

Impact of digitalisation on the justice system: Challenges of administrative justice

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Abstract. The relevance of this study is driven by the incomplete digitalisation of justice and the constant need to update data on the effectiveness of digital tools in justice. The purpose of the study was to summarise the existing approaches to the digitalisation of administrative justice presented in the scientific literature, law enforcement practice, regulations, and analytical reports. The methodological framework of the study included the systematic review method, which involved comparative legal, historical-legal, systemic-structural, and axiological approaches. Based on the results of the systematic review of scientific studies, it was found that digitalisation of court proceedings demonstrates patterns of development and widespread approaches to the introduction of electronic document management, submission of electronic evidence, and remote participation in various legal systems. The analysed history of research on this subject showed that the stages of development of digital tools in the judicial sphere are linked to their regulatory consolidation and adaptation. The analysis of scientific literature helped to establish that the relationship between the components of digital justice, specifically, the means of filing documents and the organisation of case consideration, is key. The study found that the current scientific discourse discusses the effects of digital solutions on the exercise of procedural rights, assesses the value of digitalisation for effective, accessible, and transparent justice, and identifies challenges and threats associated with the transformation of conventional procedures. The findings obtained are of practical significance for scholars, lawmakers, judges, and lawyers in the further development and implementation of digital tools for administrative justice

Keywords: judicial system; procedural rights and obligations; information technology; big data; artificial intelligence

Introduction

The relevance of the topic of reforming the administrative justice system in Ukraine following the requirements of the Association Agreement between Ukraine, on the one part, and the European Union, the European Atomic Energy Community and their Member States, on the other part (2014), is determined by the development of a secure information and telecommunications infrastructure for the judiciary. To this end, the introduction of secure digital communication and data transmission networks is becoming increasingly widespread in Ukraine (Limanté & Moskvityn, 2024). Another relevant area of digital technologies' impact on administrative justice is the development of judicial information coding and the creation of catalogues of unified systems of electronic documents in the field of administrative justice. These developments allow systematising information, minimising the timeframe of court proceedings, etc. Thus, digital technologies in administrative proceedings will help to reduce the time and facilitate citizens' access to judicial protection. Legal relations in various spheres of life are regulated by digital technologies. It is significant that this process has not spared

the justice sector. Thus, "among the prominent areas of application of artificial intelligence (AI) by 2030, the sphere of justice is proposed, among other things", says a report developed by Stanford University (Artificial Intelligence and Life in 2030, 2016).

Notably, in December 2018, the European Commission on the Efficiency of Judicial Proceedings, as part of the Council of Europe, approved the European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems (2019). The document sets out five principles that must be observed when using AI in judicial proceedings: non-infringement of fundamental human rights; non-discrimination, namely the prevention of any discrimination between individuals or groups of individuals; quality and security of processing court decisions and data in a secure technological environment; the principle of "user control", which means that all procedural aspects, capabilities, and functions of AI should be set out in clear language that follows Article 6 of the Convention for the Protection of Human Rights and Fundamental Freedoms (1950) –

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transparency, impartiality, and fairness. These principles are fully relevant to the field of administrative justice, which is also tending towards global digitalisation.

The provisions of Law of Ukraine No. 2073-IX “On Administrative Procedure” (2022) stipulate a special rule according to which “if a decision in a case can be made based on electronic documents in a machine-readable format and/or data from national electronic information resources, an administrative act may be adopted automatically in cases prescribed by law” (part 2 of Article 69). The Code of Judicial Ethics (2013) also prescribes in Article 16 that “the use of artificial intelligence technologies by a judge is permissible if it does not affect the independence and impartiality of the judge; does not concern the evaluation of evidence; does not concern the decision-making process; does not violate the requirements of the law”.

There have already been attempts to summarise the effects of digitalisation on the justice system in the scientific discourse. One of the most comprehensive for its time was the study by P.M.A.R. Correia *et al.* (2024), which covered the literature for 2001-2022 and analysed the types, goals, factors, and results of digital transformations in the justice sector. The researchers identified contextual, institutional, and individual preconditions for digitalisation. As a result, four areas for future research were proposed: expanding the methodological framework, strengthening the theoretical basis through the concepts of public administration, developing comparative studies between countries, and evaluating public policy in the field of digital transformation of justice. V. Pyrohovska *et al.* (2024) focused on the benefits, challenges, and prospects for the development of e-justice. The content analysis of previous studies helped the researchers to conclude that the challenges worthy of attention included technical inequality, cyber threats, and excessive formalisation. As a prospect, the researchers proposed to develop the functionality of e-judicial platforms using artificial intelligence and blockchain technologies. In a review study, P. Nazarenko *et al.* (2024) systematised the current prospects for digital transformation of the Ukrainian legal system. The researchers concluded that Ukraine’s legal system is not yet sufficiently adapted to the pace of digitalisation, which is manifested in legislative gaps and unresolved ethical and jurisdictional issues that do not enable the integration of AI into the national justice system. At the same time, according to O. Kozakevych and N. Prus (2025) and A. Petrovskyi *et al.* (2025), who reviewed the use of AI in the judiciary in a number of countries, digitalisation would expedite the consideration of cases.

