

IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE TOOLS IN THE LEGAL INDUSTRY

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ABSTRACT

Due to the specific nature of legal affairs and the judiciary as a whole, it was initially believed that artificial intelligence would largely bypass the legal industry. However, the degree of application of artificial intelligence (AI) in the legal sphere in certain countries has exceeded all expectations. This has given rise to numerous questions, not only of a legal but also of civilizational importance. The effects of the application of AI in the judiciary have remained insufficiently researched, as have their consequences. They have been overshadowed by market competition among highly developed technology companies for profit, as well as by the interests of individual states in exercising political control over the judiciary. In order to contribute to clarifying the depth of change and the essence of the risks, this paper explores the basic AI tools that are used or recommended for use in the legal industry of certain countries, primarily the USA, China, and the European Union. Their characteristics are highlighted, as well as the problems that arise in this context. The risks are all the greater if we take into account the findings of our research that the field of AI worldwide is insufficiently and superficially regulated by law. The level of control, supervision, and verification of AI remains far below what is necessary, which calls its trustworthiness into question. Therefore, the adoption of appropriate laws at the national and international levels has become a priority for the further development and application of artificial intelligence and for the prevention of dangerous and undesirable consequences, such as massive violations of human rights, the endangering of human freedoms, and deep social upheavals. The dilemmas that lawyers and judges face in the application of artificial intelligence, and which are discussed in this paper, undoubtedly require further theoretical elaboration and clarification.

Keywords: Artificial intelligence, legal industry, AI legal tools, Internet court.

JEL: O33, K40, L86

DOI: 10.5937/intrev2504135V

UDC: 004.89:347.9

COBISS.SR-ID 183708937

INTRODUCTION

The application of artificial intelligence in the legal industry has taken off. Technological tools whose “brains” function on the basis of algorithms are designed to serve as an aid. However, it appears that in some jobs and in certain contexts their application is gradually diminishing the role and presence of humans. Three examples support this observation. In the Latin American country of Colombia, Judge Juan Manuel Padilla ruled in a dispute over the reimbursement of expenses for the care of a sick child based on text generated by artificial intelligence, specifically the fourth generation of ChatGPT. The verdict was announced on January 30, 2023 [1]. Thus, for the first time in the history of global justice, artificial intelligence “judged” a dispute.

In May 2023, Danish MPs applauded the Prime Minister for her speech at the final session of Parliament before the summer break. When she informed them that a significant part of the text had been written by artificial intelligence, they were shocked. They questioned what effects artificial intelligence would have on the work of state institutions, the status of officials, and the preservation of employees’ jobs [2].

On the other side of the Atlantic Ocean, in the USA, after two years, the dispute initiated in 2018 by *Stephen Thaler*, an engineer and the creator of the DABUS AI system, against the State Copyright Agency ended in April 2023. The US Copyright Office had previously refused to register the artificial intelligence system DABUS as the copyright holder of the two-dimensional imaged artwork *A Recent Entrance to Paradise*. The Agency’s position was subsequently confirmed by the Federal Court for the District of Washington and then by the US Supreme Court [3].

In 2019, Thaler submitted two requests to the Patent Office seeking to grant the DABUS system inventor status for two industrial innovations. He then initiated disputes with the same objective in several other countries. In Australia, *the Australian Patent Office* also refused to accept Thaler’s application to register DABUS as an author. Thaler appealed to the court, and, contrary to expectations, Federal Court Judge Beach, acting as a single judge, took the position that artificial intelligence could be registered as an innovator, provided that it could not acquire or exercise copyright [4]. This marked the first time in history that artificial intelligence was recognized for any form of authorial creativity. When the State appealed, the Full Court of the Federal Court of Australia ultimately rejected the single judge’s position and confirmed that artificial intelligence cannot be registered as a creator [5].

