

Artificial Intelligence as a Development Tool for Digital Governance

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Abstract

In the era of technology, the digital transformation of public organizations, less bureaucracy, and flexible services are vital. In the wake of digital governance, the term artificial intelligence (hereinafter - AI) has been gaining ground since the twentieth century, which has an inexhaustible potential to improve organizational processes.

Digital governance and artificial intelligence are the latest words in the development of modern technologies in the world. Among them, this is also a novelty for the Georgian public sector. Although it is difficult to determine the specific timing of the introduction of AI and to assess the expected results in advance, the creation of an effective control mechanism is a particular difficulty for its successful integration. For this purpose, the digital governance system, which has already been partially implemented in the Georgian public sector and is developing dynamically, may become the best tool. Through digital governance, the use of artificial intelligence will be maximally directed to the benefit of the interests of public institutions, and the control mechanism will ensure the observance of the ethical and legal frameworks, which is necessary for the reliable and transparent functioning of this technology.

The aim of the article is, on the one hand, to highlight the importance of digital governance and, on the other hand, to explore the potential of artificial intelligence as a tool for its development. The article reviews the process of evolution of artificial intelligence, its impact on digital governance, Legal documents related to artificial intelligence, namely: the European Commission's Ethical Guidelines Described framework for implementing trusted artificial intelligence, According to the Regulation of the European Parliament and of the Council on the Regulatory, Framework for Artificial Intelligence, the United States Bill on the Rights of Artificial Intelligence, the Singapore Model on the Governing Framework for Artificial Intelligence, The challenges associated with AI and its many possibilities.

Keywords: Digital Governance, Artificial Intelligence (AI), Legislative Framework, Information and Communication Technologies (ICT).

Introduction

Technological changes have also influenced the change in the form of state governance. Since the twentieth century, the term “digital governance” has been established, which, by utilizing information and communication technologies (ICT), promotes openness, transparency of internal state processes, and citizen involvement in political processes.¹ Wide access to information allows people to control government actions, and governments, in turn, are given the opportunity to improve the provision of public services, make processes more transparent and inclusive.² The main value of digital, or e-governance, is citizen-centricity, the presence of informed citizens in the country. They should have real leverage for change and contribute to policy development.³

Organizations around the world are issuing recommendations to developing countries on what criteria a digital government built on democratic principles should meet in order to be effective and deliver results for the country and its population. According to the European Council, e-government strategy

¹ Frank Bannister and Regina Connolly, *Defining E-Governance*, Indiana University Press (N2 Winter) 2012. 4.

² Digital Governance, UNDP, <https://www.undp.org/governance/digital-governance> [L.s.26.11.2023].

³ Chen, Y., “Citizen-Centric E-Government Services: Understanding Integrated Citizen Service Information Systems”, *Social Science Computer Review*, 2010, DOI:10.1177/0894439309359050.

should have a quality management system, the goal to improve public e-services and continuously increase user satisfaction.⁴

Digital governance should ensure universal access to basic services in the state, regardless of a person's gender, ethnicity, or social status.⁵

In the wake of digital governance, the concept of artificial intelligence (hereinafter referred to as AI) has been gaining ground since 1956, which aims, as Professor John McCarthy notes, to create systems that can imitate and simulate human cognitive functions. Artificial intelligence describes the capability of a computer to execute tasks that typically need human intelligence.⁶

The recent trend in digital governance is linked to the application of artificial intelligence in storing and analyzing vast quantities of data (Big Data). Robotic devices provide the opportunity to expand the range of tasks, which in turn affects the development of employee skills. New digital governance technologies enable the horizontal distribution of power and functions between organizations, which in turn increases their productivity and promotes the spread of services tailored to common needs in society.⁷

1. The Impact of Artificial Intelligence on Digital Governance

As stated earlier, artificial intelligence encompasses the capability of a computer to execute tasks that typically necessitate human intelligence.⁸ Human intelligence is not characterized by one specific trait, but rather by a wide range of abilities and traits. Artificial intelligence emphasizes the elements of human intelligence, including learning, reasoning, problem-solving, perception, and the use of language.⁹

