

Legal Tech: Unravelling the nature and purpose of modern law in the digital era

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Abstract. The purpose of the study is to investigate how computer technology is used in legal practice. The primary techniques employed in this article are systematization, which made it possible to place the results in a logical order for understanding and reproduction of the researched, as well as analysis and synthesis for a literary review of thematic literature and the determination of the main scientific trends reflected in it. The study's findings demonstrate how computer technology has improved the convenience, speed, visualization, and predictability of legal practice. The research's practical significance lies in the fact that computer technology, specialized software, and mathematical techniques must be incorporated into law enforcement and law-making processes in order to collect, store, and process legal information in a way that best enables the provision of various legal services. In conclusion, digital computer technologies are developing in the legal field in a number of areas, including the automation of standard legal services, the use of online legal services, the digitalization of public services and their online provision, the shift to an e-justice system, modeling of legal solutions based on artificial intelligence, and more. The automation of many social processes is gaining momentum, including in the legal profession

Keywords: computerisation; Legal Tech; computer technology; digitalisation; legal services

Introduction

In the professional daily life of a law firm, the topic of digitalisation is gaining increasingly more importance. The introduction in Europe of the so-called special lawyer-e-mailboxes (beA), as well as the sustainable development in the field of Legal Tech and Law Tech, are just some of the signs illustrating that lawyers will sooner or later be replaced by digital tools and technologies. The first step in this direction may already be to start legal education and provide the next generation with more digitised content to prepare them for the upcoming digital revolution. Student initiatives in Europe, such as Munich Legal Tech or Frankfurter Legal Tech Lab, are already demonstrating that there is high interest in

this from the student community (Anjum *et al.*, 2018). Students who would already be exposed to technology content like Legal Tech in their studies would greatly simplify their professional lives. Moreover, in this way, they preceded the older generations with important technological skills.

Firstly, legal technologies imply all things technological. In a narrow meaning, this specifically refers to software that facilitates the work of lawyers. Thus, Legal Tech describes technologies designed to improve and simplify the day-to-day processes of a law firm. These include, for example, legal databases or time-tracking software. Furthermore, programs that can automate already repetitive processes constitute an

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extension of Legal Tech. Another stage of development includes programs that can edit documents automatically, for instance, read, understand, and process through interpretation. Legal software such as eDiscovery or Document Review are already capable of this (Greenstein, 2022b).

Currently, the Faculty of Law in Europe is still quite old-fashioned and has very little orientation in the digital world of work or technological innovation. As such, the time-tested PowerPoint presentation is generally still the only digital medium in use and it has long been outdated. Topics such as legal project management or legal technology are mentioned in the margins at best or usually need to be developed independently. This is largely conditioned by the fact that digitalisation is still a new area for many professors and teachers, and they, accordingly, have almost no competencies in this area. The same is true for legal training (ReFa). They are the ones who will most of all deal with the office organisation in the daily life of the firm and the future will increasingly come into contact with Legal Tech products. But the point is, they rarely come close to it in advance.

Predictive algorithms are increasingly being used in various contexts to determine legal standings. These algorithms are employed to predict outcomes related to healthcare, social services, resource allocation, and potential criminal behaviour. D.L. Burk (2021) in his study aims to establish a connection between sociological and legal perspectives on AI by examining the sociological ramifications of algorithmic measurements, which have been overlooked. The research brings to light the unfavourable societal repercussions of predictive legal algorithms, presenting a noteworthy critique that has been absent in existing literature. The analysis uncovers that the societal impacts go beyond concerns solely about accuracy, which have been the primary focus of prior critiques. In reality, some of these solutions might even worsen the negative outcomes of algorithmic systems.

Legal algorithms, especially in criminal law, often yield biased results. However, they don't always cause harm; sometimes, they unveil the flaws within the laws they apply. C. Doyle (2021), in turn, by creating models that cover different ways of predicting what may happen based on a particular law, shows that algorithms can show the accuracy of legal outcomes, their distribution among the population, and the influence of factors on the predictions. This data reveals the shortcomings of the law: its deviations from the intended goals, uneven impact, inefficiency, and hidden value judgments in seemingly neutral predictions that contradict other legal principles. Making algorithmic insights a standard practice can effectively evaluate the fairness and effectiveness of predictive laws, especially in criminal law.