The European Patent Office (EPO) also refused to register authorship in favor of DABUS, explaining that an author can only be a natural person. This position was confirmed by the legal board in connection with Thaler’s appeal. Furthermore, although *the Patent Office of the Federal Republic of Germany* took a somewhat different position—namely, that works created by DABUS may be eligible for copyright protection—it nevertheless confirmed that the holder of copyright can only be a natural person. Thaler’s attempts to register patents in favor of DABUS were also rejected in Israel, New Zealand, South Korea, and Great Britain. At present, the only country whose Intellectual Property Commission has accepted Thaler’s application for registration is South Africa [6]. This application related solely to the creation of a new type of container for transporting and storing food, which Thaler claimed was an exclusive innovation of the DABUS system. The decision to accept the application was subsequently published in the gazette of the World Intellectual Property Organization.

METHODOLOGY

Considering the significant differences in understanding and defining artificial intelligence, the scarcity of legislation at the national level, the absence of international conventions or agreements in this area, and the contradictions between commercial interests, scientific ambitions, and state policies, the most suitable approach to our topic was the analysis of experiences and achievements in individual countries regarding the application of artificial intelligence tools, as well as the presentation of regulations currently being prepared and the examination of court practice related to artificial intelligence. The material consulted indicates that the relationship between artificial intelligence and law has entered a critical phase.

LEGAL REGULATIONS

Many authors, such as [7][8][9][10][11][12][13] emphasize the importance of technological progress, innovation and education. Several larger and more developed countries have, over the past five years, begun to shape their own legal frameworks for the development, application, and control of artificial intelligence. These efforts have largely been based on their own needs, traditions, and national interests, in accordance with the nature of the systems they have built and the level of technological development achieved. Due to significant differences among countries, there has been no attempt to formulate common rules or even a unified approach to these issues. It has not been possible to reach agreement even among closely aligned countries, such as the members of the G7 Group, who at this year's summit in Tokyo managed only to proclaim a shared intention to address problems related to artificial intelligence, without adopting concrete measures [14].

The greatest progress in this field has been achieved by the European Union. By the end of 2023, it is expected to adopt the Artificial Intelligence Act [15], which will serve as a roadmap for many countries and groups worldwide in regulating this sphere. The European Union will thus be in a position to project its vision of the legal regulation of artificial intelligence on a global scale.

ARTIFICIAL INTELLIGENCE SYSTEMS IN THE EU LEGAL AREA

AI tools in the European Union have been created gradually; they have been developed in line with scientific and technological progress and applied to the extent of interest shown by legal professionals in certain countries. Given that there was no single regulation governing their development and application, and with the aim of standardizing practice and ensuring harmonized application, several documents of an instructive and guiding nature were created within the European legal area. Among them, two are particularly significant. One sets out ethical principles, while the other provides practical instructions for action.

ETHICAL PRINCIPLES FOR THE IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE IN THE SPHERE OF LAW

At the end of 2018, the Council of Europe adopted the Ethical Charter on the Use of Artificial Intelligence in the Judiciary [16]. This document contains five basic principles that artificial intelligence systems must meet in order to be used by legal professionals within the European legal space. Alongside the designation of each principle, an explanation of its purpose and content is provided, as outlined below:

1. *Principle of respect for fundamental rights*: ensure that the design and implementation of artificial intelligence tools and services are compatible with fundamental rights.
2. *Principle of non-discrimination*: specifically prevent the development or intensification of any discrimination between individuals or groups of individuals.
3. *Principle of quality and security*: with regard to the processing of judicial decisions and data, use certified sources and intangible data, with models developed in a multidisciplinary manner, within a secure technological environment.
4. *Principle of transparency, impartiality, and fairness*: make data processing methods accessible and understandable and authorise external audits.
5. *Principle "under user control"*: preclude a prescriptive approach and ensure that users are informed actors and remain in control of the choices made.

The above-mentioned principles should be equally respected by both the public and private sectors, particularly when AI tools are intended for the processing of court decisions and judicial documentation. The Ethical Charter represents a starting point for the work of tool developers, as well as for legislative and other regulatory bodies of the member states. Adherence to these principles guarantees the controlled development of AI tools, their gradual improvement, and the enhanced provision of legal services. Without them, it is not possible to improve the efficiency and quality of judicial work, nor to ensure the protection of individual rights. The application of AI tools in criminal matters is particularly sensitive and must therefore be approached with extreme caution, so as to avoid discrimination against individuals and the endangering of the right to a fair trial. Legal ethics require that users of AI tools rely exclusively on systems that guarantee transparent, impartial, and fair data processing and that possess the necessary certifications.

