



## Human agency vs artificial intelligence and decentralised platforms: Is there a challenge for the public administration system in Ukraine and worldwide?

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■ **Abstract.** This article explores the impact of artificial intelligence (AI) and platform technologies on the concept of human agency in the context of the transformation of the public administration system. The aim was to analyse the risks of delegating decision-making to algorithms and to search for ways to preserve human subjectivity in the new technological conditions. The foundation was the idea of “responsible research and innovation” and the concept of “technological mediation”. The use of AI in public administration creates risks of “algorithmic governance” and loss of human control. The opacity of AI systems calls into question the principles of democratic accountability. In response, regulatory and ethical principles for the use of AI are being developed, but doubts remain about the system’s readiness to operate under conditions of opacity. The article analysed the impact of AI and platforms on key dimensions of human agency. It explored the risks of narrowing the space for individual initiative and self-regulation due to passive reliance on the advice of AI assistants. At the same time, the potential of AI in structuring human self-reflection by identifying unconscious emotional and behavioural patterns was noted. These effects were illustrated using the hypothetical integration of AI capabilities into the work of the Ukrainian state-owned platform “Diia” under the “government as a platform” model. The analysis demonstrated that while personalised AI assistants may expand civic engagement by easing administrative burdens, they can also confine citizens’ choices by actively “nudging” them toward specific behaviours. The danger of technocratic distortion of the democratic process was noted in the case of large-scale delegation of aspects of political participation to algorithmic systems. Finally, the article concluded that AI development, combined with decentralised platform solutions, may profoundly affect multiple dimensions of human agency. Whether these changes expand or limit personal autonomy largely depends on the values and objectives that developers embed in the system’s architecture. An orientation towards the public good and the development of human potential can make such solutions emancipatory technologies. The practical value of this study lies in the development of recommendations for adapting the public governance system to the challenges posed by the implementation of artificial intelligence and platform technologies, with a focus on preserving human agency, democratic accountability, and ethical decision-making

■ **Keywords:** public administration; public policy; artificial intelligence; platforms; human agency; digital ethics; digital humanism; human-centeredness; self-regulation; personalisation

### ■ Introduction

The rapid advancement of artificial intelligence (AI) technologies and platform-based organisational models challenges traditional perspectives on human agency within public administration systems. Human agency – the capacity

to make independent decisions, exercise personal choice, act purposefully, and influence one’s environment – constitutes a fundamental prerequisite for democratic governance and the effective functioning of public institutions

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(Kissinger *et al.*, 2024). It highlights a crucial aspect of human existence. However, in the dynamic context of the 2020s, as AI algorithms increasingly assume decision-making functions and platforms establish new decentralised coordination structures based on fractal principles (self-similarity), the very concept of human agency comes into question. AI and platforms do not merely automate specific processes – they potentially transform the very nature of administrative activity, replacing human subjectivity with algorithmic objectivity and the collective intelligence of networks. These global technological and social shifts challenge established principles of democratic governance, bureaucratic organisation, and public policy, compelling us to reconsider humanity's place in the management system and seek new models for interaction between technology and human subjectivity.

The relevance of researching this topic stems not only from the scale and pace of technological change but also from the fundamental questions it raises for public administration theory and practice. The delegation of decision-making to algorithms, automation of administrative processes, and use of predictive analytics in policy-making – all these phenomena challenge traditional notions of human agency in governance and necessitate the development of new conceptual models and practical mechanisms to preserve human agency in a technologised world. This issue extends far beyond purely technical or managerial aspects, touching upon fundamental philosophical, ethical, and political questions about the nature of human freedom, autonomy, and responsibility.

Ukraine adds a unique context to this issue, as it faces the necessity of rapid public administration modernisation and advanced technology implementation, including AI (which is already actively used by the military and certain ministries), in the context of anticipated peace and post-war recovery. On one hand, the use of AI and platform solutions could become a powerful tool and even a “wild card” for post-war economic reconstruction and socio-political relationships both within the country and with partners and citizens who have emigrated abroad. On the other hand, implementing these technologies without proper consideration of their impact on human agency might deepen the “digital divide”, dramatically strengthen technocratic tendencies (which most digital solutions known to the author guarantee) in governance, and alienate citizens from decision-making processes. Therefore, finding a balance between technological innovation and preserving human agency becomes critical. This requires not only technical or regulatory solutions but also deep reflection on the philosophical foundations and value orientations upon which a “humanistic” model of governance should be built in the AI era.

The scientific community actively investigates the impact of artificial intelligence (AI) and platform models on traditional public administration systems. Analysis of key publications in this field reveals several main trends that challenge established paradigms of governance and

administration. Firstly, there is the transformation of decision-making's very nature under the influence of algorithmic systems: AI's role in shaping public policy, resource allocation, and citizen service delivery is increasingly noted. Delegating decisions to algorithms questions traditional models of human agency and accountability in the public sector. Secondly, there is the change in coordination and cooperation mechanisms between various actors under the influence of platform technologies. The platformisation of public administration creates new decentralised interaction structures that challenge hierarchical and bureaucratic organisational models. Thirdly, there is the intensification of ethical dilemmas related to preserving human autonomy and control in conditions of AI system dominance, with the general consensus being that there is an evident need to develop new regulatory and management mechanisms to ensure AI accountability and transparency in the public sphere.

Growing yet still unfocused attention in literature is being paid to the conceptual rethinking of human agency itself in the context of AI development, either with or without modern digital platforms. On one hand, algorithmic systems can significantly expand human capabilities, enabling more effective and well-founded decision-making. On the other hand (Rahwan *et al.*, 2019), delegating key functions to AI risks humans losing control over their own lives and societal processes. Works published after 2021 show a shift from techno-optimistic views of AI as a tool for enhancing human capabilities towards a more critical analysis of the ethical and philosophical consequences of ‘blurring’ human agency in the algorithmic era (Xu *et al.*, 2024; Carapinha *et al.*, 2024). Some scholars, particularly M. van Rijmenam & D. Logue (2020) and J. Shahin (2024), emphasised new concepts of agency with the growing role of non-human actors and the hybrid nature of modern management systems. The emphasis is also placed on finding a balance between AI solution efficiency and maintaining human autonomy and control.