Since the digitalisation of the judiciary is not yet complete not only in Ukraine but also in countries that have integrated digital tools into justice earlier, the scientific discourse needs to be constantly updated with data on the outcomes of applying various digitalisation models, which constituted the purpose of the present study. The methodological framework of this study was a systematic review method, which helped to summarise the existing approaches to the digitalisation of administrative justice presented in the scientific literature, law enforcement practice, regulations, and analytical reports. The selection of sources was based on the criteria of their thematic relevance, credibility, and scientific value, covering publications from 2015-2025 with a focus on the most relevant Ukrainian studies. The systemic analysis employed comparative legal, historical legal,

systemic-structural, and axiological approaches that enabled a comprehensive study of the development of digital tools in the judicial sphere, a comparison of international practices, and an assessment of their effects on justice. The logic of the material presentation was based on the subject principle, which facilitated a consistent analysis of the impact of digitalisation on administrative justice.

Concept of digital technologies in justice

The transition from conventional to electronic judicial proceedings using modern information and communication technologies is undoubtedly a crucial part of the comprehensive development of Ukraine as a legal, democratic state, and the development of the judiciary in the era of digital transformation of the state and society specifically. With this in mind, the issue of e-justice is of particular relevance and significance for the development of the administrative justice institution. On this basis, Ukraine is included in the EU’s Digital Europe Programme until 2027. The key purpose of the programme is to accelerate economic recovery and digitalisation. Ukraine’s participation in this programme will allow it to become part of the EU’s Digital Single Market (Ukraine joined the Digital Europe Programme, 2022).

E-justice in Ukraine is one of the most promising forms of its implementation, which is aimed at optimising and modernising the national judicial system using electronic technologies. The development of this institution is driven by the need to integrate existing information and communication technologies into all legal institutions of the Ukrainian state. Digital justice is the administration of justice using information and telecommunication technologies. This includes not only electronic document management and online meetings, but also the availability of electronic court cases, the use of artificial intelligence, etc. Thus, the principal idea of e-justice is that information technology enables participants in the process and the court to interact with each other in the digital space. According to O. Barabash (2023), many elements of people’s lives are gradually becoming digitalised. Additionally, according to L. Kalashnikova (2023), society and its structural components have been transformed under the influence of IT technologies, thereby determining the transition from the post-industrial to the digital stage of its development.

According to I. Mishchenko, the digitalisation of the judicial system, particularly through the use of AI to analyse and systematise court decisions, identify differences in practice and promote its unification, is a key tool for improving the quality of court decisions and ensuring their predictability (Yasynska, 2019). V. Antonyuk (2021) emphasised that the introduction of certain systems for analysing and controlling court decisions using AI would substantially improve the Ukrainian legal system and increase its predictability; the introduction of technical solutions using AI will enable the application of the law following the fundamental principles of law. Such a technical solution would avoid the influence of political conditions or other external factors that negatively affect the unity and independence of the judiciary and create a sense of inconsistency in decision-making. In this regard, the opinion of Supreme Court Justice J. Bernazyuk (2024) is also correct: “The task of collecting, analysing, and summarising judicial practices is on the agenda. In this case, it is AI that can substantially optimise these labour-intensive processes to improve the efficiency of the Ukrainian judicial system”.

The modern digital world is quite diverse. Researchers have focused on various information technologies used on the Internet, including artificial intelligence and machine learning, the Internet of Things, blockchain, Big Data, cloud computing, smart systems and devices, digital twins, social networks, modern bioengineering technologies, cybersecurity systems, etc. The technological features of modern e-justice include the introduction of not only automated programmes and systems that are typical for domestic e-justice, but also modern digital technologies (blockchain, artificial intelligence systems, biometric data, personal identification, etc.). Notably, modern digital justice is also a new remote form of interaction between the court and individuals as parties to a court case, including remote access to the court and remote participation in court hearings; a new way of interaction based on the exchange of digital data; a virtual, paperless form of court proceedings and court record keeping, based on an electronic case file. The distributed ledger system (e.g., blockchain) is of immense value in this process. According to researchers, “a distributed registry system is a new approach to creating distributed databases (each of which is accessed through a single interface), where there is no single control centre and where each node independently compiles and records updates to the registry” (Voronkova, 2022).

Artificial intelligence is also gaining momentum in the justice sector. The European Union Act on Artificial Intelligence (2024) defines AI as “a computer system designed to operate with varying levels of autonomy and that can be adaptive after deployment, and which, to achieve explicit or implicit goals, draws conclusions about how to generate outputs such as predictions, content, recommendations, or decisions that may affect a physical or virtual environment based on the input it receives”.

