





ORIGINAL

Digitalization of public administration: challenges and prospects

Digitalización de la administración pública: retos y perspectivas

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ABSTRACT

Today, digital technologies have already become the basis for many areas of society. Public administration is no exception. The active digitalisation of public administration is a window to new opportunities that can provide society and public authorities with new ways to increase trust and transparency. Global trends, such as the development of artificial intelligence, cloud services and blockchain technologies, are driving changes in the interaction between citizens, businesses and the state. This is the reason for the relevance of this research. After all, the digitalisation of public administration gives rise to new perspectives and challenges that are an integral part of the provision of administrative services in the context of digitalisation. The purpose of the research is to analyse the main concepts of public administration digitalisation and its importance for the information society; to describe in detail the challenges that accompany the digitalisation of public administration; to analyse the prospects and provide recommendations for the development of digital platforms in the public administration of Ukraine. To achieve this goal, we used the following methods of scientific knowledge: general philosophical method, descriptive method, method of system analysis, synthesis, dialectical method, methods of deduction and induction. The findings will serve as a basis for further research, and the analysis of challenges and prospects will form the basis for further improvement of public administration and public service delivery in Ukraine.

Keywords: Digitalization; Public Administration; Digital Technologies; Administrative Services; Digital Platforms.

RESUMEN

Hoy en día, las tecnologías digitales se han convertido ya en la base de muchos ámbitos de la sociedad. La administración pública no es una excepción. La digitalización activa de la administración pública es una ventana abierta a nuevas oportunidades que pueden proporcionar a la sociedad y a las autoridades públicas nuevas formas de aumentar la confianza y la transparencia. Las tendencias mundiales, como el desarrollo de la inteligencia artificial, los servicios en la nube y las tecnologías blockchain, están impulsando cambios en la interacción entre los ciudadanos, las empresas y el Estado. De ahí la relevancia de esta investigación. Al fin y al cabo, la digitalización de la administración pública da lugar a nuevas perspectivas y retos que forman parte integrante de la prestación de servicios administrativos en el contexto de la digitalización. El objetivo de la investigación es analizar los principales conceptos de la digitalización de la administración pública y su importancia para la sociedad de la información; describir detalladamente los retos que acompañan a la digitalización de la administración pública; analizar las perspectivas y ofrecer recomendaciones para el desarrollo de plataformas digitales en la administración pública de Ucrania. Para lograr este objetivo, hemos utilizado los siguientes métodos de conocimiento científico: método filosófico general, método descriptivo, método de análisis de sistemas, síntesis, método dialéctico, métodos de deducción e inducción. Las conclusiones servirán de base para futuras investigaciones, y el análisis de los retos y perspectivas sentará las bases para seguir mejorando la administración pública y la prestación de servicios públicos en Ucrania.

Palabras clave: Digitalización; Administración Pública; Tecnologías Digitales; Servicios Administrativos; Plataformas Digitales.

INTRODUCTION

The twenty-first century is the century when information technology has become an integral part of our lives. This applies to areas ranging from education to government and public administration. Digitalisation, which seemed to be just a trend a few decades ago, is now turning into an essential element of effective management that meets the requirements of the modern world. Undoubtedly, digitalisation opens up a wide range of opportunities to improve the efficiency of government structures and enhance the transparency of existing management processes. Global trends, such as the development of artificial intelligence, cloud services and blockchain technologies, are driving changes in the interaction between citizens, businesses and the state.

In the context of our research, it is worth noting that digitalisation is the introduction of digital technologies into all aspects of government agencies, from the provision of administrative services to strategic decision-making. It is not only about setting up processes in the direction of their automation, but also about creating new management policies and new management models, which in turn are based on the analysis and use of known amounts of data, including artificial intelligence and blockchain technology.⁽¹⁾

Public administration in terms of digitalisation is itself manifested in a well-established system of online voting, the creation and operation of online registers and online platforms for citizen participation in decision-making, and the automation of the state apparatus. In general, these tools, by their very nature, facilitate better access of citizens to a wide range of public services and generally contribute to the transparency of public administration as such, as certain information becomes available in an open format, allowing citizens to control the actions of public authorities and officials. And as an important aspect, such tools help to save financial resources, as automation of routine processes replaces many paid processes.⁽²⁾