Throughout the 2020s, discourse has also actively developed regarding the specific impact of AI on public administration across different countries and regions worldwide. Comparative studies demonstrate substantial differences in approaches to AI implementation in the public sector, driven by varying political, legal, and sociocultural contexts. Whilst developed countries actively invest in developing national AI development strategies and establish specialised regulatory bodies, developing countries face additional challenges related to the digital divide, resource scarcity, and weak institutional capacity. The works of J. Adamson *et al.* (2020) and M. de la Roche (2024) emphasise the necessity of considering local specifics when developing AI implementation policies in public administration, as well as the importance of international cooperation in addressing global challenges. Academic literature also addresses the ethical aspects of AI usage within different legal and value systems, particularly the need to develop global ethical principles and

standards that would ensure responsible and inclusive implementation of AI technologies in the public sphere, as highlighted in the research of L. Floridi *et al.* (2018) and A. Jobin *et al.* (2019).

Analysis of the situation in Ukraine shows that the issue of AI's impact on public administration is only beginning to enter the agenda of Ukrainian researchers. The 2020s have seen the emergence of several publications attempting to conceptually understand AI challenges for the state administration system in Ukraine, and here, perhaps, the trend is that almost everywhere the potential of AI is noted for greater efficiency and transparency of governance, especially under conditions of limited resources and the need for rapid reforms at the local level, particularly evident in the work of S. Kvitka *et al.* (2021). However, there are also numerous warnings about the risks of uncritical AI implementation without proper consideration of its impact on human agency and autonomy. Yet, despite numerous and genuinely interesting views on aspects of AI manifestations on power and public policy, overall, the issue of preserving human agency in the context of AI implementation in Ukraine remains understudied and requires further thorough examination. And this is normal, given the likely significant prospects and risks.

Thus, there has been an almost radical progress in the scientific understanding of AI's impact on public administration and human agency. One can be certain of the increasingly fundamental nature of transformations that AI and platform technologies bring to traditional models of governance and administration, and these changes concern the very nature of decision-making, coordination and cooperation mechanisms, as well as ethical foundations for preserving human autonomy in a technologised world, and even their cursory comparative analysis shows significant differences in approaches to AI implementation in the public sector across different countries, determined by the specifics of local contexts. Simultaneously, there is a tendency towards forming a global consensus regarding the need for responsible and inclusive AI development based on shared ethical principles and standards, and against this background, Ukraine is only beginning the conceptual understanding of AI challenges for the public administration system and requires further thorough research in this direction. This issue will gain particular relevance in the context of post-war recovery and the search for balance between technological innovations and preserving human agency in the public sphere.

The aim of the article was to conceptually and critically evaluate the impact of artificial intelligence (AI) and platform technologies on human agency in the context of public administration system transformation. The research aims to explain the fundamental challenges that AI development together with platforms creates for traditional models of public governance and bureaucracy, as well as to search for possible ways of preserving human agency under new technological conditions. To achieve this aim, the following research objectives were defined:

1) analyse global trends in the impact of AI and platform models on the concept of human agency, reveal key ethical dilemmas and risks associated with delegating decision-making to algorithmic systems;

2) investigate the challenges that AI technology implementation creates for the public administration system, particularly "algorithmic governance", loss of control over decision-making processes, and readiness to work under conditions of AI systems' opacity;

3) critically evaluate the specifics of the combined use of platforms and AI in the modern public sector, using for this purpose the logical "prism" of 4 key components of human agency: intentionality, predictability, self-regulation, self-reflection (self-awareness) and project this specificity onto a conditional example of application in the Ukrainian platform "Diia".

## ■ Materials and Methods

The research is based on an interdisciplinary approach that combines conceptual frameworks and analytical tools from various fields of knowledge: general theory of public administration, political science, philosophy of technology, and artificial intelligence ethics. Such methodological pluralism is necessitated by the complex nature of the studied problem, which crosses traditional disciplinary boundaries and requires multidimensional analysis. The methodology is founded on the European idea of "responsible research and innovation" (RRI), which emphasises the need to consider ethical, social, and legal aspects in the development and implementation of new technologies (GREAT, 2022), and in the context of this research, RRI serves as a normative guideline.

The theoretical and methodological basis for analysing AI's impact on human agency was the concept of "technological mediation", developed within the philosophy of technology. This concept views technologies not merely as neutral tools but as active mediators that transform human perception of the world and structure their actions and decisions. In this perspective, AI appears not only as a means of improving management efficiency but also as a factor in rethinking the very essence of human agency in the public sphere.

The empirical foundation of the research was secondary data analysis from open sources: scientific publications, analytical reports, expert discussions, etc. Special attention was paid to studying best practices and lessons from AI implementation in the public sector across different countries, based on published summaries from the OECD.

An important methodological principle was the orientation towards practical relevance and implementation of research results. Therefore, attention was paid to developing recommendations for improving public policy in the AI sphere – both at the level of normative regulation and regarding institutional mechanisms and stakeholder engagement tools. Special emphasis was placed on a human-centric approach to AI implementation, which centres on the value of human dignity, autonomy, and participation.

The logic of material presentation reflects movement from global to local, from conceptual to practical. The article begins with outlining the general context of AI development and its impact on various spheres of social life. Then, the concept of human agency is introduced, and the fundamental challenges that AI and platform models create for traditional understanding of agency and autonomy are revealed.

The next section is dedicated to analysing specific problems that AI implementation generates for the public administration system – both at the decision-making level and regarding regulatory capacity and ethical dilemmas. Then the focus shifts to the Ukrainian context, where peculiarities and risks of accelerated public sector digitalisation under conditions of post-war recovery are examined.

The article concludes with the development of practical recommendations for public policy in the AI sphere. These recommendations are structured around three key directions: normative regulation focusing on human rights and ethics, mechanisms of public control and participation, and development of digital competencies for public servants. Such practical output of the research is intended to ensure its real impact on improving public governance practice. Overall, the methodology and logic of presentation enabled an attempt at comprehensive and multilevel analysis of the human agency problem under conditions of AI development and to propose well-founded solutions for public policy.