In the European legal area, artificial intelligence systems that perform the following tasks or are capable of the following actions are the most widespread: (a) similar case suggestion systems; (b) litigation risk assessment systems; (c) document-assisted generation systems; (d) speech-to-text applications; (e) risk prediction systems; (f) question-answering robots; (g) emotion recognition systems; and (h) filtering systems [17].

THE WAY IN WHICH EUROPEAN LAWYERS SHOULD USE ARTIFICIAL INTELLIGENCE TOOLS

Building on the aforementioned ethical principles and drawing on practical experience, the two most important European legal associations published, at the end of 2022, the *Guide for the Use of Tools Based on Artificial Intelligence by Lawyers and Law Firms in the EU* [18]. This document represents an indispensable set of guidelines for lawyers engaged in legal practice within the European judiciary. The guide outlines the various possibilities that AI offers to employees in the legal industry, particularly to small law firms, solicitors' offices, and legal advisers. Its special value lies in the inclusion of examples of the practical use of AI tools in a judicial environment.

Depending on the functions they perform, these AI tools are classified into several groups:

- The first group includes *AI tools that support the drafting of legal acts*. They assist lawyers in preparing documents, facilitate document drafting, and are capable of translating relevant legal data and arguments from legal databases into concrete legal texts;
- The second group consists of *AI systems used for the analysis of previous documents, materials, regulations, and contracts*. Their main benefit lies in assisting lawyers in understanding cases and legal situations through the classification of relevant texts or their parts, information extraction based on time, content, contractual provisions, and facts, as well as through their combination;
- The third group comprises *AI tools that enable the retrieval of texts and the analysis of cases from judicial practice and legislation*. Basic tools display cases by subject matter, while more advanced analytics extract specific key elements from judgments and allow their monitoring. The most advanced tools enable insight into the broader context in which decisions were made and provide material for so-called "predictable justice". This group also includes advanced techniques for searching beyond textual content, such as semantic search and argument extraction. The most developed systems are capable of monitoring the activity of all participants in legal proceedings, from plaintiffs and defendants to judges and defence attorneys;
- The fourth group includes *AI tools for converting oral statements into text*. These tools generate transcripts of spoken statements by participants and may also translate spoken content into foreign languages;
- The fifth group consists of *dialogue management systems*. These systems enable direct interaction between the user and the application itself, resembling human communication. Such systems are commonly referred to as chatbots and may have either narrow or broad purposes. They may be specialised in specific legal fields or designed for general legal matters;
- The sixth group, and final group, includes *systems that assist in the management of law firms*. Through internal administration and work automation, these systems can save law firms significant time and reduce costs. Their effects are expected to become visible very quickly, given that currently only about 31% of tasks in law firms are billable, while 69% of effectively spent working time is devoted to other activities [19].

ARTIFICIAL INTELLIGENCE SYSTEMS IN THE USA, CANADA, GREAT BRITAIN AND AUSTRALIA

Our research shows that lawyers and solicitors in the United States, Canada, the United Kingdom, and Australia have a much wider range of AI-assisted tools at their disposal than their counterparts in other countries. Given the level of development of these countries and the lack of comprehensive regulation, technology companies have found a very broad market for promoting products intended for legal professionals. The tools currently used in states whose legal systems are based on the principles of *common law*, that is, precedent law, can generally be classified according to the functions they perform.

SYSTEMS FOR THE ANALYSIS OF LEGAL TEXTS

These systems are capable of extracting meaning from databases of court decisions and legislation. To this end, they scan past archives in search of arguments that can be applied in new cases and, at the same time, use diagrams to graphically illustrate connections between specific legal facts from earlier decisions that correspond to a new case. For example, the Ravel system contains scans of numerous US court decisions in its database and is able to extract citations from them. The CARA system generates texts or summaries of only those arguments from individual cases that support a new case conducted by a lawyer. The Casetext and Fastcase systems generate networks of linked citations related to specific legal provisions and court rulings. The Luminance system suggests ways in which legal professionals can extract relevant legal facts from previous disputes and apply them in new cases.