In general, different countries on the global stage use the benefits of digitalisation in different ways. Some focus on the development of e-governance, as well as the creation of electronic portals, mobile applications for citizens, and digital registers. An example is Estonia, which was one of the first countries to introduce electronic voting in elections and create a system of 'digital citizenship' that allows receiving services regardless of physical location.⁽³⁾

Some countries are focusing on the use of artificial intelligence and blockchain technologies to help analyse large amounts of data more efficiently, which is important for providing effective public services and predicting future challenges. Blockchain technologies, in turn, ensure data security and protect it from unauthorised access, which is especially relevant in the context of growing cyber threats.⁽⁴⁾

Thus, it is undeniable that the digitalisation of public administration has a number of advantages, which we can immediately attribute to the reduction of corruption risks, simplification of bureaucratic procedures, and significant resource savings as such. In addition, digitalisation contributes to increased transparency: citizens have access to open data on the activities of government agencies, budgets and project implementation. However, it would be a mistake to assume that the digitalisation of public administration does not have any problematic aspects and challenges that accompany such state processes.

Modern realities pose a number of challenges to society and government, which primarily include ensuring cybersecurity, overcoming digital inequality and the need to adapt to rapid change, which often jeopardises all available prospects.⁽⁵⁾ Cybersecurity is an important area given the increased risks of hacker attacks, leakage of confidential data and personal information of citizens. That is why this area of activity requires significant financial investments, constant monitoring and development of reliable data protection systems.

The digitalisation of public administration is not only a challenge but also a unique opportunity for states to improve their efficiency, transparency and accessibility. However, the success of this process depends on the ability of governments to respond adequately to challenges, develop data protection strategies, reduce digital inequality, and invest in digital skills development.⁽⁶⁾

Our research article aims to examine the prospects and challenges of public administration digitalisation, as well as to understand how to act to achieve sustainable progress in this area of public administration. In this regard, the purpose of the research is to analyse the main concepts of public administration digitalisation and its importance for the information society; to describe in detail the challenges that accompany the digitalisation of public administration; to analyse the prospects and provide recommendations for the development of digital platforms in the public administration of Ukraine.

METHOD

Given the purpose of our research and for its direct achievement, we have taken as a basis the following methods of scientific knowledge, namely: general philosophical method, descriptive method, method of system

analysis, synthesis, dialectical method, methods of deduction and induction. Using these methods of scientific cognition in the article, we were able to qualitatively approach the analysis of the digitalisation of public administration and the formulation of theoretical conclusions about the challenges and prospects for further digitalisation of public administration. Moreover, we were able to form a comprehensive view of the use of the latest technologies for the provision of administrative services, outline our own vision of future prospects and provide recommendations for improving the public service delivery system.

First of all, it should be noted that the cross-cutting research method was the general philosophical method, which was used at all stages of the study: from analysing the basic concepts of public administration digitalisation and its importance for the information society to understanding the problematic aspects and prospects associated with active digitalisation. With the help of the general philosophical method, we were able to provide basic recommendations that should be followed in the further use of digital new technologies in public administration.

The next method we used was the descriptive method. We identified the features of digitalisation as such and described the main concepts and meanings of digital platforms. This helped to understand the overall picture of the study and identify important aspects that will be needed in further research. The methods of systematic analysis and synthesis were important in the study, with the help of which we described in detail the challenges accompanying the digitalisation of public administration and analysed the prospects for the development of digital platforms in public administration in Ukraine.

The dialectical method reveals the peculiarities of digitalisation as an important phenomenon. In combination with the systemic analysis method and the general philosophical method, we were able to provide practical recommendations for improving the situation with the use of digital technologies in public administration and better understanding of increasing public trust in government agencies. Using the deductive method, we concluded that the current state of digitalisation of public administration is fraught with certain risks and faces a number of challenges. Using the inductive method, we formulated practically applicable recommendations for solving current problems and further development of public administration in the realities of today.

The use of all methods in a comprehensive manner contributed to the achievement of our research objectives and the preparation of a strong basis for further research and improvement of administrative service delivery within public administration.

RESULTS AND DISCUSSION

Digitalisation of public administration: basic concepts and importance of digital platforms

In general, it should be noted that, by its very nature, digitalisation is a set of changes in the life of society that are directly related to the development of digital technologies. As digital technologies and artificial intelligence are now being actively used, it is only logical that the range of new opportunities for both citizens and public authorities is expanding. If we analyse public administration itself, the use of digital technologies creates a favourable basis for effective access of citizens to the entire range of administrative services. Indeed, it is an effective management tool that helps to improve the efficiency and quality of information provided.