The current legislation of Ukraine stipulates that artificial intelligence is a function of artificial consciousness represented by a system of algorithms created and controlled by it, which ensures self-learning according to available information, acquired knowledge, rules, laws of society, and its experience, the creation of new knowledge on this basis to fulfil human instructions, as well as the ability to conduct self-diagnostics and justify decisions made by it (Strategy for the development of artificial intelligence in Ukraine, 2023). This is the advantage of AI as a set of mathematical algorithms over the “living” intelligence of a judge. In modern conditions, the robotisation of the judicial process is manifested in holding court hearings via video conferencing using modern messengers, in replacing a judge or the judiciary as a whole, courtroom clerks, and judicial assistants with robots.

Admittedly, an algorithm itself is not capable of making “subjective” decisions, but the quality of its decisions depends on how it is designed and what data is included in it. Furthermore, complex artificial algorithms study the relationship between various information and the behavioural patterns embedded in it through a multi-layered structure and develop their unique decision-making rules that are usually incomprehensible to humans. This feature of artificial intelligence has significant implications, which were clearly demonstrated in the case of *State v Loomis* (2016), when a criminal who had entered into a plea deal with the investigators and was expecting a suspended sentence was sentenced to six years in prison and five years of strict supervision based on the conclusion of the automated COMPAS system that he was likely to recidivate (Cantens, 2024).

In this case, it is noteworthy that the system used was, firstly, not fully suited to the purposes of decision-making in the judiciary, as it was modelled for the executive system, for consideration of early release; secondly, it can identify groups of high-risk offenders, but is unable to assess the risk of recidivism of an individual; thirdly, the reliability of the algorithm’s reports has been questioned by researchers who noted that COMPAS scores coincided with actual recidivism in only 20% of cases; and finally, the system is owned by a private firm that refused to disclose the mechanism of the algorithm, which made it impossible to understand what led to this conclusion (Cantens, 2024).

The defendant attempted to appeal the court’s decision and went all the way to the state Supreme Court, which dismissed his appeal despite the “flaws” in the reliability of the algorithm, but noted that automated systems should not be the only justification for a decision. Therewith, it is worth pointing out that the United States is considering the possibility of using the capabilities of artificial intelligence not only for the judiciary, but also for ordinary citizens, so that they can predict the outcome of a case, receive systematic resources on their case and arguments for their position, just like a judge (Chesterman *et al.*, 2023).

This example demonstrates the serious risk that society faces in the digitalisation of justice. The risks associated with bowing down to algorithms and placing too much trust in their results are evident. For example, in China, there are concerns regarding artificial intelligence making wrong judgements (Honcharuk, 2019). J. Yao and P. Hui (2020) stated that the use of artificial intelligence in justice for judicial decision-making poses a series of risks: “the weakening of freedom of discretion, judicial discrimination, judicial dictatorship, protection of privacy, etc., which is undoubtedly contrary to the rule of law”.

The foregoing allows distinguishing several models of artificial intelligence: predictive (allows determining the probability of a certain event), prescriptive (allows determining the most suitable actions to achieve the intended goal, i.e., optimises decision-making), and generative (works with databases that have a more complex algorithm of actions, which allows generating human language and entering into a dialogue with a person) (Artificial Intelligence Act, 2023). Thus, a considerable number of problems can be pointed out in the field of artificial intelligence in justice. Sometimes these problems are accompanied by risks for the entire legal system of Ukraine, provoked by cyber threats and cyber-attacks. For instance, in December 2024, cyberattacks on state registers of Ukraine took place – hacker attacks on the websites of the National Information Systems (NIS) and the Ministry of Justice of Ukraine (BBC Ukraine, 2024).

Thus, O. Barabash’s (2023) opinion that “the digitalisation of justice does not solve all the problems in the judiciary, and therefore the judicial reforms launched by Ukraine should not be limited to the digitalisation and informatisation of justice, but should serve as a catalyst for further positive changes in the judicial system and improve the quality of the exercise of rights and freedoms by Ukrainian citizens” is correct. The use of artificial intelligence systems should not diminish the humanistic content of justice, which should be based on justice rather than mathematical algorithms. Otherwise, the principle of humanism of justice can be replaced by transhumanism, which destroys the very essence of law, which comes from a person and is aimed at protecting their

rights and freedoms. For these reasons, the term “predictive justice” is used, wherein information technology should play a supporting role. This type of justice does not fit into the existing procedural system in the national legislation, but such ideas have become more widespread in foreign countries. Predictive justice means the use of algorithms by which persons seeking judicial protection can calculate and assess the prospects of going to court, which are determined based on the established judicial practices. Justice is an indisputable principle of human civilisation, reflecting the natural law nature and humanistic content of law.

