence: an integrated AI governance framework for public administration," *International Journal of Public Administration*, vol. 43, no. 9, pp. 818–829, Jul. 2020, doi: 10.1080/01900692.2020.1749851.
- [16] P. Henman, "Improving public services using artificial intelligence: possibilities, pitfalls, governance," *Asia Pacific Journal of Public Administration*, vol. 42, no. 4, pp. 209–221, Oct. 2020, doi: 10.1080/23276665.2020.1816188.
- [17] B. W. Wirtz and W. M. Müller, "An integrated artificial intelligence framework for public management," *Public Management Review*, vol. 21, no. 7, pp. 1076–1100, Jul. 2019, doi: 10.1080/14719037.2018.1549268.
- [18] L. P. Trebyk and M.A.Zubko, "Use of artificial intelligence in the public sector, 2022," in *1th International scientific and practical conference "Current issues of science and integrated technologies"*, 2023.
- [19] J. B. Bullock, "Artificial intelligence, discretion, and bureaucracy," *American Review of Public Administration*, vol. 49, no. 7, pp. 751–761, Oct. 2019, doi: 10.1177/0275074019856123.
- [20] T. S. Yarovoi, "Opportunities and risks of the use of artificial intelligence in public administration," *Econ. Syn.* vol. 2, pp. 36-47, 2023, doi: 10.53920/ES-2023-2-3.
- [21] K. Serhiy, N. Novichenko and O. Bardakh, "Artificial intelligence in municipal administration: Vectors of development," *Asp. public adm.* vol. 9, no. 4, pp. 85-94, 2021, doi: 10.15421/152140.
- [22] I.M. Moskalets, "The role of innovations in increasing the efficiency of public administration," *Econ. Syn.* vol. 2, pp. 89-104, 2023, doi: 10.53920/ES-2023-2-7.
- [23] A.V. Svintsytskiy, "The use of artificial intelligence in the field of management: advantages and disadvantages," In *Mater. all-Ukrainian Sci. Pedagog. Adv. Training "Technologies of virtuous use of artificial Intelligence in Education and Science"*, 2023, pp. 206-209. [Online]. Available https://cuesc.org.ua/images/informlist/Maket_advanced_training_PSAU.pdf.
- [24] M. Busuioac, "Accountable artificial intelligence: holding algorithms to account," *Public Administration Review*, vol. 81, no. 5, pp. 825–836, Sep. 2021, doi: 10.1111/puar.13293.
- [25] O.A. Zadyhaylo, "Administrative and legal regulation of artificial intelligence in Ukraine: current state and tendencies of development," *Collect. Sci. Works of KhNPU named after GS Skovoroda "Law"*. Vol. 37, pp. 9-14, 2023, doi: 10.34142/23121661.2023.37.01.
- [26] J. I. Criado and J. R. Gil-Garcia, "Creating public value through smart technologies and strategies," *International Journal of Public Sector Management*, vol. 32, no. 5, pp. 438–450, Jul. 2019, doi: 10.1108/IJPSM-07-2019-0178.

BIOGRAPHIES OF AUTHORS






Kateryna Shvets     is doctor of public administration, vice-rector, associate professor of the Department of Public Administration, Interregional Academy of Personnel Management, Kyiv, Ukraine. Her research interests include civil law, public law, and public administration. She can be contacted at email: kateryna_shvets@sci-academy.cc.






Andrii Onyshchenko    is doctor of economics, professor of the Department of Information Systems and Technologies, Faculty of Information Technologies, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine. His research interests include artificial intelligence, sustainable development, and modelling. He can be contacted at email: andriy.onyshchenko@ukr.net.






Volodymyr Kudin    is doctor of engineering, professor of the Department of Intellectual Technologies, Faculty of Information Technologies, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine. His research interests include decision-making in conditions of uncertainty, risk and fuzziness, methods of calculations, methods of analysis, and optimization. He can be contacted at email: vol.kudin@gmail.com.



Nataliia Korchak    is doctor of law, associate professor, head of the Department of Public Policy, Educational and Scientific Institute of Public Administration and Civil Service, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine. She was awarded with the honorary title of “Honored Lawyer of Ukraine”. Her research interests include international law, public law, public administration, and public policy. She can be contacted at email: nkorchak15@gmail.com.



Olena Ivani    is Ph.D. in education, associate professor of the Department of Law and Public Administration, Sumy State Pedagogical University named after A.S. Makarenko, Sumy, Ukraine. Her research interests include Human rights, European Union law, and European Union institutions. She can be contacted at email: ivanii.elena@gmail.com.