That is why it should be noted that the digitalisation of public administration is a new vector, a new page in the provision of administrative services and social management in general. In general, it is expected that digitalised public administration will have a positive impact on solving many management problems that are quite relevant to modern society and lifestyles, as well as positively contribute to the stability and development of service delivery as such.⁽⁷⁾

In the context of our research, it is worth analysing the importance of public administration in the digital era and how public administration can influence society while integrating digital technologies:⁽⁸⁾

- Firstly, today, given the frantic pace of digitalisation, public administration must take into account modern changes and ensure that all possible ways of using digital goods are used to make administrative services relevant to the modern needs of society and convenient to obtain. Starting from the possibility of obtaining services online to the establishment of digital communication channels, public authorities must adjust their work, and the government must in turn adjust the governance system as a whole and use modern technologies to meet the needs of the public.
- Secondly, public administration supported by the use of modern digital technologies fosters innovation and stimulates economic development as such. Undoubtedly, the government and public authorities play an important role both in the quality provision of administrative services and in creating a potentially favourable environment where existing regulations will meet the realities of today and effectively regulate the processes and relations that will arise in the course of the digitalisation of public administration. This also includes the development of favourable conditions for start-ups that will further improve the public administration system in the potential future, as well as the creation of a framework for digital innovators and entrepreneurs. The government can easily stimulate economic development in areas such as information technology, e-commerce and digital services, as well as create new jobs, thereby expanding the scope of digital technologies.

- Thirdly, public administration, which is supported by the use of modern digital technologies, is crucial to addressing pressing issues such as cybersecurity threats, personal data privacy issues, and the digital divide that exists between citizens. It should be noted that in order to ensure cybersecurity, a clear security policy should be developed that will actively promote the protection of confidential information and the protection of the privacy of the public's rights in the digital sphere.
- Fourthly, with the active digitalisation of public administration, the level of accountability, transparency and trust in public authorities by citizens' increases. It is the latest technologies that provide public authorities and the government with opportunities that were not previously available to increase transparency through ongoing open data initiatives, registries, online platforms and portals, most of which are accessible to every citizen. Moreover, by simplifying the very access of society to relevant information data, public trust is increased and democratic governance itself is ultimately strengthened.

Today, public administration faces a variety of challenges, problematic aspects and promising opportunities. One of the major challenges is the integration of digital technologies into the existing public administration systems. In addition to the demanded changes in the way we work, there is also a need to quickly bring regulations in line with the new realities. At the same time, it remains important for government agencies to understand the specifics of new work formats, etc. In addition, digital transformation can also lead to a change in the way we work from manual to automated and enable digital and integrated work.⁽⁹⁾

However, let's also not neglect the fact that digitalisation is a catalyst for new opportunities and prospects, in particular in terms of increasing trust in public authorities, ensuring better accessibility to public services, and contributing to the improvement of the quality of services provided.

There is no doubt that digitalisation has changed the way we think about public administration and the quality of service delivery, but today people want their administrative needs to be met in an even more efficient way. The desire and behavioural transformation of the community must be accompanied by the ability of institutions to cope with the transformations taking place in society.

Moreover, with each passing day, more and more new tools and ways of delivering public services will be used, and therefore we consider it appropriate to list a few technologies that not only correspond to the concept of digitalisation of public administration, but can also contribute to the strategic improvement of the work of the government and state structures.

1. Tracking the stages of fulfilment of a request for a particular service - since most administrative services in Ukraine are now provided online, it is important to have a function to track each stage of service provision. Thanks to the tracking technology, each new update will be posted on the service, allowing users to be informed about each step of the process in real time. Such capabilities are already available for some services, but in the future, if such capabilities are available for all services, the level of transparency and accountability will be even higher.
2. Data security and document management - refers to the introduction of technologies that will guarantee the security of personal data and its confidentiality. At the same time, such technologies should take into account the latest developments and the latest digital technologies to ensure that data protection is feasible in the face of ever-increasing cybersecurity threats.
3. Working with large volumes of data and investing in infrastructure - this means that every day, government agencies deal with huge amounts of data that need to be stored somewhere. Therefore, the servers must be able to withstand the existing and projected load. Cloud computing solves these problems, but they also require specialist attention.

