

Current Trends in Digital Transformation of Public Administration

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Abstract. The digitalisation of public administration is a process aimed at improving access to goods and services. The demand for facilitating access to services, in particular public services, and boosting the economy, to which the digital transformation can contribute, makes this study relevant. The purpose of this study is to analyse current trends in the digital transformation of public administration and public authorities. The study employed general scientific methods, in particular analysis and synthesis, and comparative methods. Areas for improving the efficiency of decision-making by public authorities through the use of information and communication technologies and digitalisation were considered. It has been substantiated that the intensified use of the latest information technologies in providing various services by public authorities determines the beginning of the formation of its own model of digitalisation of public administration. The digital transformation of public administration is defined as a problem-solving tool for the society that can provide significant savings in public expenditure, benefiting the administration and the citizens, whose daily needs and concerns are placed at the centre of public administration strategies. The impact of digitising services for citizens has been shown to be effective, in particular in facilitating access to and use of services. The necessary conditions for successful digital transformation were identified

Keywords: digital citizenship, digitalisation of public administration, e-government, public administration, digital access

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Introduction

The modern practice of institutional support of governance processes shows the trend of changing the concept of “public authorities” to “public administration” [1-3], as public authorities demonstrate a tendency towards increasing publicity, transparency, elimination of the practice of direct disposition and imperative prescriptions [4-6]. The international practice of the concept of “public administration and governance” [7-9], emphasises its “people-facing” approach. The process of digitalisation of public administration is part of a strategy aimed at improving access to goods and services throughout Europe – both for citizens and businesses [10-12]. Approved by the Ukrainian government, the Concept for the Development of e-Governance in Ukraine [13] and the Ukrainian Digital Economy and Society Development Concept for 2018-2020 with an action plan for its implementation [14] also aim to harness the potential of information and communication technologies to promote innovation, sustainability, economic growth and progress. That is why the quest for ways to improve the efficiency of managerial decision-making by public authorities through the use of information and communication technologies, digitalisation, and the introduction of e-governance is relevant.

Recent years indicate the activation of not only the use of the latest information technologies in providing a wide variety of processes by public administration but also the accumulation of Ukrainian experience and the formation of our own Ukrainian model of digitalisation of public administration. The studies substantiate the concept of implementation of information and communication technologies in the activities of public administration according to the scheme: “informatisation of public administration” – “e-government” – “digitalisation of public administration and management (digital governance)” [15]. The author notes that, unlike informatisation and e-government, digitalisation transforms management processes, improving them qualitatively, creating new digital services and innovative forms of service activities of state and local authorities using network-, cloud- and smart- technologies. Some studies summarise the Ukrainian and international experience of using information technologies of intellectual management in public management practice [16-18], emphasise the importance of implementing e-government and the advantages of its application in comparison with traditional mechanisms of public administration, etc. [19; 20].

The process of establishment of digital governance in the Ukrainian realities has determined the need to investigate conceptual approaches to assessing the development of digital society and digital governance and develop analytical tools adapted to the specifics of digital development content at the local level [21]. Early 21st century studies have already presented strategies for introducing IT initiatives into public e-governance practices [22], and further studies have focused on various aspects of the digitalisation of decision-making processes and public administration.

Current discourses focus on narrower issues of e-governance organisation [23-25], for example: standardisation

of forms (in particular application forms, documents) through benchmarking, which will help minimise governmental efforts by reusing form elements and reduce complexity for citizens by providing a unified presentation of information [26-28]. These forms are a central interface for the exchange of information between the government and citizens, a way to “translate” laws into practice, and facilitate this exchange. Unfortunately, the development of these forms often requires a lot of effort to ensure that they meet legal requirements, as a result of which citizens often describe them as very complex. The authors [28] present a meta-model that can be used to create reference models for electronic forms in the public administration system. The first studies on the standardisation of e-services in public administration pointed to the limitations of their use due to the significant differences between private organisations and public administration [4].

Thus, *the purpose of this study* is to analyse current trends in digital transformation in public administration and public authorities.

The Concept of Digitalisation and Methods of its Use in Public Administration

Digitalisation is a global trend, a long-term priority and a key driver of all modern processes. The rise of technologies of the Fourth Industrial Revolution significantly changes the nature of production, social processes and the pace of innovation in general. Support for digital transformation is one of the five policy priorities identified by the European Commission in the proposals “Joint Communication: Eastern Partnership Policy for the period up to 2020”, published on March 18, 2020 [29]. A strong digital presence around the EU will promote growth and stimulate Ukraine’s sustainable development. The EU will further invest in the digital transformation of partner countries in line with EU legislation and best practices and will support large-scale, highly innovative digital start-ups in the region.