This study aims to thoroughly explore and evaluate the impact and integration of digital technologies in the field of legal science. The goal of this research is to clarify the useful uses and consequences of digital tools in a range of legal practice areas, including electronic legal services, e-government, and e-justice. The study's novelty stems from the observation that computerization and internet technologies have become ubiquitous in Ukraine's legal landscape, underlining the need to understand how these advancements optimize legal services and information management. In sum, the study contributes to the discourse on the changing dynamics of legal practices and their integration with digital technologies.

Literature review

The alternative is that law firms take the money into their own hands and train their staff accordingly. It would be easier to teach interns and students important key qualifications through early course offerings (Sales, 2021) abroad, for example in the USA or England, which has been on the agenda for many years. On the other hand, this is an exception to European practice. Concerning audits, for example, it is increasingly required to conduct them electronically. For example, in Saxony-Anhalt, an electronic exam is already being introduced. Admittedly, some starting difficulties are not excluded here. However, benefits are offered in many ways: firstly, electronic delivery is significantly faster and work is not lost on the delivery route. Secondly, illegible manuscripts that need to be deciphered first are a thing of the past (Yalcin *et al.*, 2023).

Digitalisation is progressing more and more. And even if at present law firms still try to resist legal technology, at some point there will not be a way to avoid them. Those who tackle this topic early on will lose less time and money in the future. The solution, on which not only the profit of firms depends, is Legal Education 2.0. The mediation of key practice qualifications must be focused – or at least must be in sight – on meeting the requirements of the practice. The fact that some universities already offer separate courses in the field of digitalisation is encouraged. However, given the rapid changes taking place in the legal industry, this is not enough (Kleiberg *et al.*, 2018).

Digitalisation is inextricably linked with interdisciplinarity. To be able to take part in events that are changing the legal system and professional reality in the legal industry, it is necessary to understand the processes of digitalisation. Various interdisciplinary competencies are useful for this. The widespread belief that every lawyer should learn to program is not targeted. Admittedly, it is helpful for a digital affiliate lawyer to acquire programming skills (Surden, 2019). However, it will be much more important for lawyers to understand the software and use it to their advantage. This requires a technological education.

In the future, lawyers will have to work more on interfaces with other professional groups and teams. Thus, the success of a lawyer in the 2020s and beyond will be based primarily on their communication skills with professional carriers of other disciplines. The technological, economic, ethical, and communication foundations will be of particular importance. Thus, mediating these interdisciplinary competencies should be part of the education of lawyers. Meanwhile, universities are just graduating individual lawyers who can (and cannot) do the same thing (Hildebrandt, 2018). In comparison, most bachelor's programmes make provision for a combination of a main subject and a minor subject, and voluntary attendance at non-professional events is supported. The legal centre of gravity here is not enough, especially since it is also not assessed accordingly. That being said, the evaluation of the area of focus is essential.

Such an approach would allow cover such topics with a broad perspective and acquire additional knowledge in various fields. Notably, global legal audiences are still very highly specialised when compared to experts in other professional fields as well as internationally. But at the same time, digitalisation does not stop before legal practice. Law firms, legal departments, and public sector clients want and need to work more efficiently and remain attractive in recruiting

(Micklitz *et al.*, 2021). Technology and digital work play a decisive role here.

As a rule, the growing information complexity and changing customer claims lead to the fact that the legal market is at a turning point. This applies equally to small and large law firms. Therefore, they increasingly resort to technological solutions to work better and more productively. The Future Ready Lawyer survey examined the future of legal work (Razmetaeva & Razmetaev, 2021). There is no doubt that the global future of law is already happening today – and that technology is the driving force behind change. As such, lawyers are increasingly using innovative and powerful technologies to help them work more efficiently and productively through analysis and data-driven knowledge, deliver better results and offer significant value to clients across industries. Lawyers who already use technology nowadays and are considered “technological pioneers” have a clear advantage over their competitors because they are already working more profitably and are better prepared for the upcoming changes (Jansen & Schreiner, 2023).