ADVISORY SYSTEMS FOR PROVIDING ANSWERS TO SPECIFIC LEGAL QUESTIONS

The group of question-and-answer tools includes AI systems that provide lawyers with responses to legal questions or dilemmas within specific areas of law. For example, the ROSS system simultaneously provides an answer and supports it with quotations, suggestions, and reference materials, ranked according to relevance and timeliness, and is ultimately capable of drafting a legal text on a specific issue. A significant number of lawyers rely on the Lexis Answers system, which offers authoritative legal responses, complete with citations, based on the analysis of extensive legal documentation. The Watson Debater system is capable of examining a given topic in detail and presenting the user with relevant arguments. This group also includes more narrowly focused systems that relate exclusively to the practice and decisions of individual states within the United States. Furthermore, the CCLIPS system enables the downloading of all relevant cases and legal provisions from the integrated database of disputes concerning the application of the Civil Code of the State of Louisiana. The ALEXEI software tool provides relevant case law examples, precedents, and arguments within 24 hours and, together with this information, generates the corresponding legal act, decision, submission, or similar document. It is also capable of providing a reliable assessment of the likely outcome of litigation [20].

SYSTEMS FOR PREDICTING THE OUTCOME OF DISPUTES

These systems are designed to forecast the outcome of ongoing disputes based on the analysis of previous judicial decisions. In the United States, the SCOTUS system, with a forecast accuracy of approximately 70%, and the Lex Machina system, whose predictions in the field of intellectual property were confirmed in about 64% of cases, have proven particularly effective. The Motion Kickstarter system is able to display all previously approved or rejected motions related to a specific legal issue, sorted by case type and content. In Great Britain, the highest level of accuracy in predicting dispute outcomes was achieved by a system known as CaseCruncher Alpha. Developed by students from the University of Cambridge, its predictive accuracy was confirmed in 86.6% of cases. In Canada, the Blue J Legal system has been developed, specialising in tax and related matters and demonstrating a high level of predictive success.

SYSTEMS FOR SCANNING AND ANALYSIS OF CONTRACTS

Systems that contain extensive databases of contracts and are capable of extracting relevant clauses from large volumes of documents are particularly valuable in the field of contract law. For example, the LawGeex software application selects the most suitable contracts and clauses with an accuracy rate of 94%. As a result, law firms can save up to 80% of working time. The ThoughtRiver system, which scans contracts and presents their key elements via an online dashboard within a law firm, offers similar capabilities. The Legal Robot application performs preliminary contract checks and analyses, identifying potential deficiencies. For entrepreneurs without legal expertise, contract conclusion is facilitated by the Beagle system. The COIN system focuses exclusively on the analysis and preparation of commercial loan agreements, while broader aspects of contract-related legal research are handled by systems such as HIPO, Relativity, Kira Systems, Modus, OpenText, kCura, and others.

SYSTEMS THAT ASSIST IN SCANNING VIRTUAL DATABASES

A distinct group of tools includes those designed for so-called e-discovery review tasks. These systems interact exclusively with databases of electronically generated information stored in virtual environments. They do not process scanned paper documents but focus solely on digital databases, including cloud-based storage and other virtual spaces. Electronic discovery is a process comprising a series of interconnected activities, ranging from communication with the client and research into the legal matter, to evidence collection and, where applicable, submission of documentation to the court. Lawyers and court associates in the United States, England, and Ireland began using Technology-Assisted Review (TAR) systems as early as 2012, while their use has been recorded in the Australian state of Victoria since 2015. Thanks to automated search processes, these systems deliver more accurate information with less effort and in a significantly shorter time than manual searches of scanned documents. Consequently, it is not surprising that most of the 1,000 companies listed in the Forbes ranking of the largest corporations annually spend more than five million US dollars on e-discovery systems for the automated processing of legal documents.

SYSTEMS FOR DRAFTING LEGAL DOCUMENTS

This group includes automated systems that perform a single but highly important legal task: the drafting of legal documents. Among the most widely used drafting tools are Clifford Chance Dr@ft, Desktop Lawyer, LegalZoom, Rocket Lawyer, Legal Vision, LawPath, ClickLaw, and others. Their common characteristic is that they enhance the efficiency of law firms, reduce time and labour costs, and produce legally sound and high-quality legal texts.