Characteristics of the challenges accompanying the digitalisation of public administration

As we have pointed out above, public administration in times of digital transformation and digitalisation faces a number of challenges. These challenges do not just halt the development of public service delivery, they create a number of problems that are becoming imperative in terms of government policy and improving public engagement. From cybersecurity and its ongoing threats to the apparent digital divide, public authorities are tasked with proactively addressing complex situations and ensuring fair and truly effective public administration.⁽¹⁰⁾

The most common challenges to the digitalisation of public administration include the following:

1. Cybersecurity threats - as digital public administration evolves, so do various hacker attacks and opportunities to unauthorisedly access personal data and confidential information. Moreover, some state-sponsored actors and various criminal organisations and groups often exploit existing software gaps to gain access to confidential information or simply disrupt service delivery platforms.⁽¹¹⁾ The so-called cyber espionage is quite common. In the wake of Russia's full-scale invasion of Ukraine, such actions have become an additional act of aggression by Russian hackers. As of today, the disruption of important state online platforms is a form of warfare by both sides. Therefore, the issue of ensuring cybersecurity is important not only for the protection of personal data of citizens, but also for state security in general.

It should be noted that in such circumstances, public authorities and the government are obliged to engage relevant specialists who will deal with digital security, monitor the situation and respond to threats in a timely manner. Moreover, financial resources are needed to invest in reliable software and effective cybersecurity measures. Cooperation between government agencies, private sector partners and international allies is also crucial to share threat intelligence and coordinate responses to network events.⁽¹²⁾

It is also important to understand that when considering cybersecurity, we must also take into account the issue of failures and data leaks from government databases, which can potentially lead to serious risks in the future and harm the security of citizens. Whether it is identification numbers, medical records or financial data, the leakage of sensitive information can lead to identity theft, fraud and weakening public trust in government agencies. Of course, the solution to such situations is to improve the legal framework for data protection in order to protect the public from infringements of their right to privacy. It is also important to develop and implement appropriate digitalisation protocols, as well as conduct security audits on a regular basis.

2. The existence of a digital divide. The digital divide itself is a gap between those who have access to digital technologies and those who do not, which exacerbates inequalities in education, employment and economic opportunities. This implies that very often people living in rural areas have limited access to digital services due to the lack of Internet or appropriate gadgets that facilitate uninterrupted access to a range of online services. Often, even with the above, it is difficult to understand how to access online services. This is due to the lack of relevant skills among the older generation in general, which limits their participation in the digital economy and society. As a rule, in such circumstances, people are forced to travel to larger settlements, spend time in queues, etc. to receive services that can be provided online. Lack of access to digital services - from online education and healthcare to e-government services and employment opportunities - can increase social exclusion and impede socioeconomic mobility.⁽¹³⁾

In order to bridge the digital divide, the government is committed to investing in broadband infrastructure, especially in underserved areas, to ensure universal access to affordable and reliable internet connections.

However, this solution alone is not enough. Significant attention should be focused on training in basic skills in using web-based service portals so that everyone can receive services in a simplified way, if the state provides such an opportunity. In summary, we can point out the need for a comprehensive approach to addressing the digital divide, including educational training, expansion of digital service centres, provision of Internet access to rural areas, development and implementation of mobile government solutions, and simplification of services for those who cannot benefit from digitalisation.

3. Issues related to the adaptation of legal acts to the realities of today - in general, it is quite obvious that with technological and digital progress, there will be a need to update the legal framework to fully comply with the current state of affairs. However, unfortunately, the reality requires a better approach, as the development and implementation of updated standards and norms that could comprehensively and efficiently regulate the current situation does not correspond to real opportunities and time costs. As we can see now, the development of digital technologies and their implementation in public administration is far ahead of the work on updating and bringing the regulatory framework into line with the realities. From artificial intelligence and blockchain to biotechnology and autonomous vehicles, new technologies are outstripping the ability of regulators to understand their impact and develop appropriate legal frameworks.⁽¹⁴⁾

That is why an important step is to develop and apply flexible and adaptive regulatory methods that will simultaneously promote innovation, ensure data privacy and security, and, on the other hand, respond in a timely manner to predictable changes. It is important to note that such regulatory methods should be developed with the latest digital technologies in mind in order to fully enjoy the benefits of digitalisation.⁽¹⁵⁾