The legal industry was wary of the introduction of legal tech, and this is understandable: lawyers deal with confidential information that should be protected for the benefit of clients. However, cloud storage and service developers are constantly working to improve security, and more law firms are embracing digital trends. Technology has enormous potential; helps save time and money; automates routine processes and allows specialists to concentrate on the really important tasks. For example, one of the most frustrating aspects of working in the legal field is research and information retrieval. The lawyer needs to listen to clients’ stories, conduct briefings, study reports and testimonies to ultimately find what will help win the case (Greenstein, 2022b). Sometimes it is like looking for a needle in a haystack. Using machine learning, lawyers can quickly find the most important information. There’s nothing unusual about having to deal with millions, even tens of millions of documents in litigation cases – this is how LexisNexis’ description of the DiscoveryIQ IT solution begins. According to the company representatives, using this system, the analyst reduces the costs associated with legal due diligence by 70% (Crémer *et al.*, 2019). This sounds like a good investment for a law firm.

While some studies have explored specific aspects of technology’s influence on law, a comprehensive investigation encompassing practical applications, legislative considerations, and the evolving potential of machine learning algorithms is lacking. Thus, the article bridges the gap in the literature by providing a comprehensive and context-specific understanding of the intersection between digital technologies and legal science, offering valuable insights for researchers, practitioners, and policymakers seeking a deeper grasp of this evolving landscape.

Materials and methods

The study comprises several distinct stages aimed at achieving a comprehensive understanding of the integration and impact of digital technologies within the realm of legal science. In order to enable a thorough analysis and synthesis of pertinent information, these stages entail the application of various research methods.

A comprehensive literature review, encompassing a broad spectrum of academic articles, research papers, legal documents, and related materials, is conducted as the first

step of the study. The identification and gathering of pertinent information, ideas, and developments regarding the incorporation of digital technologies into legal science are made possible by this process. The phases of analysis and synthesis that come after the literature review provide the framework.

Following the literature review, the study employs the method of analysis and synthesis. This entails a meticulous examination of the collected information to identify key patterns, trends, and insights regarding the application of digital technologies in various aspects of legal practice. Through analytical processes, the study seeks to discern the underlying implications and potential benefits associated with the adoption of digital tools in legal science. Subsequently, the synthesized information is organized to present a coherent narrative that highlights the transformative role of technology within the legal domain.

The method of systematization is employed to logically structure and arrange the findings in a coherent sequence that ensures clarity and ease of understanding. The results of the analysis and synthesis are systematically organized into categories, subtopics, or themes that provide a clear framework for readers to follow. This structured presentation aids in conveying the evolution of digital technologies’ influence on legal practices, from e-government to e-justice, electronic legal services, and beyond.

By employing a combination of these research methods, the study can unfold the intricate relationship between digital technologies and legal science. The literature review allows for the incorporation of existing knowledge and perspectives, while analysis and synthesis provide a deeper understanding of the implications and trends. The final stage of systematization enhances the clarity and accessibility of the study’s findings, presenting a cohesive narrative that outlines the multifaceted impact of digital technologies on legal practices. Through these stages, the study to contribute valuable insights into the ongoing transformation of the legal landscape in response to the advancements in digital technology.

Results and discussion

The number of studies seeking to prove that many lawyers may also be deprived of appropriate technology is significantly growing. Almost impressive is a new study by the American platform LawGeex, which experimentally claims that an algorithm can check, analyse, and evaluate contract texts many times faster and many times more accurately than an experienced lawyer (Reier Forradellas & Garay Galastegui, 2021). LawGeex teamed up with professors from Stanford University, the University of Southern California and Duke University Law School to conduct an experiment in which the algorithm had to compete with the best lawyers.

Twenty lawyers were tasked with reviewing 5 nondisclosure agreements and identifying 30 hidden legal issues in them. The lawyers spent more than an hour and a half on average and admitted on average 85% of legal problems. The algorithm achieved 94% accuracy in detecting problems and took exactly 26 seconds to do this. Whether this is just the beginning of what will be possible in the future is difficult to predict. Analysing standard contracts can ideally help overloaded law firms complete certain tasks faster and create space for lawyers to perform complex work (Deligianni, 2021). But the fear that algorithms will sooner or later be capable of solving even complex legal issues better

than experienced lawyers is already clearly felt in the discussion rounds on this issue.