However, the digital transformation of public administration is now more important and urgent than in any other industry. By promoting digital citizenship rights, digital technologies offer countless opportunities to improve both the performance of administrations and the relationship between administrations and citizens and businesses. The use of information technology in public administration is usually seen as a tool to improve the efficiency of existing public administrations, digitise existing documents, facilitate the dissemination of information and to better control social processes [30-32]. Effective and innovative public administration should provide fast and high-quality services to citizens [33], which means revising and rethinking procedures and services in a digital perspective.

It is important to note that some digital functions have already been implemented and continue to operate in the private and public sectors. For instance, electronic signatures and digital documents have existed in Ukraine and have been functioning alongside paper documents since 2003.

“Digital citizenship”, a set of rights and obligations related to the digital sphere, aims to simplify relations between citizens, businesses and public administration through digital technologies. Digital citizenship ensures that citizens and businesses have access to all data, documents and services of interest digitally, in order to guarantee easier access to services. Among the elements that distinguish digital citizenship are:

- digital access - most importantly, free access to technology must be maintained for digital citizenship;
- digital rights and responsibilities – on the one hand, there are rights related to confidentiality, data processing and freedom of expression; on the other hand, there are duties and responsibilities that provide for the appropriate use of technology in accordance with the law;
- digital skills – technology is constantly evolving and the labour market requires more and more innovative skills in the use of electronic tools and services;
- digital communication – with new technologies, each person can communicate and collaborate with whomever they want, from anywhere, at any time;
- digital commerce – today’s marketplace is digital and online shopping is becoming more common, therefore rules need to be established to protect digital consumers;
- digital health and wellbeing – new technologies can also benefit the health sector (e.g. electronic patient logs or digital prescriptions).

The achievement of digital citizenship is greatly facilitated by the computerisation of public administration, which is simply called “Electronic Governance”. E-governance is defined as the use of information and communication technologies in public administrations in combination with organisational changes and new skills to improve public services, democratic processes, and strengthen support for public policy [34]. However, it is not a homogenous or static phenomenon. E-governance has evolved from an initial web presence to transactional and integrated applications. Thus, in recent years, local authorities in the UK have begun to apply various “smart” technological changes to improve the provision of services, in particular, the wider introduction of computational and algorithmic tools in service areas in local authorities [35]. These changes have a profound impact on the structure of public administration. The focus was on specific cases of artificial intelligence, in particular autonomous agents and predictive analytics, and a combination of desk research, questionnaire and interviews was used to better understand the extent and nature of these changes in local government [35]. The results show that local governments are beginning to adopt intelligent technologies and that these technologies have an unpredictable impact on how government administrators and computational algorithms are implemented in the provision of public services.

The European Commission has established the basic principles on which actions on e-governance should be based [36]:

1. Public administrations and government agencies must be open, efficient, and inclusive, providing limitless, personalised, convenient, and end-to-end digital public services to all citizens and businesses.
2. Innovative approaches are used to develop and provide the best services in accordance with the needs and requests of citizens and businesses.
3. Public administrations use the opportunities offered by the new digital environment to facilitate their interaction with stakeholders and with one another.

Experience of Implementing Digitalisation Tools in Public Administration in Ukraine and Other Countries

Both the quality and the use of digital public services increased in 2019. 67% of people (compared to 57% in 2014) [37] who used the internet and submitted documents to their public administration have reported using online channels, indicating the convenience of online procedures compared to paper ones. The experience of one of the most successful e-governments, the German government, is built on four basic principles of public sector modernisation [16]: allocation of responsibilities, which increases the efficiency of providing services; a focus on citizens as equal partners of the state and their protection in the provision of e-services; diversified development of public services, which will contribute to a more efficient and transparent use of funds; effective management, which enables the recruitment and retention of the employees most interested in the results of their work in the organisation.