Application of digital technologies in the judicial system of foreign countries

In legal doctrine, the issue of digitalisation is in the spotlight. Researchers point out that digitalisation offers great opportunities. It can lead to the emergence of new business models, new competitors, better and cheaper products and services (Sorensen, 2018). By adopting European standards for data protection in communication networks, researchers are exploring alternative ways of governance, such as standardisation or promotion of certain social norms, and extending beyond conventional legal actors and mechanisms, admitting that there is no one-size-fits-all solution to adapt law and governance to modern technologies (Jozwiak *et al.*, 2016). At the same time, it is emphasised that digitalisation poses not only a legal regulation problem, but also a methodological problem for international legal science overall (Altwicker, 2019).

Singapore was one of the first countries to introduce digital technologies into the judicial system. In 2000, the country launched an electronic filing and issuance system. Later, in 2011, the process of implementing the Integrated Electronic Court System (EFS), a specialised electronic document management system, began. This system enables automatic verification of compliance with the requirements of the procedural law of an electronic document received by the court, as well as its further forwarding for processing (Barabash, 2022). Singapore’s integrated electronic court system ensures the maintenance of an “electronic case” in court. The introduction of such a system has led to a reduction in costs and an increase in the efficiency of court staff.

Another country where digital technologies have penetrated almost all spheres of public life is China (notably, China is famous for its prominent achievements in the field of artificial intelligence). In the 2020s, the introduction of digital technologies into the judicial system of this country intensified, although this process began many years ago. Presently, China is one of the world’s leaders in the use of digital technologies in the judiciary. It was during the COVID-19 period that positive results of digitalisation in civil, administrative, and criminal proceedings emerged. China has effectively started implementing an e-justice system.

The digitalisation of all types of judicial proceedings in China is carried out in several areas. Thus, since 2017, the so-called Internet courts have been operating in this country. First, such a court was opened in Hangzhou, then in 2018 – in Beijing and Guangzhou. Applications to such courts are filed via the Internet, and proceedings are conducted only online. According to preliminary assessments of the effectiveness of such courts, experts have noted such positive aspects as reduced consideration time, reduced paperwork (Honcharuk, 2019).

In China, the blockchain stores an ever-growing list of ordered records called blocks. Each block contains a timestamp and a link to the previous block. A blockchain record is recognised as evidence in a particular court case (Honcharuk, 2019). China has registered a judicial platform based on artificial intelligence. Its purpose is to help judges improve their efficiency and provide people with easier access to legal services. The platform is an AI-powered legal infrastructure at the national level that is built on massive, authoritative, and high-quality judicial data. To date, the platform has collected 320 million pieces of legal data and materials, including legal documents, court decisions, cases, and legal opinions. It also has the capabilities to understand legal terms, reason logically, search and generate content after learning. It is noted that these innovations will improve the efficiency of judges’ work, such as searching for legal documents and selecting cases, as well as meeting the legal demand of the public (Yin, 2024). However, it is also worth pointing out the substantial drawbacks of the digitalisation of all types of court proceedings in China, namely the significant restriction of the legal rights of litigants.

Another highly developed “e-state” in the world is Estonia. A. Petrovskiy *et al.* (2025) argue that virtually every decision in a case in court proceedings in this country will be made by an electronic judge. However, such a procedure can only be extended to small-scale court cases. In Germany, the digitalisation of administrative proceedings has its specific features, particularly in the area of gradual regulation of electronic administrative proceedings to remove barriers to electronic communication with administrative courts (Kopp & Schenke, 2018) by modernising existing legal provisions and adopting new regulations. The Administrative Procedure Act of the Federal Republic of Germany (1976) introduced §55a and §55b, which enabled the use of electronic documents in administrative proceedings alongside the usual paper-based documents; §55a allows for electronic document flow between the court and the parties to the proceedings; §55b prescribes the maintenance of electronic procedural acts; the introduction and use of electronic communication depends not only on the availability of federal regulations, but also on the acts of the federal states, which as of 2025 have not been adopted in all federal states. Electronic communication between courts and persons involved in a case (§55a) takes markedly less time and has a rational basis. Electronic case management also contributes to the acceleration and optimisation of the process. This is manifested, specifically, in the fact that both the court and the participants in the process have quicker and easier access to the electronic court case materials compared to a large number of folders with paper acts.

Thus, the analysis of positive practices in the digitalisation of justice suggests that this process is carried out in most countries in different ways. Certain countries are implementing electronic record keeping and document management, while others are taking bolder steps by integrating artificial intelligence into all stages of the judicial process. This diversity of approaches demonstrates the absence of a universal model for the digital transformation of judicial proceedings and, at the same time, indicates the potential for comparative analysis and adoption of best practices. It is valuable not only to technically improve processes, but also to maintain a balance between technological efficiency and

human rights guarantees. It is this balance that should guide further justice reform in the digital era.

