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MODERN HYBRID MODELS OF GOVERNMENT ORGANIZATION MANAGEMENT IN THE CONTEXT OF UKRAINE DIGITAL TRANSFORMATION

СУЧАСНІ ГІБРИДНІ МОДЕЛІ УПРАВЛІННЯ ДЕРЖАВНИМИ ОРГАНІЗАЦІЯМИ В КОНТЕКСТІ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ УКРАЇНИ

This work presents a comprehensive analysis of modern approaches to public administration in the context of digital transformation. Key challenges faced by Ukraine governmental structures are examined, including insufficient financial autonomy, weak institutional frameworks, and a lack of qualified personnel, particularly in small communities. The work emphasizes the importance of adapting traditional management models to successfully leverage modern technologies such as big data, artificial intelligence, and blockchain. Existing hybrid management models, which combine elements of classical bureaucratic approaches with modern digital tools, are highlighted and analyzed. In particular, the focus is on the e-Government model, aimed at simplifying citizens' access to public services, reducing bureaucratic processes, and increasing transparency. International examples of successful digital solutions, especially from Estonia and Singapore, are highlighted to offer specific recommendations for adapting these models to Ukrainian realities. However, risks such as digital inequality, integration complexity, and cost are noted. The research results demonstrate that digital transformation requires profound changes in management approaches, particularly through the implementation of flexible, decentralized models and data integration platforms, utilizing e-Government, Smart Governance, SOA, and Cloud-First models, which accelerate the adaptation of governmental organizations to change and improve the quality of service delivery. Each proposed model has its advantages and limitations, which leads the author to recommend a combined approach to their application for maximum efficiency. In conclusion, the successful digitalization of public administration in Ukraine requires a comprehensive approach, including infrastructure modernization, staff skill development, integration of best international practices, and the involvement of vendors with effective digital solutions. The implementation of modern hybrid management models can become a key tool in overcoming existing barriers and advancing Ukraine toward more efficient and flexible public administration.

Key words: *public administration, hybrid models, digital transformation, digitalization, e-Government, Smart Governance, Cloud-First, service-oriented architecture (SOA).*

В даній роботі проведено всебічний аналіз сучасних підходів до державного управління в умовах цифрової трансформації. Розглянуто ключові виклики, що постають перед державними структурами України, зокрема через недостатня фінансову автономію, слабку інституційну базу та брак кваліфікованих кадрів, особливо у малих громадах. Робота підкреслює важливість адаптації традиційних моделей управління для успішного використання сучасних технологій серед яких великі дані, штучний інтелект і блокчейн. Виділено та проаналізовано існуючі гібридні моделі управління, які поєднують елементи класичних бюрократичних підходів із сучасними цифровими інструментами. Зокрема, акцент зроблено на моделі електронного урядування (e-Government), яка покликана спростити доступ громадян до державних послуг, скоротити бюрократичні процеси та підвищити їх прозорість. Виділені міжнародні приклади успішного впровадження цифрових рішень, особливо досвід Естонії та Сінгапуру, що допомагає запропонувати конкретні рекомендації щодо адаптації цих моделей в українських реаліях. Проте зазначені ризики, в першу чергу пов'язані з цифровою нерівністю, складністю інтеграції і їх вартістю. Результати дослідження демонструють, що цифрова трансформація потребує глибоких змін підходів до управління, зокрема через впровадження гнучких, децентралізованих моделей і платформ для інтеграції даних, використовуючи моделі e-Government, «Smart Governance», SOA, Cloud-First, які сприяють пришвидшенню адаптації державних організацій до змін і покращенню якості надання послуг. Кожна з запропонованих моделей має свої переваги та обмеження, що дозволяє автору рекомендувати комбінований підхід до їх застосування для досягнення найбільшої ефективності. Підсумовуючи успішна цифровізація державного управління в Україні потребує комплексного підходу, який включає модернізацію інфраструктури, підвищення кваліфікації кадрів, інтеграцію найкращих міжнародних практик та залучення вендорів з ефективними цифровими рішеннями. А застосування сучасних гібридних моделей управління можуть стати ключовим інструментом у подоланні існуючих бар'єрів та просуванні України до більш ефективного і гнучкого державного управління.