In Ukraine, experts monitoring statistics on the digital economy and society in Ukraine state that the country’s digital economy can be assessed with a score of three out of a possible five [38]. Some countries have achieved better results and in some areas even collect data on 100% of the Digital Economy and Society Index (DESI) [39]. At the same time, there are countries that have failed to compile such assessment indicators at all [37]. To climb the “technological ladder”, it is important for Ukraine to make effective use of its scientific and innovation potential and to digitalise all spheres of social life. The public project “Digital Agenda 2020” [40-41], was launched in 2016 and aims to increase the number of high-tech initiatives and projects, create opportunities for the further transformation of the economy, and the establishment and development of competitive and efficient sectors of the economy. This, in turn, can have a significant positive impact on the quality of life of citizens. Though unpredictable global challenges in 2020 have brought adjustments, the groundwork for the digital transformation of Ukrainian society has been laid.

The digitalisation of public administration plays an important role in this process, allowing for significant improvements in the quality of services in public administration practice. A project proclaiming 10 main strategic technologies for Ukraine’s public sector was created in 2020 [40]. It is worth noting that in today’s realities, almost all of them are

actively used or may be implemented in the near future. Thus, the “digital” workplace technology is designed to diversify the work of specialists and save them time spent on processes that can be automated. Multi-channel communication and engagement with citizens provide additional opportunities to reach out to citizens; this process becomes much faster and easier, while at the same time more citizens’ opinions can be considered. Open data allows every citizen to have access to the necessary information. Electronic identification of citizens is primarily needed to enable secure access to information and resources. Ubiquitous analytics technologies, the use of smart machines, and the creation of digital government platforms can improve and facilitate the process of providing public services. The Internet of things, Blockchain and software architectures can fundamentally change the way public and government organisations work.

Thus, the basis for the functioning of modern society is the use of cyberspace. The turn of the twenty-first century is a time of a new global revolution brought about by an avalanche of modern information and communication technologies. Access to mobile phones, computers and the global network has become a determining factor in the development of society. The idea of universal automation, computerisation and the possibility of using high-speed information and communication links extends beyond the realm of academia and large businesses. The spread of internet and telecommunications networks has contributed to the emergence of a new approach to communication between citizens and the state represented by central and local governments. It also allowed the introduction of new solutions, models, and services based on specific social needs and expectations.

According to the e-government concept, the main condition for establishing such a government is to achieve better communication with authorities at all levels and to speed up procedures for resolving management issues. Investing in modern e-administration can bring tangible benefits to citizens and businesses, as well as to public

administration, as its activities become more target-oriented, and based on specific social needs and expectations.

Conclusions

Digital transformation is radically changing all aspects of society and the economy. The digitalisation of public administration is not only a tool for addressing social issues, it is first and foremost an engine of social development. A digital transformation of public administration would provide significant savings in public expenditure, which would benefit not only the administration but also citizens, whose daily needs and concerns are placed at the centre of public administration strategies. Digitalising most public services for citizens will facilitate greater access and use of such services, extend their outreach and convenience, which will ultimately improve the quality of a consumer’s experience of these services. The necessary conditions for successful digital transformation are: economic development, social integration and good governance in the public administration system.

Summing all the above, it is possible to highlight certain trends of digital transformation in the activity of public authorities, such as widespread use of electronic signatures, digital document production and e-invoicing; promotion of digital citizenship rights, allowing citizens and businesses to access data digitally; computerisation of public administration and formation of e-government.

The authors have proved that the assessment of digital governance will increase the reliability of the decision-making process in the management of complex multi-level socio-economic systems, and the proposed model allows a systematic analysis of the state of digitalisation of public administration and governance at the level of territorial communities.

Further studies on the implementation of digital transformation in the activities of public administration should be oriented towards comprehensive support of digital citizenship and encouragement of digital start-ups in the development of territorial communities.

References

- [1] Mytaii, O.V., & Svitovyi, O.M. (2018). Research on the concepts of “governance” and “public administration”. *State and Regions. Series: Public Management and Administration*, 1(61), 124-128.
- [2] Kyriakidou, E., & Vazakidis, A. (2020). Financial crisis and public reforms: Moving from public administration to public management. Cost allocation and performance information for decision-making process in the public sector. The case of the Greek public sector under the Greek crisis. *CEUR Workshop Proceedings*, 2761, 252-262.
- [3] Jonk, E., & Iren, D. (2021). Governance and communication of algorithmic decision making: A case study on public sector. *23rd IEEE Conference on Business Informatics*, 1, 151-160.
- [4] Rainey, H., Ronquillo, J., & Avellaneda, C. (2010). *Decision making in public organizations. Handbook of decision making*. Chichester: Wiley.
- [5] Cestari, J.M.A.P., Loures, E.D.F.R., & Santos, E.A.P. (2018). A method to diagnose public administration interoperability capability levels based on multi-criteria decision-making. *International Journal of Information Technology and Decision Making*, 17(1), 209-245.
- [6] Glennon, R., Hodgkinson, I., & Knowles, J. (2019). Learning to manage public service organisations better: A scenario for teaching public administration. *Teaching Public Administration*, 37(1), 31-45.
- [7] Mendez, D. (2016). Advanced introduction to public management and administration. *Administration*, 64(3-4), 123-125.
- [8] Kim, Y. (2021). Searching for newness in management paradigms: An analysis of intellectual history in U.S. public administration. *American Review of Public Administration*, 51(2), 79-106.