Key areas of digitalisation of the Ukrainian judicial system

As noted, digital technologies in the modern world transform the judicial system and change the principles of its functioning. Presently, it is impossible to imagine improving any area without modern technologies and information, without the widespread introduction of elements of the Fourth Industrial Revolution (Akhmetov *et al.*, 2018), without discussing the provision of information through modern digital technologies, risk sharing, and ways to encourage responsible innovation in high technology (Keren-Paz *et al.*, 2019). The digitalisation of public administration affects the relationship of an individual with public authorities, local governments, and other persons authorised to perform administrative functions. This process is of particular significance in the context of the challenges faced by states today. Rapidly changing circumstances, such as the COVID-19 pandemic, the economic crisis, or a major environmental disaster, require finding new balances and building resilience to crises. With the spread of the new virus and the adoption of relevant government measures in 2020, the COVID-19 pandemic affected almost all aspects of public life, including administrative relations arising from the exercise of subjective public rights, the performance of duties by individuals, as well as the collection of taxes, the provision of social assistance, and permits in the field of economic activity (Luchenko, 2022). Online meetings, electronic documents, and automated systems help to reduce bureaucratic procedures and speed up the judicial review of administrative cases.

The fundamental constitutional principles of Ukrainian justice are the principles of accessibility, equality, impartiality, and independence (Bielov & Bielova, 2025). However, these principles are changing under the influence of digital technologies. On the one hand, digital technologies make justice more accessible and convenient and reduce the amount of resources and time spent. Thanks to the latest technologies, it is possible to quickly get online access to various court operations: filing documents, remote participation in court hearings, as well as access to documents and cases without personal presence in court. On the other hand, digital inequality is growing and the risk of bias in digital algorithms is increasing. This is reflected in unequal access to digital technologies. For instance, there are categories of citizens who do not have knowledge of information technology: the elderly, citizens from remote villages, low-income citizens, and disadvantaged families who do not have access to new electronic applications.

In the context of digital transformation, it is essential to consider not only technological progress, but also the legal aspects of its implementation in modern everyday life. The state must develop a clear legal framework that will regulate the use of digital technologies in judicial proceedings to guarantee the protection of the rights of Ukrainian citizens and, at the same time, maintain fairness in access to justice. In other words, it is vital to strike a balance between digital justice and conventional methods of proceedings, considering that the latter more effectively account for a massive number of factors that affect court decisions: social status, nationality, place of residence, criminal record, etc.

Cybersecurity, digital literacy, and uniform standards of judicial work are also essential issues in the field of e-justice, so that the judicial system can truly become modern and efficient for any category of citizens. On 5 October 2021, three subsystems (modules) of the Unified Judicial Information and Telecommunication System (UJITS) – the Electronic Cabinet, the Electronic Court, and the video conferencing subsystem – officially began to operate in Ukraine. In this area, the State Judicial Administration of Ukraine has developed a procedure for video conferencing during a court hearing with the participation of the parties outside the courtroom (Decision of the High Council of Justice No. 1845/0/15-21, 2021). Thus, it was envisaged to use the EasyCon system or other means available to the court and litigants to ensure that court hearings are held via video conferencing (Tatulich, 2022).

New digital technologies in administrative justice can be divided into certain groups. The first group of digital technologies is related to the exercise of the right to judicial protection – filing an administrative claim electronically. Currently, administrative plaintiffs can choose the form of the document to be sent to court. These documents may be submitted in hard copy or as an electronic document signed with an electronic signature. Using the capabilities of digital technologies, a document can be sent electronically to the court.

The second group of digital technologies relates to the right of a person to receive documents from the court in electronic form. By using the Internet, litigants are entitled to receive copies of court acts executed in the form of electronic documents, except for information to which access is restricted following the current legislation of Ukraine. Information may be communicated to litigants by posting relevant information on the official website of the judicial authorities on the Internet.

The third group of digital technologies is related to the court's assessment of electronic evidence. The court assesses compliance with the procedural form of obtaining a document as a means of proof. The legal force of electronic documents in administrative proceedings is given by confirmed authority, authenticity, and mandatory details. If electronic evidence is submitted to the court with a violation of its integrity, a situation may arise where the information contained in this document is distorted or a special procedure for recording a legal fact is violated, the electronic evidence may be invalid. Considering the above, it is worth considering the range of processes covered by digitalisation in the field of administrative justice in Ukraine.

Firstly, it is e-justice itself. From now on, there is no need to come to court in person, stand in queues, or waste time filling out paperwork – all documents can be submitted online in a few minutes. This is especially useful for those who live in remote locations or cannot come in person, e.g., due to health reasons. Court hearings can be held via video conferencing, and thus anyone from anywhere with an Internet connection can take part in the process. Digital databases help to quickly find the necessary documents and track the progress of a case, prevent the loss of crucial details or the entire case, and reduce the risk of corruption. Automated systems check papers, correct mistakes and expedite the work of judicial officers. As a result, court proceedings take less time and it becomes easier to get a fair decision. However, there are also major challenges to e-discovery, e.g., in civil proceedings. A critical obstacle is the issue of insufficient training and

education of judges and judicial staff to work with the latest digital technologies, which can lead to low efficiency of the use of electronic systems (Parasyuk *et al.*, 2025).