Ключові слова: *державне управління, гібридні моделі, цифрова трансформація, діджиталізація, e-Government, Smart Governance, Cloud-First, сервіс-орієнтована архітектура (SOA).*

Formulation of the problem. Digital transformation presents new challenges for government organizations, requiring adaptation to a rapidly changing environment. Traditional management models are proving to be insufficiently effective in addressing modern tasks related to the implementation of digital technologies, shifting public demands, and the growing volume of data. Therefore, there is an increasing need to develop hybrid models that combine classical management approaches with innovative technologies, enabling more efficient processes in public administration, reducing overall costs, and improving the quality of public service delivery.

Analysis of recent research and publications: The issues of defining the essence, characteristics, advantages, and disadvantages of hybrid management models that have contributed to the development of digital transformation processes in public administration have been examined by the following international experts: Heeks R. [1], Osborne S. [2], Castells M. [3], Mintzberg H. [4], Meijer A. [5], Kim G. [6], Kitchin R. [7], Moore J. F. [8], Erl T. [9], Ubaldi B. [10], Bates A. W. [11], Zwattendorfer B., Stranacher K., Tauber A., Reichstädter P. [12]. However, one of the unexplored issues is the study of the integration of modern hybrid models into public administration processes.

The purpose of the article is to analyze modern hybrid models of government organization management in the context of digital transformation, to identify the advantages and challenges of implementing such models, and to provide recommendations for their effective application based on international case studies.

Results of the research: In the modern context, digital transformation is becoming a key factor in the development of not only the private sector but also public administration. The rapid implementation of advanced technologies, including artificial intelligence, blockchain, big data, and cloud solutions, is changing the way government bodies interact with citizens, businesses, and each other. Government organizations face the need for a radical shift in their management approaches to meet the demands of the digital technology market by leveraging technological innovations to enhance efficiency, transparency, and the quality of services.

However, the challenges of digital transformation in the public sector are complicated by the inertia of traditional bureaucratic systems, which are often unable to quickly adapt to dynamic changes. Classic management models based on rigid hierarchies, standard procedures, and risk minimization are not always effective in the context of modern needs, which require flexibility, fast response times, and innovative solutions. As a result, there is a growing need for new, more adaptive management approaches that combine the strengths of traditional management models with the potential of digital tools. In response to these challenges, hybrid management models for government organizations are emerging. These models combine elements of traditional bureaucratic management with modern digital technologies such as process automation, big data analytics, and cybersecurity. They enable government organizations to be more flexible, quickly respond to external changes, and manage resources more efficiently. Therefore, analyzing the essence of such models will not only highlight their potential for improving the efficiency of public administration but also contribute to the development of new approaches for adapting government organizations in Ukraine to the digital environment.

Let consider the essence of modern hybrid models of management of state organizations, referring to the original sources of these models, see table 1.

According to Table 1, the identified contemporary hybrid models of public sector management reflect various approaches to optimizing government processes, and their analysis reveals significant differences and similarities between them. Heeks R. proposes an e-government model that focuses on simplifying access to public services via the internet and automating processes, which helps reduce bureaucratic procedures. In contrast to Osborne S. public-private partnership model, which is geared toward fostering innovation through collaboration with the private sector, Heeks R. model places more emphasis on government control over existing processes. At the same time, Osborne S. model enables faster digital transformation by utilizing private resources, fostering innovation, though it also depends on private interests. Castells M. suggests a networked organization model that involves decentralized management through distributed structures, differing from the centralized approach of Heeks R. e-government model, which leans towards greater state control. Castells M. model is better suited for situations requiring flexibility and quick responses to changes, as network technologies allow for more efficient integration of various departments and partners into a unified system. Mintzberg H. proposes an adaptive model aimed at quickly responding to external changes. Unlike Heeks R. model, which focuses on digitizing existing processes, the adaptive model allows public institutions to be more flexible and implement innovations as needed. In this context, Mintzberg H. model is more «alive» and dynamic,