## ■ Results

### Human agency in the era of intelligent machines: Global trends and challenges

As convincingly demonstrated by experts from the European INATBA (de la Roche, 2024), combinations of artificial intelligence (AI) and blockchain solutions, particularly blockchain platforms (such as the Ukrainian-origin Bitbon System), pose an unprecedented challenge to traditional understanding of human agency and autonomy. In an era where algorithms can make decisions faster and more accurately than humans, and platforms create new decentralised forms of coordination and cooperation, the very concept of human agency – the natural ability of humans to be a source of meanings, purposes, and actions – comes into question.

Historically, agency was considered an inherent property of human consciousness, rooted in the capacity for rational thinking, free choice, and moral responsibility (Gunkel, 2020). The classical philosophical tradition, from R. Descartes to I. Kant, equated subjectivity with the autonomy of reason, capable of rising above the world of natural causality and acting based on independently formulated principles (Habermas & McCarthy, 1984). In social sciences, agency was predominantly viewed as an attribute of an individual or collective subject, realised through purposeful activity and interaction with others within certain structural constraints. However, the development of AI and platform technologies challenges these basic assumptions.

Firstly, algorithmic systems demonstrate a capacity for autonomous behaviour that cannot be reduced to simply executing human-programmed rules. Modern machine learning models based on neural networks can independently identify complex patterns in data, generate new knowledge, and make decisions beyond human comprehension (Burrell, 2016). In particular, deep learning algorithms have already surpassed humans in image recognition, medical data analysis, user behaviour prediction, and more (Topol, 2019). This raises questions about the boundaries of human agency and the criteria for its attribution in a world where machines demonstrate increasing autonomy.

Secondly, platform-based models of activity organisation blur the boundaries between individual and collective agency. Digital platforms such as Facebook, Uber, or Airbnb function as infrastructures that enable and structure interaction between large numbers of users. In this context, agency is distributed between the platform, which sets the rules of the game, and individuals, whose actions are mediated and guided by algorithms. Hybrid forms of agency emerge, where human meaningful direction and conscious intention intertwine with the operational logic of technological systems (Willson, 2016). An example is the phenomenon of “crowd work”, where complex tasks are broken down into simple microtasks performed by many unconnected workers through online platforms. While each performer maintains some autonomy in task selection, their actions are coordinated by algorithms for task distribution and quality control.

The delegation of an ever-widening range of decisions to AI systems generates a whole spectrum of ethical dilemmas. Can an algorithm be considered a subject of moral responsibility if its actions cause harm? How can transparency and accountability of AI decisions be ensured if even developers cannot always explain their operational logic? How can discrimination and biases embedded in algorithms through historical data usage be avoided? A telling example is the use of AI systems in jurisprudence for assessing recidivism risks. Such systems can reproduce racial biases embedded in previous sentencing data and discriminate against certain groups of offenders. This raises a fundamental question about the limits of delegating decision-making to AI in sensitive areas where fundamental human rights are affected.

A separate complex of ethical problems relates to the use of AI technologies in public administration. Many countries are already implementing AI systems for big data analysis, policy effectiveness evaluation, resource allocation, or even administrative decision-making (Veale *et al.*, 2018; de la Roche, 2024). This creates risks of “algorithmic governance”, where decisions are made based on intelligent computations without proper public oversight and consideration of value aspects. Moreover, AI use can amplify information asymmetry between government and citizens, as the latter are often deprived of the ability to understand the logic of automated systems that directly affect their lives. The question of ensuring the right to appeal decisions made with AI participation becomes acute, as does establishing mechanisms for human control over automated processes.

The impact of AI on human agency has various dimensions and manifests in many spheres of social life. One key problem is the transformation of decision-making processes. On one hand, AI systems can process vast amounts of information and propose solutions that consider numerous factors and constraints inaccessible to the human mind. This can improve decision quality in many areas, from medical diagnostics to transport system management. However, on the other hand, there is a risk of excessive dependence on machine recommendations and loss of critical thinking capacity. For instance, experiments described in L. Floridi's work (2014) show that people tend to follow AI advice even in cases where it contradicts common sense. Additionally, the question arises about the human right to "disconnect", to refuse interaction with AI systems if they do not align with one's values and beliefs.

Another important aspect is the collision between AI autonomy and the human right to privacy. The development of machine learning algorithms requires collecting vast amounts of personal data for training models. Social networks, search engines, mobile applications, and the Internet of Things generate unprecedented volumes of information about preferences, habits, movements, and social connections. While this enables service personalisation and improves user experience, it also creates risks of involuntary personal information disclosure, loss of data control, and its use for manipulation or discrimination. This raises the issue of how far personal data can be used for AI training and whether individuals still maintain the right to informational self-determination in the era of big data.

Finally, AI development challenges human cognitive autonomy, the ability to form one's own worldview and critically perceive information. Recommendation system

algorithms and personalised news feeds help navigate the ocean of digital content but also create "information bubbles" where users only see content matching their previous preferences. This can lead to opinion polarisation, spread of fake news and conspiracy theories, and weakening of social cohesion (Vosoughi *et al.*, 2018). AI systems for generating text, voice, and images, such as GPT-o3-mini, Sora and xAI, can create content that is difficult to distinguish from human-created content, which exacerbates the problem of information verification. In the long term, AI development may lead to cognitive atrophy, loss of basic skills in memorisation, attention concentration, and critical thinking necessary for personal autonomy.

In summary, the development of AI and platform technologies generates a series of fundamental challenges for human agency and autonomy (Table 1). These challenges manifest at various levels: from individual cognitive abilities to collective forms of decision-making and social interaction. Delegating an increasingly wider range of functions to AI systems transforms the very nature of human agency, blurring the boundaries between individual free will and the determinism of technological processes. Simultaneously, these transformations also open new possibilities for expanding human capabilities, improving decision quality, personalising services, etc. The key task becomes finding a balance between AI advantages and the risks of its uncontrolled development, as well as creating control and accountability mechanisms to ensure AI systems' compatibility with values of human dignity and autonomy. This requires active interdisciplinary cooperation among technologists, philosophers, lawyers, and civil society representatives to develop new ethical principles and regulatory frameworks that meet the challenges of the digital era.