The deployment of artificial intelligence within the public sector holds significant promise for enhancing both the efficiency and quality of services provided. Artificial intelligence contributes to the proper allocation of resources, optimization of processes and increased productivity.¹⁰ AI enables public organizations to process large amounts of data quickly and efficiently. In addition, when providing digital services, chatbots can be used, which generate knowledge, speak the appropriate language, and save human resources. In a specific situation, AI ensures unbiased, emotion-free decision-making.¹¹

There are speculations that artificial intelligence will replace civil servants. In fact, it itself provides increasing level of public education, employ retraining and employment. AI is especially effective in crisis management, healthcare and transportation.¹²

Countries that are part of the OECD (Organization for Economic Co-operation and Development) concur that the integration of AI within the public sector will result in more proactive public services and enhanced procedures. Most countries have an AI strategy, a plan that outlines the steps needed to implement artificial intelligence in the public sector. The 23 OECD countries identify three categories where AI increases efficiency: Internal governmental procedures, formulation of policies, and the creation and provision of public services.¹³

⁴Electronic Governance (E-Governance), Council of Europe Recommendation, 2004, 11.

⁵E-Government Survey 2022, The Future of Digital Government, United Nations, 2022, 29. <https://www.un-ilibrary.org/content/books/9789210019446/read> [L.s.26.11.2023].

⁶Russell, S., and Norvig, P., "Artificial Intelligence: A Modern Approach", Fourth Edition, Pearson Series, 2021, 31.

⁷Dunleavy, P., and Margetts, H., "Data science, artificial intelligence and the third wave of digital era governance", 2023 <https://journals.sagepub.com/doi/10.1177/09520767231198737?icid=int.sj-full-text.citing-articles.2> [L.s.26.11.2023].

⁸Russell, S., and Norvig, P., "Artificial Intelligence: A Modern Approach", Fourth Edition, Pearson Series, 2021, 31.

⁹Artificial Intelligence, Encyclopaedia Britannica, 2023. <https://www.britannica.com/print/article/37146> [L.s.26.11.2023].

¹⁰Gesk, T., S., and Leyer, M., "Artificial intelligence in public services: When and why citizens accept its usage", Elsevier, 2022, 3. <https://www.sciencedirect.com/science/article/pii/S0740624X22000375?via%3Dihub> [L.s.26.11.2023].

¹¹Ahn, M., J., Chen, Y., and Wang, Y., "Artificial Intelligence and Public Values: Value Impacts and Governance in the Public Sector", 2023, 3-5. <https://www.mdpi.com/2071-1050/15/6/4796> [L.s.26.11.2023].

¹²Reis, J., Espirito Santo, P., and Melao, N., "Impacts of Artificial Intelligence on Public Administration: A Systematic Literature Review", 2019, 5. <https://core.ac.uk/download/pdf/226770041.pdf> [L.s.26.11.2023].

¹³"Digital Government and Open Government Data", OECD, 2023, https://read.oecd-ilibrary.org/governance/government-at-a-glance-2023_3d5c5d31-en#page142 [L.s.26.11.2023].

Artificial intelligence can assist the public sector in enhancing digital communication with citizens. By creating streamlined and efficient processes in the public sector, it is possible for civil servants to spend their time on more important work and add value to their positions. Data-driven policy development allows the consideration of production, social, environmental factors and citizens' views on the shortcomings of specific policies.¹⁴

The introduction of digital governance in a country contributes to the implementation of democratic processes, while artificial intelligence creates impartial, equal opportunities that are free from discrimination or other stereotypes.¹⁵

2. Risks and challenges of implementing artificial intelligence

While discussing the potential of artificial intelligence in a positive light, we should not forget the risks and challenges that accompany its implementation in the public sector. The first thing to note when talking about risks is the lack of talent, people who know the principles of working correctly with artificial intelligence. The lack of investment in innovation and research into artificial intelligence leads to its implementation with the wrong steps, where ethical and security norms will not be taken into account, where AI cannot ensure the development of transparent and human-centered digital governance principles.¹⁶