Table 1

The essence of modern hybrid models of management of state organizations

№	The authors	The name of the hybrid model	The essence of the hybrid model
1	Heeks R.	e-Government Model	The e-Government model involves the use of information technologies to provide public services to citizens, businesses, and other government institutions. It facilitates access to government services, reduces bureaucracy, and improves process efficiency.
2	Osborne S.	Public-Private Partnership Model in Digital Transformation (PPP)	The public-private partnership model involves collaboration between the public and private sectors to develop, finance, and implement digital transformation projects. The public sector gains access to the innovations and technologies offered by the private sector, while private companies benefit from government support and stability.
3	Castells M.	Network Organization Model	The network organization model operates on distributed network structures, enabling the implementation of decentralized management technologies. This approach effectively applies digital tools for communication, information exchange, and coordination between different departments and partners.
4	Mintzberg H.	Adaptive Management Model for Public Sector Innovations	The adaptive management model is focused on quickly responding to external changes through innovative solutions. This model enables public institutions to rapidly adopt new technologies and approaches to enhance efficiency and flexibility in processes.
5	Meijer A.	Smart Governance Model	The Smart Governance model is based on the use of big data and analytical tools to make informed management decisions. This approach ensures transparency, efficiency, and speed in the decision-making processes of public institutions.
6	Kim G	DevOps Model	The DevOps model in public administration integrates development (Dev) and operations (Ops) teams to create a more efficient, flexible, and fast system for delivering services and solutions. This model focuses on seamless collaboration between the development and operations stages to reduce the gap between them.
7	Kitchin R	Data-Driven Governance Model	The Data-Driven Governance model involves using data as the foundation for decision-making in public administration. Large volumes of data are collected, analyzed, and used to improve management processes.
8	Moore J. F.	Digital Ecosystems Model	The digital ecosystems model in public administration focuses on creating an integrated system where different government institutions, private companies, and public organizations collaborate to achieve common goals through digital platforms.
9	Erl T.	Service-Oriented Architecture (SOA) Model	SOA in public administration involves creating flexible systems where different services interact through standardized interfaces. Each service can operate independently while easily integrating with others through standardized data exchange protocols.
10	Ubaldi B.	Open Data Platform Model in Public Administration	The open data platform model provides free access to data stored by government agencies for citizens, businesses, and researchers. This approach creates more transparent government processes and opens new opportunities for innovation.
11	Bates A. W.	Digital Education Model for Civil Servants in Public Administration	This model involves creating digital platforms for the training and professional development of civil servants through online courses and training. It ensures continuous professional education that can be scaled and adapted to the needs of different levels of civil servants.
12	Zwattendorfer B., Stranacher K., Tauber A., Reichstädter P.	Cloud-First Model in Public Administration	The Cloud-First strategy prioritizes the use of cloud solutions for data storage and processing, allowing government organizations to manage resources and data more efficiently.

* formed based on the source [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]

whereas Heeks R. model is structured and less flexible. Meijer A. «Smart Governance» model stands out by relying on big data and analytical tools for decision-making. Compared to Castells M. networked organization model, which emphasizes decentralization and collaboration, Meijer A. focuses on data