The LawGeex experiment was the only case. Back in 2016, IT company Leverton made a similar attempt in Berlin. The Legal Tech software, specially developed by the company, had to be able to answer complex legal questions in certain areas of law. This is no longer just a “smart contract” of standard contracts, but an opportunity to initiate a revolution in the legal profession (Greenstein, 2022a). The software is currently still under the control of lawyers, but this may not be required any time soon. Legal Tech is slowly but surely conquering legal everyday life. Internet portals like “Flugrecht.de”, “Geblikt.de” or “Helpcheck.de” quickly and inexpensively help users assert their rights, for example, for compensation in case of flight delays. While international law on legal services still retains legal advice on the merits of trained lawyers, legal technology has long been a reality and therefore will not be stopped in the long run (Bathae, 2018; Razmetaeva *et al.*, 2022).

Meanwhile, experts assume that not only will many poor people get better access to law with the help of legal technologies, but also that shortly 50% of the tasks that beginner lawyers currently perform in large law firms can be taken on by algorithms. This is also the forecast that Bucerius Law School and Boston Consulting Group published back in early 2016. A growing number of IT companies can offer legal advice in certain areas faster, cheaper, and more transparently than lawyers. At present, the software attracts interest, especially in cases with low dispute values. For example, the algorithm is capable of assessing the chances of success of a claim for compensation in case of violation of passenger rights after entering the relevant information within a few seconds (Kennedy, 2020).

But even with extensive, complex contracts, software sometimes has significant advantages in terms of speed and accuracy. Moreover, algorithms are more careful than lawyers. While human lawyers consumed a lot of coffee in the LawGeex experiment, the summary of the algorithm reads: “Robots don’t need coffee”. If a lawyer can be replaced by an algorithm, then perhaps a similar fate can befall the judge. Until now, although there is a perception among lawyers that computers cannot discuss law, researchers of the future suggest that, especially in standard cases, algorithms may soon be capable of enforcing laws more accurately than a human judge can. But the new technique also raises many questions. Whether the machine can consistently convey to the delinquent an understanding of the wrong they have committed seems at least doubtful (Larsson, 2019). It also raises doubts as to how a divorced client would feel when an inhuman machine listens to them describing their marital problems. Legal Tech will certainly take up more space in the future, and will also allow many people to gain access to a right that they previously did not have. However, it will most likely not be able to completely replace human jurisprudence.

In the technical literature, this is often seen as a dividing line between artificially intelligent systems and “normal software” when the system contains a machine learning component. If so, the system is said to be programmed implicitly. Almost all IT systems are explicitly programmed, examples of this are calculators or ERP software such as SAP. Implicit programming means that the steps to solve a problem are not known from the very beginning. In an

implicitly programmed system, an algorithm “learns” the desired behaviour from a historical dataset. That is, it recognises patterns and relationships between input and output dimensions and translates this “learned” into systemic behaviour. Thus, algorithms and data are at the heart of any intelligent system (Custers, 2022). An algorithm is understood as instructions, broken down into separate steps, which the computer can process mechanically, while the data, without which the algorithm is useless, constitutes an irreplaceable building block of the system.

The importance of data for an artificial intelligence (AI) system cannot be stressed enough (Reyes & Ward, 2020). At present, much more depends on their quality and quantity than on the sophistication of the basic algorithms. The algorithms that are used nowadays have existed in theory, partly since the 19th century. But only after there is a lot of computer-readable data, the AI system can be calibrated and produce results. Current advances in AI have the least to do with particularly sophisticated algorithms but are directly related to digitalisation and the growing datafication associated with it. For areas where obtaining computer-readable data is particularly difficult, progress through AI can be slow. This applies, in particular, to jurisprudence, whose data consists mainly of written text – a kind of data, as will be explained, is especially difficult for algorithms to process (Reyes & Ward, 2020).