**Table 1.** AI and platform challenges for human agency

Agency dimension	Impact of AI and platforms	Key risks	Ethical dilemmas
Individual decision-making	Delegation of functions to AI, loss of critical thinking skills	Excessive dependence on AI, information bubbles, cognitive atrophy	Right to disconnect, free will vs efficiency
Data management and privacy	Collection of personal data for machine learning	Loss of data control, risks of manipulation and discrimination	Limits of data use, right to be forgotten
Collective interaction and coordination	Hybridisation of human and machine agency on platforms	Diffusion of responsibility, power asymmetry, opacity	Criteria for moral subjectivity, accountability mechanisms
Socially significant decision-making	Use of AI in public administration	Algorithmic discrimination, undemocratic nature, technocracy	Limits of automation, right of appeal, human control

**Source:** author's development

Within the current research, a hypothetical situation was examined that demonstrated how AI development combined with personal data accumulation could affect public policy and governance. According to the hypothesis, local authorities decided to implement an AI system to optimise the delivery of social services. Its primary goal is to identify the most vulnerable groups and personalise assistance based on big data analysis. To achieve this, the AI aggregates information from a range of sources, including

medical records, tax filings, social media activities, and telecom data. Initially, this appears to be an effective solution: service quality improves, and resources are used more precisely. However, problems gradually emerge.

Firstly, many people feel uncomfortable with AI "digging" into their private lives, making public and non-public conclusions based on others' sensitive information. Yet refusing to provide one's data to the system means risking loss of access to important services. Secondly, AI can

embed biases contained in historical data and discriminate against certain groups. For example, it might underestimate the needs of ethnic minorities if their issues were underrepresented in the training data. Thirdly, the centralisation of highly confidential data in one system creates significant risks to privacy and security, and data breaches or insider abuse could have devastating consequences for citizens' autonomy. Finally, people may simply have no choice in how to interact with this system – alternatives are absent, and avoiding “optimised” services becomes increasingly difficult. Thus, even good intentions to improve public services through AI can turn into unjustified interference with citizens' privacy and restriction of their freedom of choice. If such systems become ubiquitous, there is a risk of ending up in a digital “panopticon” situation, where every human step is controlled and evaluated by invisible algorithms without the possibility of objection or escape. Therefore, AI implementation in the public sphere requires a very balanced approach and reliable safeguards to protect human agency.

#### **“Black Boxes” for public policy: Challenges of AI systems' opacity for democratic control**

Previous analysis showed that the development of AI and platform technologies poses fundamental challenges to traditional concepts of human agency and privacy. These challenges are particularly acute in public administration, where AI implementation can have far-reaching consequences for state-citizen relations, management decision quality, and political institutions' legitimacy. AI implementation in the public sector opens unprecedented opportunities for process optimisation, service personalisation, and informed decision-making. From using chatbots for citizen interaction to predictive analytics for identifying potential problems – AI promises to make public administration more efficient, proactive, and people-oriented (Kuziemski & Misuraca, 2020). However, these advantages are accompanied by serious administrative and regulatory challenges.

Firstly, AI implementation requires radical transformation of the very culture and decision-making processes in public organisations. Traditional bureaucratic models based on hierarchy and procedure adherence are poorly adapted to working with intelligent systems that require flexibility, experimentation, and inter-agency cooperation. Public managers must learn not just to “manage AI” but to “manage together with AI”, viewing it as a full partner in the policy-making process (Scholta *et al.*, 2019). This requires not only new skills and competencies but also a fundamental rethinking of the human role in the administrative machine.

Secondly, using AI for management decisions creates risks of “algorithmic governance” – situations where critically important decisions are de facto delegated to opaque and potentially biased systems. As practice shows, AI models can reproduce and amplify existing social biases and discrimination. For example, risk assessment systems used in US criminal justice have repeatedly demonstrated bias

against African Americans (Angwin *et al.*, 2016). Similarly, social assistance distribution algorithms may discriminate against vulnerable groups if the historical data they learn from doesn't account for their specific needs. Without proper human control and accountability mechanisms, such cases of algorithmic discrimination can seriously undermine trust in public institutions.

Thirdly, AI use can lead to loss of control over decision-making processes by public administrators and the public. Many modern AI systems, especially those based on deep learning, operate as “black boxes” – their internal logic is not understood even by developers, let alone politicians or citizens (Pasquale, 2015). On one hand, this relates to the very nature of complex algorithms that identify non-obvious patterns in data. On the other hand, commercial companies developing AI for the public sector often protect their models as intellectual property, limiting possibilities for external audit. As a result, a situation may arise where the system makes decisions that have enormous impact on people's lives, but no one can explain why or how these decisions were made. This questions fundamental democratic principles of transparency and government accountability.

In response to these challenges, many countries are developing special regulatory frameworks and ethical principles for AI use in public administration. They include such key requirements as algorithm transparency and explainability, human control over decision-making, non-discrimination, accountability, and AI system auditing (OECD, 2021). For example, in the EU in 2021, the AI Act was proposed, which establishes differentiated requirements for AI systems depending on the level of risk they pose to human rights and societal values. High-risk systems, which include many cases of AI in the public sector, are subject to particularly strict requirements regarding transparency, data quality control, human oversight, and registration in a special EU database (Proposal for a Regulation of the European Parliament..., 2021).

Despite these efforts, the public administration system's readiness to work under conditions of “black boxes” and AI opacity raises serious doubts. According to research (OECD, 2019) involving over 50 countries, the main obstacles to AI implementation in the public sector are lack of experience and AI skills among public servants, lack of clarity regarding ethical principles for AI use, and difficulty integrating AI systems into existing IT infrastructures and processes. And many countries still lack special strategies for AI development in public administration, haven't defined standards for machine learning data collection and quality, and haven't created specialised bodies for oversight and control of AI use in the public sector. Special attention is needed for the asymmetry problem between the public sector and large technology companies, which often act as AI solution providers for the government. Having incomparably more financial, technological, and human resources, these companies can de facto impose their conditions, standards, and values on authorities (Table 2).