Secondly, the digitalisation of administrative justice is impossible without artificial intelligence and trial automation. The latest digital algorithms help to analyse judicial practices, predict decisions, automatically search or sort various documents and regulations, and, based on current legislation, analyse evidence, which considerably expedites the court decision-making process. Admittedly, this requires mechanisms to control artificial intelligence and its algorithms to avoid unreasonable decisions made with its help. According to K. Popovych (2023), some countries are testing AI-based programmes that can offer optimal court decisions, but so far, their use is still limited due to the risks of legal errors. It is vital to remember that AI should be used to complement the work of judges, not replace them. The human factor continues to be essential in making final decisions, especially in complex and unusual cases.

Thirdly, digitalisation of administrative proceedings is possible through remote court hearings. Videoconferencing allows litigants to attend court hearings remotely, considering the territorial inaccessibility and physical capabilities of citizens. However, this may pose a risk of violating privacy rights and requires reliable technological solutions from the state. For example, during the COVID-19 pandemic, remote meetings became standard practice in many foreign countries. The transition to the online format was necessary to ensure the safety and continuation of the work of the courts, but this process has encountered some challenges. One of the principal problems was the difficulty of verifying the identity of participants. Without adequate verification mechanisms, there is a risk that the wrong person may attend a court hearing, which could affect the course of the trial and its fairness (Zilka *et al.*, 2022). There are also problems with ensuring confidentiality. Whereas previously, hearings were held in closed rooms, in strict confidentiality, now they are held in an open digital space where sensitive data can be extremely vulnerable. This puts the protection of the personal information of litigants at risk. For example, if the video conferencing platform is not sufficiently secure, one may face interception or leakage of personal data. However, according to M. Sydorenko and O. Chepik-Tregubenko (2025), despite the progress made in judicial reform, further development of the system should focus on overcoming corruption risks, strengthening control over the activities of judges, and implementing exacting standards of justice. The researchers emphasised that the efficiency of the judiciary is only possible with a comprehensive approach that combines legal, organisational, and financial instruments following democratic norms and international obligations. They view e-justice as a promising stage of system modernisation that can improve access to justice and its speed. At the same time, the fulfilment of this potential is currently limited due to regulatory shortcomings, technical barriers, low levels of public trust, and the slow pace of digital change.

Fourthly, digitalisation of administrative justice is possible through the creation of electronic archives and registers. Digital archives and registers in administrative proceedings are necessary for convenient and fast work of courts. Electronic archives and registers allow storing all documents electronically, which eliminates the need to manage paperwork. When all the data is in one place and easily accessi-

ble, it expedites the search for the information required. A judge or lawyer can quickly find the documents they need without having to search through massive paper archives. Undoubtedly, such systems make the judicial process more transparent: all documents are recorded and stored, and no one can simply “lose” essential materials. All this helps to keep track of the progress of cases – one can see the progress of a particular stage of the court process. It also reduces the probability of errors or manipulation of personal data. Digital archives and registers make the judicial system more modern and accessible to all parties to the judicial process, help the court to work faster, and make it easier for citizens to access domestic justice.

Fifthly, the digitalisation of administrative justice is possible through blockchain technology. Blockchain is a technology that helps protect data from forgery and makes the judicial system more transparent and reliable. Records in the blockchain cannot be changed or deleted, which is vital for storing evidence in a court case. For example, the aforementioned Estonian experience shows that this country is already using blockchain in the judicial system to record and store information about court proceedings, ensuring their transparency and security.

Thus, an interim conclusion can be drawn that digitalisation affects the key principles of the justice system and introduces valuable changes in their implementation. Specifically, it is worth focusing on the key ones:

1) Accessibility of domestic justice. Digital services can reduce the time and money that Ukrainian citizens spend on litigation. However, this will raise the problem of “digital inequality”, as not all Ukrainian citizens have access to the Internet or have sufficient knowledge to use online platforms. To make justice accessible to all, free consultations and training courses on digital culture and literacy should be provided.

2) Principle of equality before the law. Automated systems can reduce the number of errors caused by human error. However, these algorithms are not perfect either. They can be biased if they are based on unreliable data. That is why it is crucial that the work of artificial intelligence in the judicial system is transparent and that no discrimination is allowed. In the US, for instance, there have already been cases where algorithms analysing criminal cases have shown racial bias.

3) Principle of independence and impartiality of the court. Artificial intelligence can influence judicial decision-making, which calls into question their impartiality. Judges should control the operation of digital tools and make final decisions personally, factoring in all the circumstances of the case, so as not to be influenced by machine algorithms.