for centralized control, which poses a risk of over-reliance on data and technologies, while Castells M. network approach is more resilient to technological failures. Kim G. DevOps model focuses on collaboration between developers and operations teams, enabling rapid change implementation. Compared to the «Smart Governance» model, which relies on big data, the DevOps model is more flexible and geared toward continuous optimization of existing processes. Kitchin R. Data-Driven Governance model focuses on using large volumes of data as the basis for decision-making, differing from models that emphasize collaboration with the private sector, such as Osborne S. public-private partnership, where the emphasis is on innovation through partnerships, while the data-driven model prioritizes accuracy and speed of decisions achieved through deep data analysis. Compared to Heeks R. e-government model, which automates service delivery, Kitchin R. model offers a more proactive approach–management is not only optimized but also anticipates developments based on identified data trends. Moore J. F. digital ecosystem model is also interesting in terms of integrating various participants–government, the private sector, and civil society. Compared to Castells M. networked model, which decentralizes management at the organizational and structural levels, Moore J. F. model focuses on more integrated collaboration between sectors through shared digital platforms. This creates a synergistic effect as all participants work within one system but increases the complexity of management due to the need for coordination among multiple actors. Erl T. service-oriented architecture (SOA) model is a technical model based on creating flexible systems through standardized interfaces, allowing individual services to operate independently while integrating with others, providing scalability and adaptability similar to Kim G. DevOps model, where the focus is also on rapid change through continuous integration. However, SOA is more focused on technological architecture, while DevOps encompasses not only technical but also management collaboration between teams. Ubaldi B. open data platform model emphasizes transparency by providing free access to government data for citizens, businesses, and researchers, creating new opportunities for innovation and increasing trust in government but also requiring a high level of data security and protection. Compared to Kitchin R. Data-Driven Governance model, where data is used for internal management processes, the open data platform focuses on external interaction and democratization of information. Bates A. W. digital education model focuses on training civil servants through digital platforms. This strategy is primarily aimed at improving professional qualifications in the context of digital transformation and complements other models, such as DevOps, where it is essential for teams to constantly improve their skills. Digital education is a necessary tool for implementing any other model, as effective management is impossible without well-prepared personnel. The «Cloud-First» model by Zwattendorfer B., Stranacher K., Tauber A., and Reichstädter P. prioritizes the use of cloud technologies, providing high flexibility and reducing infrastructure maintenance costs, making it crucial for large government organizations. Compared to Erl T. service-oriented architecture (SOA), cloud technologies are more scalable and allow for storing vast amounts of data without the need for complex internal systems.

A comprehensive analysis suggests that each model has its advantages and limitations depending on the context of its application. Combining different models can provide more balanced and effective governance; however, it is important to avoid excessive reliance on a single strategy or technology. Ultimately, the success of implementing any model depends on the ability to adapt to the specific environment in which it is applied, as well as the level of managerial training and technological infrastructure. After analyzing contemporary hybrid models of public sector management, it is appropriate to consider the most valuable models that effectively impact digital transformation in the public sector.

Let take a look at the features of the electronic government model (e-Government) in government in Fig. 1.

According to Figure 1, the e-Government model is an important tool for modernizing public administration, aimed at digitizing interactions between the government and citizens. However, its implementation has both advantages and challenges that are important to consider when integrating this model into public management systems. One of the key aspects of e-Government is the automation of public services, which significantly simplifies the processes of interaction between citizens, businesses, and the government.

Analyzing the international experience of implementing this model in Estonia and Singapore demonstrates how centralized platforms, such as SingPass or X-Road, provide access to a wide range of government services online, improving convenience and transparency in government processes and positively impacting citizens' trust in the government. However, implementing these technologies requires significant financial resources and sufficient time for adaptation. Digital inequality is a serious challenge in many

Fig. 1. Features of the e-Government model in public administration

**formed based on the source [1]*

countries, including Ukraine, where a significant portion of the population may lack internet access or the necessary digital skills to use such services, potentially leading to social stratification, excluding those who are not proficient with modern technologies from accessing basic public services. The e-Government model significantly increases the speed of request processing and reduces bureaucracy in public administration processes, with the use of electronic signatures and automated data processing, as implemented in Finland through the Suomi.fi system.