In addition, unlike the private sector, the public sector does not have sufficient financial resources to make large investments in new technologies. Another challenge for AI may be the bureaucracy of public sector, which hinders the decision-making process and the ability to implement AI projects in a timely manner. Given that the public sector is characterized by strict legal regulation, it may hinder the implementation of new technology and require the study of legal issues related to machine learning algorithms. Moreover, it is essential to recognize that the public sector might not have the necessary technological infrastructure for AI, encompassing both hardware and software.¹⁷

Artificial intelligence increases the state's governance capabilities, which, in the case of developing democracies, increases the risk of its misuse. Georgia is one of such countries, where artificial intelligence is slowly gaining ground, especially in law enforcement agencies of the public sector. The lack of information about the systems used poses a risk of bias and creates public distrust of change.¹⁸

3. Current regulations on artificial intelligence

Establishing dependable AI goes beyond the mere dependability of the AI system itself. It necessitates a thorough and organized strategy that guarantees the dependability of every component and process within the socio-technical environment over the entire lifecycle of the system. The European Commission's Ethical Guidelines present a framework for implementing trustworthy artificial intelligence, focusing on three important components:

- Adherence to legal standards - AI should follow all applicable laws and regulations;
- Moral - must maintain ethical values and principles;

¹⁴ Barroca, J., "AI The Future of Government", Forbes, 2023. <https://www.forbes.com/sites/deloitte/2023/05/10/ai-and-the-future-of-government/?sh=77d784ac3c64> [L.s.26.11.2023].

¹⁵ "Government at a Glance 2023", OECD, 2023, https://www.oecd-ilibrary.org/governance/government-at-a-glance-2023_3d5c5d31-en?jsessionid=WGph7Y90OCAPP1R41cHKauJ6Vsphv_Y1NJ8kHOX.ip-10-240-5-168 [L.s.26.11.2023].

¹⁶ Berglind, N., Fadia, A., and Isherwood, T., "The Potential Value of AI-and how Governments could look to capture it", 2022, <https://www.mckinsey.com/industries/public-sector/our-insights/the-potential-value-of-ai-and-how-governments-could-look-to-capture-it#/> [L.s.26.11.2023].

¹⁷ Hillemann, D., "Navigating the Challenges of Implementing Artificial Intelligence in the Public Sector: An In-Depth Analysis", 2023, <https://dhillemann.medium.com/navigating-the-challenges-of-implementing-artificial-intelligence-in-the-public-sector-an-in-depth-cb714fe6616b> [L.s.26.11.2023].

¹⁸ Eristavi, D., and Davituri, G., "Application of Artificial Intelligence Systems in Georgia", IDFI, 2021, 37. AI ENG FULL.pdf (idfi.ge) [L.s.26.11.2023].

- Sustainability - must be sound both technically and socially, understanding the risk that, despite good intentions, artificial intelligence systems may cause unintended, unintentional harm.¹⁹

As per the Regulation of the European Parliament and the Council, the regulatory framework for artificial intelligence aims to achieve four distinct objectives:

1. Guarantee that AI systems available in the market comply with legal standards and safety regulations;
2. Offer legal clarity to stimulate investment and foster innovation in the field of AI;
3. Reinforce governance and ensure effective enforcement of current laws that pertain to fundamental rights and security provisions, applicable to artificial intelligence systems;
4. Encourage the formation of a unified market for lawful, safe, and trustworthy AI applications, preventing the fragmentation of the market.²⁰

Through public involvement, the United States has formulated a bill of rights for artificial intelligence that aligns with democratic ideals and safeguards civil rights, civil liberties, and privacy. This bill encompasses five key principles:

- Safe and efficient systems - protection against unsafe or inefficient systems;
- Protection from algorithmic discrimination - systems must be used and designed fairly and impartially;
- Data privacy - protection from data exploitation practices and control over the use of data about an individual;
- Observation and Explanation - Informing about the functioning of an automated system, which is aware of both the methods used and its impact on the results that affect the individual;
- Human alternatives, consideration, and withdrawal - the ability to opt out of participation whenever you wish, and have access to a responsible individual who can promptly resolve any issues you may be facing.²¹