Based on the above, it is important for the government to find a balance between the development of innovative technologies and ensuring their high-quality legal regulation in order to further promote the development of the economic situation and create a truly competitive digital economy. It is important for the government to understand that legal regulation should accompany innovation, be a kind of security guarantor, but not deter it or prevent investment. Excessive legal regulation should not become a tool for abuse of power or violation of privacy, and should be carried out in accordance with the rule of law and the rule of law.⁽¹⁶⁾ The government should adopt a risk-based regulatory approach to encourage appropriate innovation, while mitigating potential risks and hazards and promoting economic growth and public satisfaction.

Prospects and recommendations in the aspect of the development of digital platforms in public administration of Ukraine

In addition to the above-mentioned problematic aspects and challenges that arise in the course of digitalisation of digital services, there are a number of advantages and prospects, as well as new, previously

unavailable opportunities for both the public and the state itself in the course of digitalisation of public administration and development of digital platforms. These prospects include the following:

1. Improvement of the situation with accountability and transparency, which is further developed in two directions, namely the development of the open data programme and the use of digital technologies for active public participation in enjoying the benefits of public administration digitalisation. Let us consider these aspects separately:

- An open data programme, by its very nature, provides for the public to receive data in a machine-readable, standardised format. In simple terms, this includes data on public spending, infrastructure, public service delivery, demographics, public health, and environmental information. It also includes data on the performance of public bodies, including the government, the main areas of activity, etc. This format of openness helps to improve the situation with trust in public authorities, and also obliges public authorities to take appropriate responsibility for their decisions and the steps taken to make them.⁽¹⁷⁾

It is important to note that in such circumstances, entrepreneurship and innovation as such are more actively stimulated. With the help of open data, digital platforms for providing various services can be improved faster, and the economic situation and economic potential of the state will improve in this regard. A striking example to confirm the above is the development of mobile applications that provide timely and up-to-date information on public transport schedules that can be tracked in real time.⁽¹⁸⁾

It is also worth noting that in this case, success is possible if several important factors are taken into account. First and foremost, it is the availability of data, its quality and accessibility, as well as the existence of appropriate policies and infrastructure to support it. The government is responsible for monitoring and timely disclosure of data, ensuring its truthfulness and reliability. Moreover, the formats for accessing such data should be convenient for the public.⁽¹⁹⁾ Under such conditions, the level of trust in government agencies will be increased, and an appropriate level of accountability and transparency will be ensured.

- Use of technology to facilitate public participation and to establish active interaction between government agencies and society. This is necessary to receive feedback on the services provided from the public. Such feedback can influence the development of future government policy and the level of administrative service delivery. Moreover, it can help eliminate problematic aspects of public administration and decision-making processes. By engaging the public in this way, the government can increase transparency, accountability, and responsiveness.⁽²⁰⁾

Various digital platforms, tools, forums, mobile apps, or separate questionnaires on websites can be used to solicit feedback. This will help to reach more people and encourage dialogue between society and the state. An important advantage of this format and the use of technology to obtain feedback is the democratisation of decision-making and the expansion of opportunities for the public to participate in governance. It is worth noting that such an integrated approach can improve the quality and efficiency of public services by involving the public in the development, implementation, and evaluation of public projects.⁽²¹⁾ For example, the government can use crowdsourcing platforms to gather public opinion on urban planning projects, budget allocation, or improving public services. However, it should be noted that the desired outcome will also be achieved if the platforms are well designed and invested in outreach efforts so that the public knows and understands the benefits of their participation.⁽²²⁾

2. Improving the level of service delivery, which is manifested in two ways. Firstly, by improving the level of service delivery, and secondly, by adhering to a personalised approach to service delivery that will be primarily focused on the individual. Let us consider these aspects separately:

- Increasing the level of service delivery and improving its efficiency with the help of digital tools. In turn, digital tools open up a wide range of opportunities for setting up automated public administration processes and reducing routine processes, paperwork, and simplifying the service delivery procedures themselves (). The digitalisation of the services themselves increases the speed of service delivery and meets the deadlines for their provision, thereby ensuring the timeliness and accuracy of the services received. The most common example of timeliness and efficiency through digital tools is the introduction of public service portals, which guarantee citizens access to a wide range of services and information online, from the process of applying for applications and permits to paying taxes and receiving state benefits.