SYSTEMS FOR OBTAINING CITATIONS

There is also a distinct group of tools whose algorithms are designed to extract, from diverse databases of judicial decisions, citations that are directly relevant to a specific legal dispute. For example, the KeyCite system not only informs the user of the legal act in which a particular citation appears, but also provides an assessment of whether that citation is suitable for the intended legal purpose, taking into account the passage of time, potential regulatory changes, and developments in legal practice. One of the earliest tools in this category was Online Shepard's Citations, which remains in use today due to its proven effectiveness [21].

ARTIFICIAL INTELLIGENCE SYSTEMS IN THE CHINESE JUDICIARY

China was not the first country in the world to begin using artificial intelligence systems in the field of justice, but it has progressed much faster than most other countries. Two circumstances were decisive in this regard. On the one hand, the highest state authorities have decided that China will become the world's leading country in the development of artificial intelligence by 2030 [22]. On the other hand, within the Chinese judiciary, due to the country's large population and the slowness of judicial proceedings, a substantial backlog of unresolved cases has accumulated, while the lack of uniformity in court decisions across Chinese provinces has become a matter of concern.

Unlike European practice and the common-law practice of other states, the development and scope of artificial intelligence in China are exclusively directed by political acts of the State Council and the Supreme People's Court. As early as 2009, the Chinese authorities decided that all court decisions should be made public, in order to eliminate the non-transparency of local court decisions and their significant disparities. Subsequently, in 2014, a centralized digital platform entitled *China Judgments Online* was introduced, into which decisions of all courts have been uploaded ever since. It is estimated that the database now contains more than one hundred million decisions. At the beginning of 2016, by decision of the President of the Supreme People's Court, the concept of the "smart court" was introduced into the judiciary. A smart court "*makes full use of technologies such as the internet, cloud computing, big data, artificial intelligence, and so on, to promote the modernization of the trial system and adjudication capacity*" [23]. A further radical step was taken in 2017, when the Supreme People's Court introduced the obligation to video-record all trials, as well as to broadcast hearings via video. In the first year following

the introduction of this rule, as many as two million court hearings were broadcast live. The specificity of China lies not only in the fact that the Supreme People's Court prescribes rules for the development of artificial intelligence in the judiciary, but also in the fact that the Court participates, as a partner, in financing companies that produce "lawtech" tools [24]. The most compelling evidence of China's exceptional technological progress in the field of artificial intelligence systems is that, globally in 2019, out of a total of 1,369 registered lawtech patents, as many as 62%, or 847, were registered in China [25].

The development of the "smart court" concept has now reached the level known as "Smart Court SoS" (System of Systems). Through this application, all electronic platforms of all courts are networked into a single system, which is further connected with the systems of social and health insurance, internal security, and other key public institutions. China has thus become unique worldwide, as no other country has established such an extensive electronic network. Today, every judge in China has the Smart Court SoS application installed on their official computers. The system enables both horizontal and vertical networking and is capable of automatically scanning court cases, extracting relevant references, recommending applicable legal provisions, and generating various types of judicial documents. A particularly distinctive feature of this system is its ability to identify and correct errors made by individual judges in the course of adjudication. Moreover, *"the new system requires judges to consult AI in each case, and if they reject the AI's recommendation, they must provide a written explanation"* [26]. Once a judge formally disagrees with the system's proposed solution, the system, through machine-learning capabilities, revises its recommendation and generates arguments and elements relevant for the final court decision.

Every Chinese citizen can easily access the smart court system through the AI tool "Xiao Fa", which verbally explains all relevant legal issues to interested parties. In response to user queries, the system provides information on substantive and procedural law and explains complex legal terms in language understandable to the general public [27]. The system's capacity reaches up to 40,000 responses per day. The Xiaofa robot was first implemented at the Beijing First Court for Voluntary Mediation of Disputes and was subsequently installed in approximately one hundred courts in other cities. In addition to providing explanations and guidance, this artificial intelligence system also proposes dispute resolutions that are potentially acceptable to all parties. If the parties accept the proposal, the system generates a consent act which, once signed by the litigants before the court, acquires the legal character of a judgment.