At the same time, the experiences of countries like Estonia and Singapore show that for the successful implementation of e-Government, it is essential to ensure the inclusivity and accessibility of technologies, as well as to integrate advanced solutions for data protection and the uninterrupted operation of systems. Ukraine «Diia» service is a prime example of e-Government, which has already significantly simplified citizen interaction with the government. Through «Diia» citizens can access administrative services online, store electronic versions of documents, register businesses, and pay taxes, bringing Ukraine closer to the e-Government standards already in place in Estonia and Singapore. However, based on international experience, «Diia» could be further enhanced by implementing the following elements: 1. e-Residency, like in Estonia, which would allow foreigners to open and manage businesses in Ukraine remotely; 2. expanding digital voting, similar to i-Voting in Estonia, allowing citizens to vote in elections via the internet; 3. a single platform for managing all government services, akin to Singapore SingPass, providing access to an even greater number of services through a single entry point; 4. integration with private services based on Estonia X-Road, allowing secure data exchange between public and private organizations.

Thus, e-Government in Ukraine, through the «Diia» platform, has already become an important step in the modernization of public administration, but further development and integration of international practices will make this service even more efficient and secure for citizens and businesses.

Let us consider the features of the «Smart Governance» model in public administration in Fig. 2.

As shown in Figure 2, the main goal of the «Smart Governance» model is to optimize management processes, involve citizens in decision-making, reduce corruption risks, and ensure greater efficiency of pub-

Fig. 2. Features of the «Smart Governance» model in public administration

**formed based on the source [5]*

lic institutions. When analyzing examples of international experience in applying this model, it is worth noting that South Korea demonstrates successful integration of IoT for monitoring infrastructure and security, aligning with the concept of «smart» governance in Ukraine. In the Netherlands, programs like Amsterdam Smart City also actively use IoT and artificial intelligence to manage transport and environmental resources. However, compared to the experience of these countries, Ukraine approach to «Smart Governance» faces challenges of uneven access to technology, which becomes a key issue in ensuring equal opportunities for citizens. Additionally, high dependence on technological infrastructure, in the event of a failure or cyberattacks, could also pose serious risks, which is a common issue for all countries that actively use digital platforms. Among the key advantages of the «Smart Governance» model are the application of transparency principles and automation, which significantly reduce corruption and increase management efficiency. For example, in Ukraine, the implementation of electronic procurement systems using Big Data is an important step toward ensuring transparency, a practice successfully used in EU countries. At the same time, this approach requires significant financial investments to create and maintain technological infrastructure. However, one of the biggest threats remains the issue of data privacy and security. The example of foreign practices, such as the Copenhagen Solutions Lab in Denmark, shows that data security and privacy must be a priority when implementing smart governance. This model holds great potential for the modernization of public administration in Ukraine. Comparing international examples, Ukraine is already making important strides in this direction, but it needs to improve infrastructure, address the issue of digital inequality, and strengthen data protection. The integration of elements such as collaboration with the private sector and research institutions can also significantly accelerate the digital transformation process, as indicated by examples from South Korea and the Netherlands. The success of implementing «Smart Governance» in Ukraine largely depends on how effectively the resistance to change can be overcome and a reliable technological infrastructure, focused on long-term stability, can be ensured.

Consider the features of the service-oriented architecture (SOA) model in public administration in Fig. 3.

Fig. 3. Features of the service-oriented architecture (SOA) model in public administration

**formed based on the source [9]*

According to Figure 3, the service-oriented architecture (SOA) model in public administration is a crucial tool for modernizing and optimizing public services, enabling the integration of various governmental systems and processes. However, its implementation comes with both significant advantages and considerable challenges that must be addressed when applying it. SOA offers modularity and flexibility, allowing government agencies to quickly adapt to legislative changes and the needs of citizens. Services can be easily added or modified without the need for a complete overhaul of existing systems, which significantly reduces maintenance and development costs for government IT solutions. Additionally, standardized interfaces and protocols provide a high degree of integration between various government structures, particularly between executive authorities, local governments, and citizens, which in turn enhances transparency, accessibility, and efficiency in the delivery of public services. SOA is especially important in the context of e-Government, where the integration of various state platforms, such as «Diia» in Ukraine, is required. Analyzing the experience of the United Kingdom, where the Government Digital Service (GDS) operates through a unified digital platform integrating various departments, shows that such a model can significantly reduce the need for physical interactions between citizens and the state. However, there are serious challenges that cannot be ignored. The high initial costs of implementing SOA are associated with the modernization of outdated IT infrastructure. Many government agencies in countries with legacy database management systems and processes face backward compatibility issues, making the integration of new services more difficult. For example, in Ukraine, a large number of state registers operate on outdated platforms, requiring substantial resources for their integration into SOA. This can be compared to the experience of Australia, where the modernization of the MyGov platform required significant investment, but citizens now have access to all public services through a single interface. The complexity of managing an SOA system is another critical aspect. Each service is an autonomous component, increasing the complexity of coordination between them and requiring constant monitoring and proper management. For instance, in Denmark, under the City Data Exchange, where data is collected from various sources (both public and private), the process of coordinating and monitoring these data sources is