- [9] Pandey, S.K., & Johnson, J.M. (2019). Nonprofit management, public administration, and public policy: Separate, subset, or intersectional domains of inquiry? *Public Performance and Management Review*, 42(1), 1-10.
- [10] Barr, K., & Mintz, A. (2018). Public policy perspective on group decision-making dynamics in foreign policy. *Policy Studies Journal*, 46, 69-90.
- [11] Barbati, C. (2021). Public decision making in the face of complexity: The necessary change. *Diritto Pubblico*, 27(1), 15-39.
- [12] Džinić, J., & Manojlović, R. (2018). Analysis of academic papers on quality and performance management in public administration. *Zbornik Pravnog Fakulteta u Zagrebu*, 68(2), 243-273.
- [13] Order of the Cabinet of Ministers of Ukraine No. 649-2017-r "On Approval of the Concept of E-Government Development in Ukraine". (2017, September). Retrieved from <https://zakon.rada.gov.ua/laws/show/649-2017-p#Text>.
- [14] Order of the Cabinet of Ministers of Ukraine No. 67-2018-r "On Approval of the Concept of Development of the Digital Economy and Society of Ukraine for 2018-2020 and Approval of the Action Plan for its Implementation". (2018, October). Retrieved from <https://zakon.rada.gov.ua/laws/show/67-2018-%D1%80#Text>.
- [15] Karpenko, O. (2017). Digital regulation: Implementation imperatives in Ukraine. *Current Problems of Public Administration*, 3(71), 57-61.
- [16] Marutian, R.R. (2018). Information technologies of intellectual management in public administration practice: Foreign and domestic experience. *Bulletin of the National University of Civil Defense of Ukraine*, 2(9), 146-153.
- [17] Kouziokas, G.N. (2017). An information system for judicial and public administration using artificial intelligence and geospatial data. *ACM International Conference Proceeding Series*, F13252328, article number 3139402.
- [18] Torres Alfonso, A.M., Trevilla Rojas, N., & Urbay Rodríguez, M. (2020). Preparation of executives of public administration for knowledge management in virtual environments. *Universidad y Sociedad*, 12(5), 300-307.
- [19] Chunpir, H.I., & Ismailzadeh, M. (2020). Comparison of information technology service management (ITSM) practices in e-infrastructures, libraries, public administration and the private sector. *Advances in Intelligent Systems and Computing*, 972, 32-41.
- [20] Purón-Cid, G. (2017). Information technology strategy and management curricula in public administration education in Latin America. *Journal of Public Affairs Education*, 23(3), 903-924.
- [21] Nikolina, I.I., Hulivata, I.O., Husak, L.P., Radzihovska, L.M., & Nikolina, I.I. (2020). Assessment of digitalization of public management and administration at the level of territorial communities. *Scientific Bulletin of the National Hirnychy University*, 5, 150-156.
- [22] Gil-Garcia, J.R., & Pardo, T.A. (2005). E-government success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly*, 22(2), 187-216.
- [23] Hedvicakova, M., & Svobodova, L. (2017). Use of smart technologies in the e-learning course project management. *Smart Innovation, Systems and Technologies*, 75, 167-176.
- [24] Hak, M., Andrić, B., & Sostar, M. (2018). Using information technology in business process re-engineering: Case study of tax administration Croatia. *CEUR Workshop Proceedings*, 2280, 160-166.
- [25] Polkowski, Z., & Jozwiak, M. (2021). Internet of things in public administration. In *4th International conference on computational intelligence and communication technologies* (pp. 343-349). Jaipur: IEEE Xplore.
- [26] Rot, A., Sobińska, M., Hernes, M., & Franczyk, B. (2020). Digital transformation of public administration through blockchain technology. *Studies in Computational Intelligence*, 887, 111-126.
- [27] Toapanta, S.M.T., Gallegos, L.E.M., De Los, A.U.M.E., & Solis, M.P. (2020). Suitable parameters to optimize the information and communication technology resources in a public company of Ecuador. In *2020 Asia Conference on Computers and Communications* (pp. 67-74). Singapore: IEEE Xplore.
- [28] Scholta, H., Balta, D., Räckers, M., Becker, J., & Krcmar, H. (2020). Standardization of forms in governments: A meta-model for a reference form modeling language. *Business & Information Systems Engineering*, 62, 535-560.
- [29] High representative of the Union for foreign affairs and security policy. (2020). *Eastern Partnership policy beyond 2020 Reinforcing Resilience – an Eastern Partnership that delivers for all*. Retrieved from https://eeas.europa.eu/sites/default/files/1_en_act_part1_v6.pdf.
- [30] Ćepa, V. (2021). *Digital transformation of public administration. Architecting the digital transformation*. Cham: Springer.
- [31] McQuiston, J., & Manoharan, A. (2021). E-Government and information technology coursework in public administration programs in Asia. *Teaching Public Administration*, 39(2), 210-226.
- [32] Santos, B. (2017). Improving urban planning information, transparency and participation in public administrations. *International Journal of E-Planning Research*, 6(4), 58-75.
- [33] Zeleti, F.A., Walsh, G.S., Ojo, A., & Mulligan, E. (2021). A case of the governance of digital technology in tax administration. *ACM International Conference Proceeding Series*, 298-307.
- [34] Gil-Garcia, J.R., & Martinez-Moyano, I.J. (2007). Understanding the evolution of e-government: The influence of systems of rules on public sector dynamics. *Government Information Quarterly*, 24(2), 266-290.