**Table 2. Impact of AI development on public administration and public policy in Ukraine and Europe: Current state and near future forecast**

Dimension	Current state	Forecast for near mid-term	Key challenges and recommendations
Decision-making transformation	Initial experiments with AI implementation in specific areas (e.g., social benefits distribution, data analysis). Lack of strategic vision and effort coordination.	AI will become an integral part of policy-making at all levels. Most routine decisions will be automated. AI's role in strategic planning and forecasting will increase.	Ensure greater transparency and accountability of AI systems. Develop digital competencies of managers. Establish mechanisms for human control over AI. Develop ethical principles for AI use in the public sphere.
State-citizen interaction	Traditional communication channels with e-governance elements predominate. AI is used fragmentarily (e.g., chatbots).	AI will become the main interface for citizen-state interaction. Personalised digital assistants will accompany individuals in all interactions with public services.	Ensure greater inclusivity and accessibility of AI services. Protect privacy and security of personal data. Develop citizens' digital literacy. Implement participatory mechanisms for AI solution co-creation.
Public services transformation	Most services are provided through a "single window" principle. Individual experiments with proactive service delivery based on predictive analytics.	Development of "invisible government": most services will be provided automatically based on AI systems' analysis of citizens' needs.	Ensure fairness and non-discrimination in AI services. Implement mechanisms for possible damage compensation. Maintain possibility of receiving services in "analog" mode.
Algorithmic governance	AI is used in specific areas (e.g., resource allocation, unemployment profiling, crime prevention). Lack of transparency and accountability in algorithmic systems.	AI will take over most management functions. Hybrid forms of governance will emerge where human agency is closely intertwined with AI. Risks of algorithmic discrimination and opacity will increase.	Develop regulatory frameworks for algorithmic systems control. Implement AI audit and impact assessment mechanisms. Ensure transparency and explainability of AI decisions. Guarantee the right to appeal AI decisions.
Democratic institutions transformation	AI is mainly used for electoral data and political sentiment analysis. First cases of AI use for disinformation detection.	AI will become an integral part of the democratic process: from aggregating citizens' interests to ensuring election transparency. Risks of public opinion manipulation and undermining trust in democratic institutions using AI (deep fakes, etc.) will increase.	Develop digital infrastructure for democratic participation (e-democracy). Counter AI use for spreading disinformation and propaganda. Support quality journalism and media literacy. Research new models of democracy in the AI era (e.g., algorithmic democracy).
Political power transformation	Narrowing autonomy of national governments due to growing influence of transnational digital platforms and AI systems. Emergence of first non-state AI agents (e.g., DAOs).	Emergence of hybrid forms of governance where AI algorithms perform functions of legislative, executive, and judicial branches. Blurring of state sovereignty concept. Shift of power centres from national governments to supranational AI structures and digital corporations.	Rethink concepts of sovereignty and power legitimacy in the AI era. Develop international cooperation and global AI regulation. Implement mechanisms for democratic control over AI. Experiment with new management models (network, holacracy, etc.).
Nature of wars and conflicts change	AI is mainly used for intelligence gathering, threat analysis, and unmanned systems control. First cases of autonomous weapons under AI control (kamikaze drones).	Emergence of new generation wars where most functions are performed by autonomous AI systems (combat robots, drone swarms, etc.). States losing monopoly on violence. Shift of conflicts to digital space (cyber wars). Emergence of asymmetric forms of violence from non-state actors.	Ensure international control over military AI applications. Implement mechanisms for preventing AI conflict escalation. Research new forms of deterrence and de-escalation in the era of autonomous weapons systems. Accelerate multilateral dialogue on banning autonomous weapons.
International relations transformation	AI is mainly used for data analysis and geopolitical trend forecasting. Lack of transparency in AI application in international relations.	AI will become the main factor of geopolitical power and influence. Interstate alliances and unions around AI technologies will dominate. Technological confrontation will intensify with risks of internet segmentation and AI systems balkanisation.	Form inclusive global institutions for AI development governance. Develop mechanisms for global AI audit and certification. Strengthen the role of UN and other international organisations with emphasis on AI development security and ethics. Establish transatlantic cooperation in AI sphere.

**Source:** author's development based on B.W. Wirtz et al. (2018), M. Kuziemski & G. Misuraca (2020), A. Barrinha & G. Christou (2022), H. Kissinger et al. (2023); F.G. Blancato & M. Carr (2024)

On one hand, Table 2 serves as a somewhat simplified tool for better understanding the impact of artificial intelligence development on public administration. Methodologically, it is structured around 8 key dimensions that encompass various aspects of AI and public sphere interaction: from the transformation of decision-making processes to changes in the nature of political power and international relations. This approach clarifies how these issues evolve over time, helps

gauge the magnitude of upcoming changes, and pinpoints key policy priorities. However, it is crucial to understand that AI development, especially in combination with blockchain platforms, is not merely a powerful technological trend but a fundamental factor transforming the very essence of public administration and society, much like the internet or steam engine once were. Why? Because AI implementation will have far-reaching and even difficult-to-predict consequences

for all key state functions: from providing services to citizens to ensuring security and sovereignty, and in this process, AI creates both new opportunities (for example, for service personalisation and meeting citizen needs) and new risks (particularly regarding algorithmic discrimination, decision-making opacity, undermining of democratic institutions, etc.).

From another, more conceptual perspective, AI implementation in the public administration system challenges the very idea of citizenship and democratic participation (Kud, 2021; Dunayev *et al.*, 2023a). Traditionally, public administration is based on the concept of representative democracy, and despite its shortcomings, this model still presupposes fundamental government accountability and citizens' ability to influence political decisions through electoral mechanisms. However, with AI development (currently without major blockchain platform involvement: they operate differently), power may increasingly shift from elected representatives to algorithms and intelligent systems, and this questions the very idea of popular sovereignty, as algorithms lack democratic legitimacy, and their operational logic is often opaque even to developers, let alone ordinary citizens. In essence, society faces the threat of "sovereignty privatisation" and a kind of "democracy distortion", but through a new technological (rather than representative) method.