complex and requires a high level of technical support to ensure system performance and continuous operation.

Another important aspect is the human factor, particularly the shortage of qualified personnel to support and develop SOA. In Ukraine, as in many other countries, the transition to SOA requires a strong focus on staff training and the recruitment of IT specialists. Successful examples of modernization, such as in Denmark, demonstrate that investments are needed not only in technology but also in human resources to maintain the new systems. Thus, SOA is a powerful tool for government bodies that can significantly enhance the efficiency and transparency of governance.

Let consider the features of the «State Cloud (Cloud-First)» model in the state administration in Fig. 4.

As shown in Figure 4, the key feature of the «Cloud-First» model is the predominant use of cloud technologies, allowing government agencies to quickly adapt to new challenges. This is particularly important in a rapidly changing world where the needs of citizens and businesses are constantly evolving. Analyzing the interaction of elements within the «Cloud-First» framework reveals that all components of the government system, including various departments and citizens, operate on unified cloud platforms. This not only simplifies data exchange but also ensures real-time accessibility of services, which in turn increases the transparency and accountability of government agencies.

A comparison with traditional models, where data was stored on local servers, shows that cloud architecture allows for faster responses to citizen requests and more effective coordination between departments. However, alongside its advantages, there are also significant drawbacks, including dependence on cloud solution providers, which can lead to a loss of control over data and increase the risk of information leaks. Additionally, issues with data access speed may limit the efficiency of government services, especially in regions with unreliable internet connections.

In Ukraine, the «Cloud-First» model can be successfully applied in various areas, particularly for e-government services, medical data storage, and the modernization of state registries.