- [35] Vogl, T., Seidelin, C., Ganesh, B., & Bright, J. (2020). Smart technology and the emergence of algorithmic bureaucracy: Artificial intelligence in UK local authorities. *Public Administration Review*, 80(6), 946-961.
- [36] European Union (2002). *eEurope 2005*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A124226>.
- [37] Digital economy and society index report 2020 – digital public services. (2020). Retrieved from <https://ec.europa.eu/digital-single-market/en/digital-public-services>.
- [38] Yegorov, I.Yu., & Gryga, V.Yu. (2019). Comparative analysis of the availability of digitalization indicators in Ukraine and other Eastern Partnership countries. *Statistics of EU*, 3, 56-62.
- [39] The digital economy and society index (DESI). (2021). Retrieved from <https://digital-strategy.ec.europa.eu/en/policies/desi>.
- [40] Digital agenda of Ukraine – 2020 (“Digital agenda” – 2020): conceptual framework (version 1.0). (2016). Retrieved from <https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf>.
- [41] Sus, L., & Onychuk, M. (2019). Functioning of state participating banks at the market of bank services of Ukraine. *Scientific Horizons*, 4(77), 67-76. doi: 10.33249/2663-2144-2019-77-4-67-76.

Сучасні тенденції цифрової трансформації у діяльності органів публічної влади

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Анотація. Цифровізація діяльності органів публічної влади – процес, спрямований на покращення доступу до товарів та послуг. Необхідність спрощення доступу до послуг, зокрема, державних, стимулювання економіки, чому може значно посприяти цифрова трансформація, зумовлює актуальність цього дослідження. Мета статті – проаналізувати сучасні тенденції цифрової трансформації у системі державного управління і діяльності органів публічної влади. У ході дослідження було використано загальнонаукові методи, зокрема аналіз та синтез, а також метод порівняння. Було розглянуто напрямки підвищення ефективності прийняття управлінських рішень органами публічної влади за допомогою використання інформаційно-комунікаційних технологій та цифровізації. Обґрунтовано, що активізація процесів використання новітніх інформаційних технологій при забезпеченні різноманітних процесів органами публічної влади визначає початок формування власної української моделі цифровізації публічного управління. Цифрова трансформація державного управління визначена інструментом вирішення проблем суспільства, що здатний забезпечити значну економію державних витрат, від чого виграють не лише адміністрація, а й громадяни, щоденні потреби і турботи яких опиняються в центрі стратегій державного управління. Було доведено ефективність наслідків переведення послуг для громадян у цифровий формат, зокрема полегшенню доступу до них та їх використання. Було визначено необхідні умови для успішної цифрової трансформації

Ключові слова: цифрове громадянство, цифровізація державного управління, електронний уряд, публічне адміністрування, цифровий доступ