The next stage in the development of China's smart court concept involved the integration of the "WeChat" application into the Xiaofa system, thereby expanding the possibilities for remote dispute resolution. Installing the WeChat application on a mobile phone allows parties who accept AI-assisted mediation to complete the entire procedure without physically appearing before the court to sign or collect the agreed judgment. In this way, individuals and companies save travel costs and time otherwise required to attend court proceedings. The parties sign the agreement electronically, and artificial intelligence completes the remaining steps, including certification of the judgment and its electronic delivery to the litigants.

The most recent innovation within the smart court system relates to the expansion of WeChat's capabilities through the integration of the "Mobile Court" AI tool. As a result, court proceedings no longer take place within the physical premises of traditional courts, but in cyberspace, while maintaining procedural equivalence. *"By combining remote audio and video capture with facial recognition and e-signature technologies, Mobile Courts enable parties to engage in discovery, mediation, or trial through WeChat. As of October 31, 2019, the mini-program had 1.16 million registered litigants and 73,200 registered lawyers, who together completed 3.14 million litigation activities through Mobile Courts"* [28].

In addition to the above, the following AI tools are also used within China's judicial system: (a) *China Judgments Online* (CJO), which automatically converts all judgments of conventional courts into electronic form and stores them on the platform; (b) the *Similar Case Intelligent Recommendation System* (SCIRS), which provides dispute-resolution recommendations based on prior similar cases; (c) *Abnormal Judgment Warnings* (AJW), which alert judges when a proposed judgment deviates from established practice, particularly in criminal cases; and (d) the *AI Virtual Judge* (AIVJ), which appears on screen in the form of a virtual judge, communicates in real time with remote participants, listens to parties, and responds to their questions and objections.

China has undoubtedly made the most significant breakthrough in the application of artificial intelligence in the judiciary; however, these systems have also revealed certain shortcomings. Machine-generated expressions may result in ambiguous formulations and unreasonable propositions. Document flows between institutions and participants are prone to congestion, databases are often incomplete, and

the internal processes of decision-making within the so-called “black box” remain unclear. The core dilemma ultimately concerns the future relationship between traditional and virtual courts. For now, an optimistic view prevails: *“No matter from the perspective of intelligent technology or judicial ethics, artificial intelligence can only remain at the level of ‘intelligent assistance’; it cannot and should not completely replace the ‘judge’, ‘prosecutor’, or ‘police’ in value judgment”* [29].

CONCLUSION

The implementation of artificial intelligence in the judiciary, and in the legal sphere more generally, has brought certain benefits, including reduced expenditure of working time, faster dispute resolution, and increased predictability of outcomes. In many parts of the world, specific tools have been developed to assist lawyers, judges, and their associates in daily work and decision-making. However, some artificial intelligence systems have begun to perform not only auxiliary tasks, but also far more complex and sensitive functions, ranging from investigative activities and indictments to the formulation of judgments.

Concerns that artificial intelligence might one day occupy the judge’s chair have not been fully dispelled, primarily because the development of these tools has advanced much faster than the legal regulation of their use, supervision, and limitations. Only in 2022 and 2023 were significant steps taken to introduce stricter rules and safeguards aimed at preventing abuse and error. The prevailing view is that the application of artificial intelligence in the judiciary requires great caution.

The concept of justice is far broader and more elevated than the concept of judgment that artificial intelligence is capable of technically deriving from a specific legal norm. Justice is founded on fairness, and fairness encompasses values and principles that go beyond the letter of the law. It includes ethical, social, psychological, philosophical, humanistic, and many other components that cannot be expressed through algorithms. Sophisticated artificial intelligence systems are undoubtedly needed in the legal industry and will continue to be so in the future. However, they are not immune to unilateral or discriminatory application. Therefore, the relationship between artificial intelligence and the judiciary must be precisely regulated and predictable. It must rest on ethics, be subject to the law, and serve solely the benefit of human society.

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<https://doi.org/10.4236/chnstd.2022.114016>

Article history:

Received 30 September 2023

First Revision 19 February 2024

Accepted 15 May 2024