Furthermore, conceptually, AI implementation transforms the very nature of the political. If traditionally politics is viewed as a sphere of reconciling social interests through discussion and seeking compromises, then AI logic is based on optimisation, guided by principles of efficiency. These reflections should either compel people to accelerate their "technologisation" or force them to contemplate "why go this way, and how to proceed further?" and pause slightly.

### **How does the combined use of AI and digital platforms affect different dimensions of human agency?**

The main question of this article: how does the combined use of AI and digital platforms affect different dimensions of human agency? To examine this question systematically, one must trace how these technologies transform each key component of agency: intentionality, predictability, self-regulation, and self-reflection. For this analysis, another unique and little-known "variable" was added – the idea of neuro-symbolic artificial intelligence. As of December 2024, this was the most advanced and "human-centric" AI model among all conceivable ones. The absolute uniqueness (and perhaps advantage) of this AI model was its emphasis on "human-in-the-loop" systems, allowing people to interact with AI and better understand (compared to other models) the decision-making process. Such AI was not publicly available at that time, but at least two American institutes, "IBM Research" (IBM Neuro-Symbolic AI) and "Centaur" (Centaur AI Institute, 2024), were very actively working on this in 2024.

Neuro-symbolic AI (NS AI) is a hybrid approach that combines the strengths of neural networks (ability to learn from large volumes of unstructured data) and classical

symbolic systems (capability for logical inference and causal modelling). Through this combination, it can potentially provide more human-understandable explanations, more effectively transfer knowledge between domains, and work with less training data. This makes neuro-symbolic AI more "human-centric" than purely neural network models, which are already widespread globally. It's particularly important to note a special "disclaimer": the author of this article is not an explicit or hidden agent or advocate of this particular AI model or the aforementioned American developers. This model is presented exclusively for scientific and educational purposes, to show a new example of AI manifestation, guided solely by the technical characteristics and operating principles listed above for this AI model.

This research attempts to model the consequences of implementing such systems based on digital platforms, which may affect individual dimensions of human agency, particularly intentionality, predictability, self-regulation, and self-reflection.

1. Intentionality – the human ability to form one's own goals and intentions. On one hand, AI can expand the field of human intentionality by offering new possibilities and insights based on data analysis. For example, such a model might suggest interesting directions for self-development based on behavioural patterns, or recommend a promising business niche based on trend analysis. However, on the other hand, it can subtly distort intentions through content personalisation. For instance, if the algorithm detects increased emotional sensitivity to certain topics, it might more frequently present related content, gradually shifting the person's focus of attention and goal-setting. Eventually, there's a risk of ending up in an "intentional bubble" (Pariser, 2011), without even realising it.

Here it's appropriate to mention special consequences from, for example, NS AI: having a symbolic component, it potentially can track its own biases and explain the logic of personalisation to humans. For example: "I am suggesting more publications on topic X to you because I detected your increased emotional response to keywords A, B, C in previous materials". This can make the distortion more apparent and give people a chance to adjust the algorithm. However, much depends on the developers' goals: whether they will configure the system for maximum transparency or maximum user engagement.

2. Regarding predictability, that is, the ability to understand the consequences of one's actions. As mentioned earlier, traditional AI systems, especially those based on deep neural networks, often work as "black boxes". They produce results, but people don't understand how they arrived at them. This makes the consequences of interacting with such systems less predictable: it's unknown how personal data will influence the algorithm's decisions about an individual. In contrast, NS AI, having a symbolic component, can potentially provide more understandable explanations: "I classified you in risk category X because you meet criteria A, B, C according to this logic". Of course, this doesn't make the result more pleasant, but at least

it allows understanding the causal relationships between one's actions and system decisions. Thus, neuro-symbolic AI potentially offers a chance to correct behaviour or contest decisions. However, how this possibility will be used depends on the developers' values. Oversimplified explanations ("you're in the risk group because AI decided so") under conditions of power asymmetry might, conversely, intensify feelings of helplessness and life unpredictability. And although technically NS AI has more capabilities for generating explanations than pure neural networks, the social consequences will depend on how these capabilities are implemented in practice.

3. Self-regulation. As with traditional platforms, NS AI can subtly transform users into passive recipients of advice, narrowing the space for personal initiative. But there's an important difference. While classical recommendation systems adapt to personal patterns, NS AI can potentially offer a broader perspective. For example: "I see you're interested in topics X, Y, Z. But have you considered topic A? According to my knowledge base, it could help you develop skills B, C, D, which are important for your long-term goal". This adds a mentoring element, shifting focus from satisfying immediate needs to long-term self-development. Of course, much depends on what goal developers will embed in the system and how it will align with the platform's business model. The attempt to retain user attention at any cost might outweigh considerations of their long-term well-being.

4. Finally – self-reflection. In this area, NS AI opens interesting possibilities. Having an advanced knowledge base and ability to think logically, it can potentially help people structure self-reflection. For example, after analysing a person's history of posts, interactions, and reactions, the system might ask: "I've noticed you often react strongly to topics A and B. At the same time, you rarely comment on posts with opposing views. Do you think this might lead to a one-sided perspective? What arguments might supporters of the other viewpoint offer?" Or: "Lately, angry and anxious emotions have dominated your posts. Have you considered how this affects your well-being and relationships with people? What activities might help you restore emotional balance?" Such unobtrusive "mirrors" can encourage looking at one's behaviour from the outside, thinking about one's own biases and emotional patterns. This potentially promotes self-understanding and escape from "information bubbles".

The question remains open about the ethics and social acceptability of such interventions, at least at the current stage of our coexistence with AI. Are people ready to entrust reflection about the most intimate aspects of their "self" to algorithms, even such "human-centric" ones? And will developers act in the interests of human self-actualisation if it contradicts the goals of maximum engagement? After all, historically, the first popular American platforms haven't always demonstrated high ethical standards in this area.