The AI governance framework model presented by Singapore encompasses the following areas:

1. Governance structures and measures within the organization - modifying or establishing internal governance systems to incorporate the values, risks, and responsibilities tied to algorithmic decision-making;
2. Assessing the extent of human participation in AI-driven decision-making - offering a framework that assists organizations in evaluating their risk tolerance regarding AI use, which includes identifying acceptable risks and establishing the suitable level of human involvement in AI-assisted decision-making;
3. Management of operations: Factors to consider when creating, selecting, and sustaining AI models, with an emphasis on data management;
4. Engagement and communication with stakeholders - Efficient interaction with the organization's stakeholders and developing comprehensive strategies for relationship management with them.

AI solutions must be based on the principles of openness, fairness, and protect the interests, well-being, and safety of individuals.²²

¹⁹ Ethics Guidelines for Trustworthy AI, European Commission, 2019, <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai> [L.s.26.11.2023].

²⁰ Regulation of the European Parliament and of the Council, European Commission, 2018, 4. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018PC0368> [L.s.26.11.2023].

²¹ AI Bill of Rights, White House, 2022, 5-7. <https://www.whitehouse.gov/wp-content/uploads/2022/10/Blueprint-for-an-AI-Bill-of-Rights.pdf> [L.s.26.11.2023].

²² Model Artificial Intelligence Governance Framework, second edition, Personal Data Protection Commission Singapore, 2020, 15-20. <https://www.pdpc.gov.sg/-/media/files/pdpc/pdf-files/resource-for-organisation/ai/sgmodelaigovframework2.pdf> [L.s.26.11.2023].

4. Research Methodology

After an in-depth study of the existing literature and analysis of relevant scientific papers, quantitative research methods were used for a complex analysis of the research subject, namely, artificial intelligence as a tool for developing digital governance. 100 public sector employees were interviewed through a questionnaire. The participants in the study agreed to remain anonymous, which is why we do not name the research organizations. A Likert scale was used to collect data on a number of questions in the questionnaire, which allowed us to measure the intensity of the respondent's attitude towards a particular issue. The analysis of the received answers was done by weighting, each answer was assigned a numerical value. The received data was processed in R and a detailed statistical analysis was performed.

The questionnaire included 4 main topics, namely:

1. The impact of artificial intelligence on digital governance;
2. Risks and challenges of implementing artificial intelligence;
3. Current regulations on artificial intelligence;
4. State readiness for implementing AI in digital governance.

53.3% of respondents believe that the use of artificial intelligence (AI) in public administration is more or less important, and the three main areas in which the state should implement AI are: data analysis and forecasting; communication with citizens (chat bots, automated services); decision support and optimization. The biggest challenges for implementing AI in the public sector were identified as data security and confidentiality (66.7%), lack of regulations and standards (46.7%), low level of employee readiness (46.7%), and lack of technical infrastructure (53.3%).

40% of respondents say that they are not familiar with AI regulations and legislation at all, while 53.3% believe that the development of clear regulations is critically important.

33.3% of respondents believe that the Georgian public sector is completely unprepared for the effective use of AI (46.7% - partially ready). When asked in what direction the state should continue to work to introduce AI, 60% of respondents believe that this is the retraining of public sector employees in the direction of AI, 20% believe that the technological infrastructure needs to be improved, and 13.3% believe that regulations and ethical standards need to be refined.