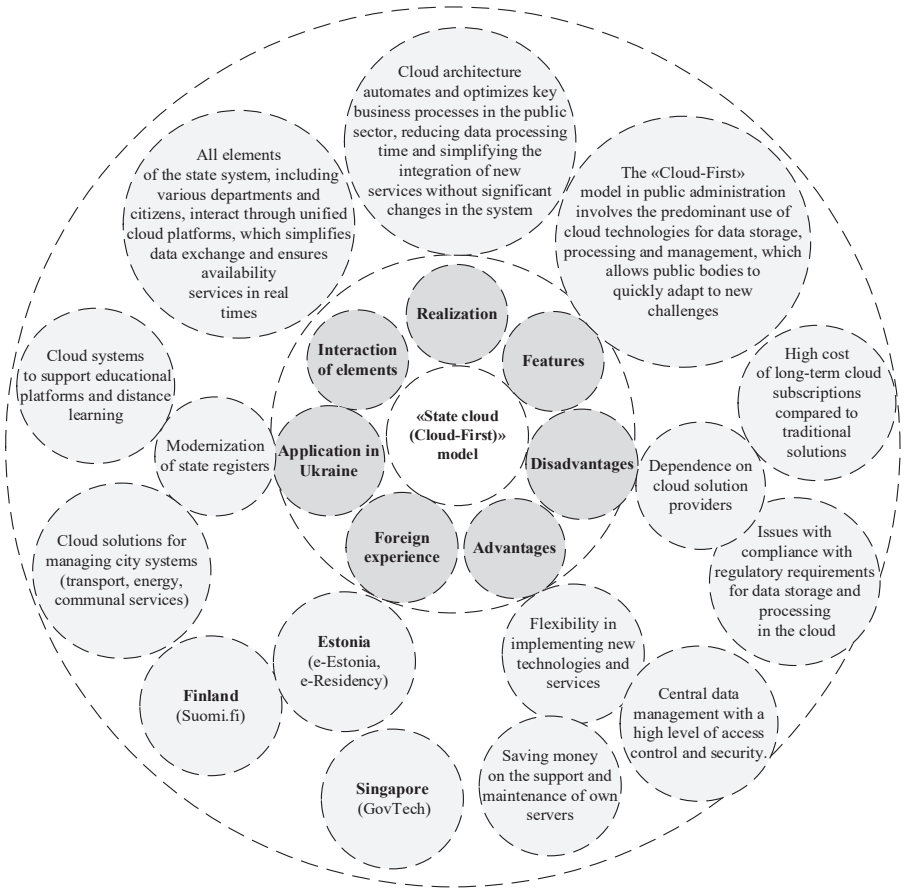

Fig. 4. Features of the "State Cloud (Cloud-First)" model in public administration

**formed based on the source [12]*

International experience, particularly from Singapore, Estonia, and Finland, demonstrates successful examples of implementing the «Cloud-First» approach. In Singapore, cloud technologies have become the foundation for electronic services, while Estonia is notable for its innovative services, such as e-Residency and electronic voting. Finland, with its Suomi.fi platform, offers a wide range of cloud-based services, proving that well-organized cloud solutions can significantly ease citizen access to government services. By studying international experience, Ukraine can find optimal solutions for adapting this model to its own context.

Conclusions. In conclusion, a thorough analysis was conducted on the current challenges and prospects of implementing digital technologies in public administration, revealing that traditional bureaucratic models are unable to function effectively in a rapidly changing technological landscape and require adaptation to modern demands. In response to these challenges, hybrid governance models have been proposed, combining classical approaches with innovative technologies, such as big data, artificial intelligence, and cloud solutions. The focus has been on models like e-Government, Smart Governance, Service-Oriented Architecture (SOA), and Cloud-First, which facilitate the automation of public services and reduce unnecessary bureaucratic processes. However, their successful implementation comes with several challenges, including high costs, reliance on new technological solutions, the need to improve digital literacy, and data protection. It was also noted that Ukraine has already made significant progress towards digitalizing public administration, particularly through the «Diia» platform, which greatly simplifies access to government services.

REFERENCES:

1. Heeks, R. (2006). Implementing and Managing eGovernment: An International Text. Sage Publications Ltd [in English].
2. Osborne, S. (2000). Public-Private Partnerships: Theory and Practice. Routledge [in English].
3. Castells, M. (1996). The Rise of the Network Society. Wiley-Blackwell [in English].
4. Mintzberg, H. (2001). Strategy Safari: A Guided Tour Through The Wilds of Strategic Management. Financial Times Prentice Hall [in English].
5. Meijer, A. (2018). Datapolis: A public governance perspective on «Smart cities». Perspectives on Public Management and Governance, 1(3), 195–206 [in English].
6. Kim, G. (2013). The Phoenix Project. IT Revolution Press [in English].
7. Kitchin, R. (2014). The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences. Sage Publications Ltd [in English].
8. Moore, J. F. (1996). The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems. Harper Paperbacks [in English].
9. Erl, T. (2005). Service-Oriented Architecture (SOA): Concepts, Technology, and Design. Prentice Hall [in English].
10. Ubaldi, B. (2013). Open government data: Towards empirical analysis of open government data initiatives. OECD Working Papers on Public Governance, 22, 1–60 [in English].
11. Bates, A. W. (2022). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. BCcampus [in English].
12. Zwattendorfer, B., Stranacher, K., Tauber, A., & Reichstädter, P. (2013). Cloud computing in e-government across Europe. In International Conference on Electronic Government and the Information Systems Perspective, 181–195 [in English].