These AI manifestations can be explained, based on the publicly known capabilities of the most human-centric

neuro-symbolic AI model, using the hypothetical example of the Ukrainian state platform "Diia" and its classic concept of "Government as a Platform" (GaaP). Ukrainian "Diia" enables citizens to obtain certificates, submit applications, pay taxes online – without needing to visit various institutions or collect paper documents. On one hand, this should expand citizen intentionality, as it frees them from routine and allows focus on more meaningful goals. But on the other hand, there are obvious potential risks to autonomy, especially in the case of integrating this platform with neuro-symbolic AI.

For example, a citizen wanted to start their own business and visited "Diia" for consultation. NS AI analyses their entire history of interaction with the state (from tax payments to received subsidies) and suddenly outputs: "Based on your profile, I don't recommend you start your own business. Statistically, people with your background have high chances of failure and falling into debt. Why not instead take retraining courses under program X"? And although the algorithm's recommendation might be based on 'objective' data, it still somewhat limits this person's field of intentionality. The question is whether society is ready to delegate such existential choices to AI?

Another example: a person applies for social assistance. NS AI processes the request instantly, but instead of the expected "yes" or "no" provides a detailed explanation: "You don't meet the assistance criteria because: a) you have additional income A that exceeds the threshold; b) last year you made purchase C, which indicates no urgent need; c) you haven't utilised opportunities B for independently improving your financial situation". While such explanation makes the decision more predictable, it simultaneously may create a sense of hidden state control over the citizen's personal life.

It's also worth examining the impact of GaaP with NS AI on citizens' self-regulation. On one hand, algorithms can nudge them toward more responsible decisions: "I notice you frequently miss tax payment deadlines. Let me recommend a financial literacy course from the Ministry of Finance". Or: "According to my analysis, your habit of delaying declaration submissions until the last moment creates additional risks. Why not try submitting them early – it will save you lots of stress". Such personalised prompts encourage a more attentive and strategic approach to interaction with the state.

On the other hand, excessive AI guardianship can transform citizens from active policy-making participants into passive service users. For example, before local elections, a personalised message appears in the "Diia" news feed: "Hello! I've analysed your preferences and selected parties that best align with your values. Here are their programmes. And here's a list of the nearest polling stations with instructions on how to get there. Vote – it's important"! Although such personalisation supposedly should activate one's participation in community life, it actually somewhat devalues the very essence of democratic choice, reducing it to just another "recommendation for you".

## ■ Discussion

Thus, NS AI application in public administration has an ambiguous impact on different dimensions of human agency. At best, it can expand intentionality, directing it toward achieving socially significant goals and self-development. Thanks to its symbolic component, it can better explain algorithmic decision logic, making personal action consequences more predictable. This reduces feelings of frustration and powerlessness when interacting with the bureaucratic machine. NS AI can also support citizens' self-regulation through personalised “nudges” toward more mature and responsible civic behaviour. And its causal modelling capability opens space for deeper self-reflection – for example, through visualising systemic effects of human actions and decisions.

Despite these advantages, there are significant risks. Having access to an extremely broad citizen database (from purchase details to social media preferences), NS AI can adjust its recommendations to subtly narrow the space of choice, imposing certain values and behavioural models. If these values are determined by a narrow group of developers without broad social dialogue, there's a risk of technocratic usurpation of democratic processes. After all, the more routine aspects of civic and political participation are delegated to algorithms, the more public space loses the “necessary friction” of live interaction and meaningful debates.

The results of this research are at the centre of contemporary discussions about the role of artificial intelligence (AI) and decentralised platforms in public administration, allowing comparison with concepts proposed by leading scholars. For example, M. Veale *et al.* (2018) emphasised the importance of fairness and accountability in algorithmic governance, especially under high-stakes societal conditions. While their cited work focuses on regulatory mechanism needs, this research expands the perspective by offering an additional level of transparency and adaptability through blockchain platform integration. Similar to German J. Habermas & T. McCarthy's (1984) conclusions about communicative action's role in democratic systems, neuro-symbolic AI can serve as a new and important tool for strengthening democratic accountability through inclusive access to data analysis and algorithmic decision explanation. Meanwhile, critics like J. Burrell (2016) emphasise the problem of “algorithmic opacity” that might complicate practical application of such ideas in complex social contexts.

T. Sun & R. Medaglia's (2019) research highlighted challenges in AI implementation in the public sector, particularly in healthcare, emphasising the importance of balance between innovation and ethical principles. This research makes a similar emphasis but expands to general public policy, including recommendations for using value-oriented platforms to preserve human agency. I. Rahwan *et al.* (2019) emphasised AI's potential as a social actor capable of changing human behavioural patterns. This approach resonates with this research's

conclusions, but makes an additional emphasis on long-term goals that include not only behavioural changes but also human intentionality evolution through AI integration with blockchain-based decentralised platforms. Finally, F. Pasquale's (2015) conclusions about risks of AI becoming a “black box” emphasised the importance of transparent decision-making models. This research proposes an alternative perspective: integrating decentralised platforms to increase algorithm transparency and build trust in their public sphere use.

In conclusion, neuro-symbolic AI combined with multi-service decentralised (blockchain-based) information platforms (such as the Ukrainian-origin Bitbon System) has significant potential to impact human agency right now. It can expand horizons of human intentionality by suggesting new development directions based on data analysis. It can make human action consequences more predictable through explaining algorithm “logic”. It can support self-regulation by reorienting individuals from short-term impulses to long-term goals. Finally, it can provide necessary “mirrors” for deeper self-reflection and escape from bubbles. However, practical realisation of this potential will depend on values and goals embedded by developers in specific system architectures. Perhaps only now are more value-oriented platforms beginning to appear in the world (Ukrainian example “Bitbon System” (Bitbon System, 2021), described in works by I. Dunayev *et al.* (2023b), A. Kud (2024), of Ukrainian origin from Kharkiv). Orientation toward public good and human potential development can make neuro-symbolic solutions truly breakthrough technology for public policy. But constant economic pressure toward maximum engagement and attention monetisation (in private commercial platforms) can equally transform them into even more sophisticated tools for manipulating and narrowing human agency.