For a computer to read data, it must be of a very specific nature. Firstly, they must be in a structured form, which in computer science simply means that they must be organised in a tabular manner, with well-defined columns. Secondly, the computer must know what value the data it receives represents. This refers to the so-called data calibration. This marking is done manually and is therefore complex, but relatively simple when it comes to, for example, using an image recognition algorithm. Thus, to summarise, at this stage, it can be stated that the algorithm, firstly, is always as “smart” as the data with which it was calibrated allows. Obtaining this data can be simple or very complex depending on the requirements. Secondly, what is called artificial intelligence currently does not go beyond finding patterns in data and translating them into systemic behaviour (Gori, 2022). However, this, in turn, does not mean that AI cannot be a very powerful tool, despite these limitations. Because, firstly, an artificially intelligent system works much faster than a person, and secondly, it finds patterns even in the depth of details and with an accuracy that a person would never be capable of.

At this stage, it is necessary to object to the assumption that the relatively indecisive development of AI in legal science is justified mainly by its inherent conservatism. Rather, it is the way that AI must understand legal science using algorithms for the most difficult-to-access types of data: language or text (Siegel, 2019). However, the highly formalised language of legal science is superficially extremely structured, and this circumstance slightly simplifies the processing of data material. However, it must be emphasised that even the most structured font for the algorithm remains a complexity from unstructured data if it fails to translate the meaning encoded in the text into machine representation. But this huge problem is still largely unresolved today.

Every conceivable application for AI in legal science depends to a large extent on whether this problem can be tackled. The entire field of categorisation “Text” is so complex

that for this purpose GI Subdisziplin developed a programming language, which is called Natural Language Processing (NLP). What is already possible in legal practice using NLP methods, albeit quite considerable, is essentially limited by the possibilities of extracting information, that is, extracting significant particles from legal documents, for example, contracts. Currently, various NLP techniques are being used to develop powerful assistive systems that deserve attention, such as search technology for identifying relevant text or documents (Wolswinkel, 2022). However, extracting structured information from fonts is already possible.

For instance, lease agreements. With the appropriate software, one can create a spreadsheet from the mass of leases with decisive content at the click of a button and instantly know who rents what, from whom, when, and for how long. After all, another big field is decision forecasting and risk assessment. These tools are at a very early stage of development, but there are already early approaches to predicting court decisions. For this, for an open case, as many comparable historical cases as possible are identified from the database and an estimate is made based on the relative frequency of success cases (Zou & Zhang, 2022). However, decision prediction has still not been ground-breaking, and it is also questionable whether it will ever be possible in specific case categories. This can only fail because both legislation and judicial interpretation are in constant flux and often subject to regional specificities.

In the next decade, computers cannot be expected to understand legal texts. However, in the medium term, it can be expected that it will be possible to translate an increasing proportion of the meaning of texts into representation, to work algorithmically on this basis and thus bring the analysis of contracts to market maturity. Once this succeeds, a kind of abstract language, similar to a programming language, emerges from this view, which allows the content of contracts to be coded piece by piece. Subsequently, legal science would eventually enter the realm of algorithms, and the limitations on the continued application of artificial intelligence would gradually decrease.

The digitalization of human consulting was the mission of young insurance start-ups four years ago. Lavishly funded companies such as Knip, Clark, and GetSafe have proposed replacing the unpopular insurance broker with smart algorithms (Hildebrandt, 2018; Sales, 2021; Xu, 2022). Smartphone apps should advise clients on their insurance needs and provide related products objectively, independently, and around the clock. InsurTech startups have promised objective and independent advice that is not focused on personal preference or commission interests. Like human consultants, consulting applications need to gain insight into the client's life situation and existing insurance policies. In the second step, coverage gaps must be closed by automatically selecting new contracts.

To drive the promise of added value, consulting application vendors relied on the collaboration of major insurance companies. Since smartphone users did not have the option to select and enter existing insurance policies, start-ups requested information on existing contracts from the respective insurance companies. Therewith, they quickly faced the paper reality of the insurance industry. Insurers' responses, to the disappointment of users, took up to 5 weeks. The result was often a poorly scanned insurance policy that, littered with stamps and markings, was unreadable for the machine.