Thus, digitalisation is having a significant impact on the judicial system of Ukraine, leading to significant changes in the way Ukrainian citizens interact with justice, as well as in the work of the judiciary itself, based on the constitutional principles of equality, independence, and accessibility. Modern digital technologies open new horizons for simplifying and expediting the judicial process, making justice more accessible. Judicial acts, lawsuits, and applications can be filed through online systems, which greatly simplifies the process for plaintiffs and defendants, lowering the barrier to going to court.

Challenges and prospects for digitalisation of administrative justice in Ukraine

It is also prudent to focus on the main problems and risks of the digitalisation of justice. According to Ukrainian

researchers, the relevance of transformation in the field of administrative proceedings and the justice system as a whole is driven by a series of factors, including the complication of interagency cooperation and coordination of law enforcement activities; costly conventional judicial and law enforcement activities (human, material, financial and other resources); increasing use of information and communication technologies by criminal communities, terrorist organisations, radical religious groups, and other groups.

Thus, digital transformation faces several major challenges that impede its full implementation in the Ukrainian judicial system. One of the principal obstacles in this process is that digitalisation is uneven. Trials can take place at different speeds in different courts. Some courts are actively using online platforms to file lawsuits and take part in court hearings, while others still rely on paper documents. This inconsistency can create problems in the interaction between courts, leading to delays and unequal access to justice. To address this problem, it is necessary to develop unified digitalisation standards for the entire judicial system of Ukraine and to allocate resources equally so that all Ukrainian citizens can enjoy the same opportunities, regardless of territorial jurisdiction.

The purpose of digitalisation is to process a large amount of personal data, including information about Ukrainian citizens, their property, and financial status, which makes the judicial system vulnerable to cyberattacks and personal data leaks. This can lead to a loss of trust in the judicial system, violation of privacy, and manipulation of personal information. To prevent such negative phenomena, modern methods of personal data protection should be applied: encryption, multi-level authentication, and constant monitoring of personal security, etc. It is also essential to develop mechanisms for legal protection and compensation in case of a confidential information leak. Strict standards of personal data protection and effective control over their observance are the basis for the safe use of digital technologies in the Ukrainian judiciary.

Successful digital transformation requires addressing the lack of digital literacy among both Ukrainian citizens and judicial officers. Many people face challenges when using online platforms to file applications, follow the progress of a court case, or take part in court hearings. In addition, some members of the judiciary may lack the knowledge necessary to work with new digital tools, which slows down the process and increases the probability of miscarriages of justice. To address this problem, there is a need for more frequent training for all participants in the judicial process, providing programmes that cover both basic computer and internet skills, and specialised knowledge related to court platforms and electronic documentation.

Apart from the problems that impede the effective digitalisation of administrative justice, it is worth pointing out the promising areas for the development of digital justice in Ukraine, which include several crucial aspects. Specifically, this includes the creation of secure digital platforms. Thus, V. Turov (2025) argued that one of the key steps in the digitalisation of Ukrainian justice is the creation of safe and reliable online platforms for filing lawsuits, exchanging documents, holding online meetings, and other operations. These platforms must be protected from cyberattacks, data leaks, and falsification of documents. To this end, it is essential to use modern technologies such as encryption and two-factor authentication to ensure the security of a person's interaction with the judicial system.

In the context of the digitalisation of judicial proceedings, special attention should be paid to the protection of personal data of Ukrainian citizens. Judicial systems process confidential information that may affect the reputation or safety of all participants in the judicial process. Clear rules should be developed to regulate how and where personal data can be used, and measures should be put in place to protect it from unauthorised access. Transparency in the use of data and clear responsibility for its protection are also crucial aspects of increasing the effectiveness of the digitalisation of the judicial process.

Additionally, to adapt to digital justice in Ukraine more successfully, it is necessary to actively improve the digital literacy of Ukrainian citizens. This process includes learning how to use digital platforms, submit documents to the court via the Internet, take part in online hearings, and protect their rights in the digital space. This approach will help to expedite processes and make justice accessible to a wider population, especially those who have not previously used digital technologies.

According to O. Petriv (2024), the use of algorithms in the judicial system can also increase its efficiency. However, it is worth pointing out the transparency of these algorithms. Algorithmic decisions, e.g., when distributing cases or analysing evidence, should be understandable to both the parties and society at large. This helps to increase trust in the Ukrainian judicial system and reduce the risks of biased or non-transparent methods. The transparency of algorithms can be ensured through the development of standards and open methods for their operation.