## ■ Conclusions

The rapid development of artificial intelligence and platform technologies poses an unprecedented challenge to established philosophical, ethical, and legal concepts of human agency and autonomy. Delegating an ever-wider spectrum of functions to AI systems creates risks of decision-making process opacity, reproduction and amplification of social biases, narrowing of human intellectual horizons, and subtle distortion of judgments. This problem has deep methodological roots, as it touches upon the very nature of human subjectivity as a source of meanings, goals, and actions. Preserving personal dignity and freedom in the AI era requires a fundamental rethinking of the ontological and value foundations of human-machine interaction, as well as developing fundamentally new ethical, legal, and management models for AI control based on human priority.

AI integration will have a transformative and comprehensive impact on all aspects of public administration, challenging established concepts of state sovereignty,

power legitimacy, bureaucratic hierarchy, and more. Methodological priorities for Ukraine and Europe in this field should be: developing ethically grounded and legally binding regulatory frameworks for AI control in the public sector; ensuring multi-level transparency and accountability of AI systems to democratic institutions and the public; implementing inclusive mechanisms for public participation and democratic deliberation regarding key AI decisions; deepening international cooperation with emphasis on ensuring security, human rights, and preserving human dignity in the AI era.

The combined use of AI and platforms in the public sphere creates systemic risks of power and information asymmetry, where control over algorithmic systems concentrates in the hands of a narrow circle of corporate and political players. This leads to the “theft” of citizens’ digital sovereignty, where they lose real ability to influence key decisions that determine their lives. At the methodological level, this requires developing a new paradigm for AI integration into public administration that places humans and their agency at the centre of every decision. Realising AI’s potential for expanding human cognitive and instrumental capabilities while avoiding its totalising influence is possible only under conditions of genuine democratisation of the AI development and implementation process itself through maximum broad involvement of the expert community, civil society, and all stakeholders, but only with the use of other breakthrough digital technologies.

A key methodological and ethical principle of AI development and implementation must be preserving human subjectivity and dignity at the centre of any technological transformations. The goals, values, and limitations initially embedded in AI system architecture should reflect not narrow corporate interests but broad social consensus developed through inclusive interdisciplinary and public dialogue. It’s important to actively experiment now with new models of participatory AI solution design using latest achievements in collaborative platforms, crowdsourcing data collection methods, blockchain-based distributed

consensus mechanisms, etc. Very significant potential is seen in the direction of full management of personal (identity capital) and social capital, which accumulates and is accounted for within the blockchain platform. In this case, access to personal data is provided through an encrypted digital “key” stored on the user’s personal device (smartphone), rather than on the service provider’s side: platform developer or state.

The implementation of new and more human-centric artificial intelligence models combined with multi-service digital platforms and especially digital ecosystems will have a very significant impact on various dimensions of human subjectivity both in Ukraine and globally in the short and medium term. Therefore, it’s important to understand the vector, value basis, and purpose of these changes. On one hand, AI, and especially its modern models beyond traditional neural networks, can expand horizons of human participation by offering personalised opportunities for self-development. It can make interaction with automated systems more predictable and transparent through understandable explanations of its “logic”. On the other hand, without proper regulation and ethical safeguards, these same technologies can subtly narrow personal autonomy, for example, through opaque content personalisation or excessive interference in the inner world. Therefore, at this stage, it’s extremely important that Ukrainian society – scientists, digital service developers, civil society – work together on developing principles for responsible AI use focusing on supporting human dignity.

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## Людська агентність vs штучний інтелект та децентралізовані платформи: у чому виклик для системи публічного управління у світі та в Україні?

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■ **Анотація.** У статті досліджено вплив штучного інтелекту (ШІ) та платформних технологій на концепцію людської агентності в контексті трансформації системи публічного управління. Метою був аналіз ризиків делегування прийняття рішень алгоритмам, пошук шляхів збереження людської суб'єктності в нових технологічних умовах. Основою була ідея «відповідального дослідження та інновацій» і концепція «технологічної медіації». Використання ШІ у публічному управлінні створює ризики «алгоритмічного управління» і втрати контролю з боку людини. Непрозорість ШІ-систем ставить під сумнів принципи демократичної підзвітності. У відповідь розробляються регуляторні й етичні принципи використання ШІ, але готовність системи працювати в умовах непрозорості викликає сумніви. У статті проаналізовано вплив ШІ та централізованих і децентралізованих платформ на ключові виміри людської агентності. Досліджено ризики звуження простору індивідуальної ініціативи та саморегуляції внаслідок пасивного покладання на поради ШІ-асистентів. Водночас відзначено потенціал ШІ в структуруванні людської саморефлексії через виявлення неусвідомлених емоційних та поведінкових патернів. Ці ефекти проілюстровано на прикладі гіпотетичної інтеграції можливостей ШІ в роботу української державної платформи «Дія» за моделлю «уряд як платформа». Показано, як впровадження персоналізованих ШІ-асистентів може, з одного боку, розширювати громадянську інтенціональність через вивільнення від адміністративної рутини, але з іншого – обмежувати поле вибору через активне «підштовхування» до певних поведінкових моделей. Відзначено небезпеку технократичного викривлення демократичного процесу за умови масштабного делегування аспектів політичної участі алгоритмічним системам. У підсумку констатовано, що розвиток ШІ та його інтеграція з платформними рішеннями несе значний потенціал впливу на різні виміри людської агентності. Реалізація цього потенціалу в бік розширення чи звуження автономії критично буде залежати від нормативних установок та цілей, закладених розробниками в архітектуру відповідних систем. Орієнтація на суспільне благо та розкриття людського потенціалу може зробити такі рішення емансипативними технологіями. Практична цінність цієї роботи полягає в розробці рекомендацій для адаптації системи публічного управління до викликів, спричинених впровадженням штучного інтелекту та платформних технологій, з акцентом на збереженні людської суб'єктності, демократичної підзвітності та етичності прийняття рішень

■ **Ключові слова:** публічна політика; людська агентність; цифрова етика; цифровий гуманізм; людиноцентричність; саморегуляція; персоналізація