For example, to receive feedback from the Warentest Foundation, applications had to establish an accurate mapping between test reports and contracts. The analysis of the insurance portfolio ultimately had to be limited to identifying and closing obvious gaps in hedging. New contracts created even bigger problems. Although most insurers already have digital interfaces for calculating individual premiums, multi-page paper forms must be re-completed no later than the contract conclusion (Re & Solow-Niederman, 2019). Similar difficulties can be found in the world of legal science. Contracts and other documents are rarely found in digital readable form. A pronounced bias towards original signatures leads to the fact that, as a rule, not files, but paper documents are printed, signed, and stored. Thus, they are not available for applications and algorithms.

Greater use of digital legal advice in the future will require a digital ecosystem that digitally maps contractual and operational relationships. With the development of blockchain, including smart contracts, significant prerequisites have been created in recent years. Investment in blockchain-based business models has grown rapidly since then. The World Economic Forum expects that in 2025 about 10% of the world's gross domestic product (GDP) will be processed using the blockchain (Bathae, 2018). Until that happens, digital consulting approaches will need to be limited to narrowly defined areas of application, such as passenger rights, to be successful. Algorithmic legal advice in practice fails, primarily in digital and structured data access. This is especially true if collaboration with traditional players is unavoidable. In practice, the promise of digital benefits must also be redeemed digitally. Users do not recognise any value in hybrid counselling with the Attorney Algorithm. Digital legal advice can be successful in special niches today. The path to the mainstream requires smart contracts and blockchains that provide digital infrastructure. Legal Tech companies face a dilemma: As a law firm, one cannot run a Legal Tech company based on the success fee compensation model because it is prohibited by legal professional law. And, if one is not a lawyer, they cannot provide legal services due to the monopoly on legal advice.

Digitalisation will fundamentally change the legal market, says Stefan Bridenbach, professor of civil law, civil procedure law, and international economic law at the European Viadrina University in Frankfurt (Hildebrandt, 2018). Consumer offerings are far beyond legal technology. The legal arena is generally predestined for the use of digital tools. Decisions in the legal field are determined by rules, namely by legal rules. If these rules only work with data – date of birth, income limit, or religion, yes/no, or something else, – then all these data-only decisions can be automated.

Workflows in which legal decisions play a role will be much more determined by algorithms and artificial intelligence in the future, according to Breidenbach's prediction. Even in law firms and legal departments, and sometimes in the courts. According to some experts on "digital" legal science, the integration of digital technologies and law is primarily accomplished by means of intellectual automation of tasks that typically require human intervention (usually in the form of legal education and/or relevant work experience) (Gooding & Kariotis, 2021). Searching, editing/replacing text, matching, spotting inconsistencies, translating into another language, analysing, interpreting, selecting, deciding, and so on are some examples of these actions.

Speed will undoubtedly rise as a result of this automation, and the accuracy and calibre of the work produced should also likely improve. As a result, the price of these legal services will go down because the complexity and time required to complete the work determine the primary pricing factors in the legal profession (Larsson, 2019). Information technology accessibility is one of the most significant factors influencing the growth of contemporary innovative societies. There was a long and difficult road leading up to this state of communication systems. For many of our ancestors' generations, spoken word was the only way to gather and store knowledge. States face a variety of challenging issues as a result of the growing understanding of the nature and principles governing computer information technologies and the growth of the Internet (Crémer *et al.*, 2019). Information technologies based on computers are neither a tool for creation nor for destruction. The way, who, and why they are used determines a lot about how they work. In this sense, the open nature of information registers and digitization can lead to both new opportunities and risks, such as those that arise when creating laws or modelling legal scenarios.

Nowadays, in Ukraine the socio-political, economic, and ideological role of information, and information law is increasing, and the information needs of society are growing. Information turns into a legal product and/or service. New concepts are emerging: e-democracy, e-government, "digital" legal science and others. Over the past five years, hundreds of all kinds of registries have been created in Ukraine, collecting thousands of terabytes of data about everything possible. It may seem that the country has already "digitalised" all possible public services (Micklitz *et al.*, 2021). However, state registers have not yet learned how to interact with each other. This very factor is an obstacle to the introduction of the "digital" economy of Ukraine.