This approach can simplify a number of administrative approval processes and allow for a more effective response to changes and innovations in line with public sentiment.⁽²³⁾

It is also worth noting that digital tools allow governments to collect and analyse data more efficiently, which contributes to better decision-making and resource allocation.⁽²⁴⁾

- Adherence to a personalised, human-centred approach to service delivery - such mechanisms are increasingly being used by governments around the world to meet the needs of all people in general and the unique preferences of each individual. Through the use of artificial intelligence, big data and design principles, service delivery can be tailored to the respective needs of the user and the recipient of services (). This will increase the overall satisfaction of the public with service provision. An example of personalised services is the use of predictive analysis to predict social needs and provide proactive intervention. In addition, it should be noted that personalised services and a people-centred approach can help to develop appropriate interventions that are tailored to the specific needs of vulnerable groups, helping the government to address inequalities and promote social inclusion.⁽²⁵⁾

3. Data-driven decision-making, which further influences the development and implementation of better policies, and is important for predictive analysis to improve governance outcomes. In more detail, we will consider these aspects separately:

- Developing and implementing better policies, making critical decisions based on data. In the context of public administration, big data refers to government databases, various social networks, and other digital sources containing information about various aspects of society, the environment, and the economy.

By analysing such large amounts of data, government agencies will be better able to address potential challenges and develop more flexible and comprehensive policies to better meet the needs of society. In addition, big data analytics can help governments identify emerging issues and predict future trends, enabling proactive rather than passive decision-making. Within this area, the focus should also be on analysing and monitoring the market, social media, media and news in order to track public sentiment and identify problematic issues.

- Use predictive analysis to improve governance outcomes - this statement refers to the active use and engagement of statistical algorithms, machine learning tools and techniques to understand future trends and events based on available data. With this, and in combination with all of the above, it will help the government and other public agencies to use predictive analytics and further optimise resources for improved administrative service delivery. For example, the government can use predictive models to forecast demand for public transport services, forecast demand for patients in healthcare facilities, identify individuals at high risk of homelessness or unemployment, and take targeted measures to then implement targeted interventions.

CONCLUSIONS

To summarise, digitalisation is the introduction of digital technologies into all aspects of public institutions, from the provision of administrative services to strategic decision-making. It is not only about setting up processes in the direction of their automation, but also about creating new management policies and new management models, which in turn are based on the analysis and use of known amounts of data, including artificial intelligence and technology.

Today, given the frantic pace of digitalisation, public administration must take into account modern changes and ensure that all possible ways of using digital goods are used to make administrative services meet the modern needs of society and are convenient to obtain.

It is important to summarise that public administration supported by the use of modern digital technologies promotes innovation and stimulates economic development as such. This also includes the development of favourable conditions for start-ups, as well as the creation of a base for digital innovators and entrepreneurs. Moreover, public governance that is underpinned by the use of modern digital technologies is crucial to addressing pressing issues such as cybersecurity threats, personal data privacy and the digital divide that exists between citizens. Moreover, the active digitalisation of public administration increases the level of accountability, transparency and trust in public authorities by citizens.

The most common challenges to the digitalisation of public administration include the following: cybersecurity threats - as digital public administration develops, various hacker attacks and opportunities to unauthorisedly access personal data and confidential information are also subject to change. In such circumstances, it is incumbent on public authorities and the government to engage relevant professionals to deal with digital security, monitor the situation and respond to threats in a timely manner.

The solution to such situations is to improve the regulatory framework for data protection, develop and implement appropriate digitalisation protocols, and conduct security audits on a regular basis; the digital divide - in order to bridge the digital divide, the government must invest in the development of broadband infrastructure, focus on training in basic skills in using web portals with service delivery, develop and implement solutions for mobile government, and simplify the receipt of services

The main prospects for the digitalisation of public administration in Ukraine include the following: improving

the situation with accountability and transparency, which is reflected in two ways, namely the development of an open data programme and the use of digital technologies for active public participation in enjoying the benefits of public administration digitalisation; improving the level of service delivery, which is reflected in two ways. Firstly, in improving the level of service delivery, and secondly, in adhering to a personalised approach to service delivery that will be primarily human-centred; decision-making based on an array of data, which further influences the development and implementation of better policies, and is also important for predictive analysis to improve governance outcomes.

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