For the successful functioning of digital justice, it is necessary to amend the current legislation to meet the modern requirements of digitalisation. Presently, most legal provisions do not factor in the specifics of the digital environment, e.g., the authorship of electronic documents, online identity verification, or the status of electronic court decisions. Legislative changes, such as the recognition of electronic signatures and the rights of litigants to take part in proceedings remotely, will help create a legal framework for the operation of digital platforms and other technologies in the justice system. Moreover, digital technologies make data storage structured and accessible, enabling quick retrieval of information and verification of its relevance and accuracy. However, it is vital to understand that digitalisation is not merely a transition to the latest technologies, but also a solution to many existing problems in the Ukrainian judicial system. Primarily, the agenda should include strengthening cybersecurity to protect data from possible cyber threats and personal data leaks. It is also crucial to increase digital literacy among Ukrainian citizens to enable them to use new services and platforms effectively. Finally, it is critical to create unified electronic standards for the national justice system, which will harmonise the digitalisation process and adapt the Ukrainian justice system to the requirements of the new reality, ensuring its accessibility, transparency, and efficiency for all Ukrainian citizens. However, only a comprehensive approach to solving the pressing problems of the national justice system will enable the creation of a truly effective and secure digital judicial system in Ukraine. On the other hand, this will require coordinated work of public authorities, technology companies, and higher education institutions of Ukraine, as well as clear coordination of their actions in the field of digital tools implementation.

Conclusions

The findings of a systematic review of scientific research established that the digitalisation of public administration and justice is one of the determining factors in the modernisation of the modern legal system. The prevailing opinion in the scientific discourse is that digital technologies contribute to increasing the efficiency, transparency, and accessibility of justice, including administrative justice, which is especially relevant in the period of active digital transformation of the public sector in Ukraine. An analysis of the scientific literature identified the key advantages of introducing digital tools, such as reducing the time for case consideration, reducing costs, increasing convenience for participants in the process, and reducing the bureaucratic burden on the judicial system. Therewith, such aspects of the topic as the legal legitimacy of electronic evidence, ensuring procedural equality in the digital environment, standards for cyber protection of personal data, and the ethical implications of using artificial intelligence in litigation are still understudied. The analysed history of research suggests that a reasonable integration of digital technologies into the administrative justice system is possible only with a comprehensive approach that includes regulatory harmonisation with European standards, development of digital infrastructure, increasing digital literacy of judges and participants in the process, and ensuring public trust in e-justice.

In summary, the systematisation of scientific positions suggests that electronic administrative justice not only promotes the principles of efficiency, openness, and fairness, but also requires adequate regulatory, organisational, and ethical support. Further research on this subject should focus

on a comparative analysis of foreign practices, investigating the effects of digital platforms on the guarantees of the rights of participants in the process, and assessing the risks associated with the automation of court decisions. All these aspects are crucial for the development of a national model of digital justice that meets both technical capabilities and the requirements of the rule of law. At the same time, it should be understood that the expansion of the use of artificial intelligence in the administration of justice should primarily be an auxiliary opportunity for judges, but not a complete replacement for them. Information technologies can identify problems of uniform application of legal provisions based on the analysis of a massive volume of court decisions. However, the responsibility for the judgement should rest solely with the judge.

Promising areas for further research include the development of a regulatory framework for e-justice, analysis of the impact of digital technologies on procedural guarantees, study of the admissibility of electronic evidence, assessment of the risks of automating court decisions, and a comparative study of international practices in the digitalisation of justice.

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Вплив цифровізації на систему правосуддя: виклики адміністративного судочинства

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Анотація. Актуальність дослідження обумовлена незавершеністю цифровізації судочинства та постійною потребою в оновленні даних щодо ефективності застосування цифрових інструментів у правосудді. Метою роботи було узагальнення наявних підходів до цифровізації адміністративного судочинства, представлених у науковій літературі, правозастосовній практиці, нормативно-правових актах та аналітичних звітах. Методологічною основою дослідження став метод системного огляду, що включав порівняльно-правовий, історико-правовий, системно-структурний та аксіологічний підходи. За результатами системного огляду наукових досліджень було встановлено, що цифровізація судочинства демонструє закономірності розвитку та спільні підходи до впровадження електронного документообігу, подання електронних доказів і дистанційної участі у різних правових системах. Проаналізована історія досліджень даної тематики показала, що етапність розвитку цифрових інструментів у судовій сфері пов'язана з їх нормативним закріпленням та адаптацією. Аналіз наукової літератури допоміг встановити, що взаємозв'язок між компонентами цифрового судочинства, зокрема засобами подання документів та організацією розгляду справ, є ключовим. Встановлено, що в сучасному науковому дискурсі обговорюється вплив цифрових рішень на реалізацію процесуальних прав, оцінюється ціннісний зміст цифровізації для ефективного, доступного та прозорого правосуддя, а також ідентифікуються виклики та загрози, пов'язані з трансформацією традиційних процедур. Отримані результати мають практичне значення для науковців, законотворців, суддів та адвокатів у подальшому розвитку та впровадженні цифрових інструментів адміністративного судочинства

Ключові слова: судова система; процесуальні права та обов'язки; інформаційні технології; великі дані; штучний інтелект