The implementation of certain constitutional rights of Ukrainian citizens today allows them to practically provide such electronic public services as the provision of medical services through the electronic healthcare system, online receipt of public services through the system, etc. In legal activity, it is possible and necessary to effectively use computer and Internet technologies. The latter, according to the scientist, greatly facilitates the work of legal practitioners. Firstly, it is an unlimited operational exchange of information through the Internet between various subjects of legal relations. Secondly, it is the ease of use of various information retrieval systems of legislation. Thirdly, it is simply the possibility of competent paperwork using modern text editors (Kleinberg *et al.*, 2018).

With the development of information technology, professional computer platforms, legal reference systems, and special-purpose databases appear. To date, in Ukraine, there are information retrieval systems, information legal systems, and legal information systems: Liga Zakon, Base Garant, State Portal of Norms Federal Laws, etc. Such networks provide their services to hundreds of thousands of users (Gori, 2022). The tasks of these systems include the

collection, accumulation, systematisation, storage, and provision of various legal information to consumers, etc. These systems are actively used in modern legal activities. That is why information security is becoming an important component of ensuring national and international security, which implies both the need for international cooperation and the unification of national regulations in this area.

At present, there are about 330 state registers in Ukraine. Most of them are not basic, such as the demographic, land cadastre, the register of property and real rights, the register of legal entities and individuals and public organisations. On average, there are from three to seven such base registers in each country.

Conclusions

In conclusion, digital technologies in legal science represent a structured approach involving the application of computer software, information networks, and other digital tools by governmental bodies and public administration entities. This application aims to collect, process, and expand legal information while generating electronic documents. The key areas of digital technology implementation in law encompass e-government, e-justice, electronic legal services, electronic lawyer services, and e-democracy, utilizing tools such as state electronic registers, communication systems, and analytical legal systems.

The legislative framework in Ukraine guides the use of digital technologies, covering unified state registers, electronic document management, information systems in courts and governmental activities, with ongoing considerations for expanding into areas like electronic healthcare and e-democracy elements. Although translating lawyer actions into machine-learning algorithms is feasible across legal branches, the current quality of these algorithms requires improvement to enhance accuracy and reliability. Overall, digital technologies have brought advancements to the legal field, but further refinement and legislative support are essential for their continued development and effective integration.

Machine-learning algorithms also show potential to replicate lawyer actions, despite needing improved quality. In essence, digital technologies offer transformative opportunities for modernizing legal practices and systems. The article suggests several promising areas for future research in the realm of digital technologies in legal science. These include evaluating the effectiveness of digital tools in legal information management, comparative studies of legislative frameworks, exploring ethical implications of machine-learning algorithms, investigating electronic healthcare systems' legal aspects, analysing e-democracy elements, and studying the evolving roles of legal professionals in the digital era.

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Conflict of interest

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Legal Tech: розгадка природи та призначення сучасного права в цифрову епоху

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Анотація. Мета роботи – дослідити, як комп’ютерні технології використовуються в юридичній практиці. Основні методи, використані в цій роботі, – систематизація, яка дала змогу розмістити результати в логічному порядку для розуміння та відтворення досліджуваного, а також аналіз та синтез для літературного огляду тематичної літератури та визначення відображених у ній основних наукових тенденцій. Результати дослідження демонструють, як комп’ютерні технології підвищили зручність, швидкість, візуалізацію та передбачуваність юридичної практики. Практичне значення дослідження полягає в тому, що комп’ютерні технології, спеціалізоване програмне забезпечення та математичні методи необхідно впроваджувати в правозастосовні та законотворчі процеси з метою збору, зберігання та обробки правової інформації у спосіб, який найкраще уможливує надання різноманітних юридичних послуг. Отже, цифрові комп’ютерні технології розвиваються в правовій сфері за низкою напрямів, серед яких автоматизація стандартних юридичних послуг, використання юридичних послуг онлайн, оцифрування державних послуг та їх надання онлайн, перехід до системи електронного правосуддя, моделювання правових рішень на основі штучного інтелекту тощо. Автоматизація багатьох суспільних процесів набирає обертів, зокрема й у юридичній професії

Ключові слова: інформатизація; Legal Tech; комп’ютерні технології; диджиталізація; юридичні послуги