5. State readiness for effective AI implementation in digital governance

When implementing artificial intelligence in the public sector, the state should adhere to the principle of digital governance, create innovative services or services that are user-oriented. A trusted, transparent, ethical and accountable AI transformation involves the development of data sharing capabilities, where government agencies should ensure the involvement of all parts of the company hierarchy in information sharing and encourage transparent cooperation with the private sector. It is important to increase artificial intelligence literacy and skills in the public sector, which will create an understanding of the impact of AI in the political decision-making process and increase their readiness and acceptance of new technology. By enhancing data management practices, the state guarantees the ethical deployment of artificial intelligence, which will gather data in a fair and responsible way while safeguarding the privacy of citizens. When implementing a growing technology such as artificial intelligence in digital governance, a dynamic regulatory framework is essential.²³

The public sector has a crucial responsibility to create an enabling environment for AI. This includes creating an ecosystem that supports the expansion of domestic startups and industries, attracts investment, facilitates the widespread use of AI across sectors, and ultimately plays a major role in driving socio-economic growth and prosperity. At the same time, for AI to advance, governments need to create a regulatory framework, that can mitigate and minimize the threats, risks, and challenges associated with AI systems.. It is crucial to explicitly outline the methods and roles involved in

²³ Barroca, J., "AI The Future of Government", Forbes, 2023, <https://www.forbes.com/sites/deloitte/2023/05/10/ai-and-the-future-of-government/?sh=77d784ac3c64>[L.s.26.11.2023].

evaluating the performance of AI systems, as well as to guarantee that these evaluations are transparent to the public.²⁴

For the development of digital governance, it is important that artificial intelligence does not go beyond the principles of a democratic state and is based on confidentiality, data protection, compliance with both local and global regulations. By strengthening security, the state should protect itself from potential cyber threats and user surveillance, promote the impartiality of artificial intelligence, and uphold the principle of justice in all segments.²⁵

6. Scientific Novelty

The discussion of artificial intelligence as a tool for the transformation of public governance in Georgia is a relatively new topic for Georgian legal discourse. The article discusses a multi-component structure for assessing the readiness of the state, which includes human resources, infrastructure, legal framework and ethical standards. The conceptual framework discussed in assessing the readiness of the state takes into account both international experience and the unique socio-political context of Georgia. The paper emphasizes the need for the introduction of artificial intelligence in the public sector to be carried out with strict observance of human rights and the principles of democratic governance.

With an interdisciplinary perspective, namely by combining the fields of law, public administration and information technology, the work creates a new type of in-depth understanding of the problem. The respondents' answers provide an opportunity to look into the real state of administrative practice and governance perspectives. As a result of the survey, the main directions where state intervention is needed (strengthening human resources, infrastructure, regulations) have been identified, which is the basis for the formation of effective policies.

Conclusion

Today, artificial intelligence (AI), as a technology capable of simulating human intelligence and automating complex tasks, is emerging as one of the main tools for the development of digital governance. Its implementation not only contributes to increasing the efficiency of digital governance, but also fundamentally changes the dynamics of public sector activities, which in turn improves the quality of services for citizens and optimizes the decision-making process.

The primary benefit of artificial intelligence is its capacity to streamline administrative tasks and repetitive activities. This means transferring tasks to AI that previously required a lot of effort and time from public officials. As a result, public sector employees can devote more resources to discussing strategic issues, shaping policy and creating added value for citizens.

Furthermore, AI's capabilities go beyond just automating processes – it plays a significant role in governance. It enables policymakers to analyze data, predict trends, and make informed, data-driven decisions. This is especially important in public resource management, where AI can help governments optimize budgets and develop policies that are more responsive to citizens' needs.

However, the full potential of artificial intelligence cannot be fully exploited without an appropriate regulatory framework. The existence of a regulatory legislative framework for AI in a country is critically important, as it ensures the safe and ethical implementation of the technology. Regulatory policies should include issues of data protection, transparency and accountability so that the integration of AI can contribute to strengthening public trust and its widespread use.

²⁴ Eristavi, D., and Davituri, G., "Application of Artificial Intelligence Systems in Georgia", IDFI, 2021, 38. AI ENG FULL.pdf (idfi.ge) [L.s.26.11.2023].

²⁵ Berglind, N., Fadia A., and Isherwood, T., "The Potential Value of AI-and how Governments could look to capture it", 2022, <https://www.mckinsey.com/industries/public-sector/our-insights/the-potential-value-of-ai-and-how-governments-could-look-to-capture-it#/> [L.s.26.11.2023].

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