

A Study of Legal Technology and Legal Professional Ethics

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Abstract

In the 21st century, new technologies such as big data, artificial intelligence, and blockchain have propelled the modernization of judicial reform and social governance. This paper empirically examines the impact of legal technology on the legal profession, revealing the challenges and opportunities that legal technology brings to legal professional ethics. Through a comparative research methodology, we focus on the impact of legal technology on the legal services industry, the shock and transformation of law firms, and the interaction between legal technology and legal professional ethics. The study finds: first, the legal services industry benefits from advancements in legal technology; second, legal technology transforms law firm management and lawyer service models; third, legal technology and legal professional ethics develop in an integrated manner. These findings contribute to understanding the relationship between legal technology and the legal profession, and on this basis provide new ideas and empirical foundations for promoting the development of fundamental theories of legal professional ethics.

Full Text

Preamble

Legal Technology and Legal Professional Ethics Research

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Abstract: In the 21st century, new technologies such as big data, artificial intelligence, and blockchain are driving judicial reform and the modernization of social governance. This paper empirically examines the impact of legal technology on the legal profession, revealing the challenges and opportunities it presents to legal professional ethics. Through comparative research, we focus on legal technology's influence on the legal services industry, its impact on and transformation of law firms, and the interaction between legal technology and legal

professional ethics. The study finds: first, the legal services industry benefits from advances in legal technology; second, legal technology transforms law firm management and lawyer service models; third, legal technology and legal professional ethics develop in an integrated manner. These findings contribute to understanding the relationship between legal technology and legal professional ethics, providing new perspectives and empirical foundations for advancing the fundamental theories of legal professional ethics.

Keywords: Legal Technology; Lawyer Professional Ethics; Legal Technology Ethics

The term “legal technology” did not exist in earlier years; the industry previously discussed “law + internet” or “internet + law.” The corresponding terminology emerged around 2013, and industry consensus has only formed in recent years [1]. Legal technology refers to various tools, devices, technologies, and services developed using information technologies such as big data, artificial intelligence, and blockchain to facilitate legal activities. It can also broadly denote all science and technology related to legal activities [2]. The entry of technology into judicial processes and legal professional services is unstoppable, as these legal technology tools seek a new balance between better legal service quality and lower case costs [3]. The development speed of new technologies in the 21st century far exceeds that of any previous era in human history, resulting in a rapidly and unprecedentedly widening gap between technology and ethics.

Legal technology has broad application prospects in judicial and legal service institutions including courts, procuratorates, public security organs, notary offices, arbitration commissions, and law firms. Current research on legal technology and lawyer professional ethics primarily unfolds in three areas: The first area examines legal technology’s impact on the legal services industry. For instance, the UK is undertaking a £1 billion modernization project, experimenting with online divorce applications, small claims disputes, and minor traffic violation processing, while China is accelerating the development of applications that replace lawyer functions and even assist judges in adjudication [4]. These applications of legal technology in the judicial field are transforming the legal services market landscape. The second area focuses on how legal technology drives transformation in law firm management and lawyer service models through technological innovation, bringing significant changes to traditional law firm pyramid partnership systems, lawyer performance management systems, and service models. The third area addresses the interaction between legal technology and lawyer professional ethics, particularly technology’s impact on legal professionalism and values. Both domestic and international research in these three areas points to the shocks, challenges, and opportunities that legal technology brings to the legal profession and professional ethics. This paper argues that we should further examine the impacts of legal technology trends—such as big data, artificial intelligence, and blockchain—on the legal services industry, law firm management, and lawyer service models, and analyze from the perspective of legal professional ethics how to effectively regulate the research,

development, and use of legal technology.

The complex evolutionary process of interaction among law, technology, and ethics has become a crucial driving force for global judicial reform and legal professional advancement. We must be promoters rather than obstacles to legal technology innovation. Therefore, this paper proposes solutions for legal technology regulation from the perspective of lawyer professional ethics, focusing on three aspects: legal technology and legal services, law firm management, and lawyer professional ethics. This study emphasizes how lawyers, as legal technology users, should adhere to professional ethics. The most important finding is that driven by the wave of global judicial reform, the legal profession cannot remain immune in the realm of legal technology and must face tremendous transformations in service markets, management models, and service models, thereby triggering changes and expansion in lawyer professional ethics. This paper reaches three conclusions: (1) Legal technology itself is neither good nor bad; (2) Traditional lawyer professional ethics become anomie in the face of legal technology; (3) Legal technology should conform to social values, humanistic values, and professional ethical values. Based on these conclusions regarding legal technology's significant transformation and impact on the legal profession, this paper provides forward-looking guidance and reference value for deepening the fundamental theories, subject scope, and responsibility extension of China's lawyer professional ethics, as well as for formulating and amending China's lawyer professional conduct norms. The paper is structured as follows: The first part reviews literature on legal technology's impact on lawyer professional ethics; the second part discusses how legal technology will impact and transform traditional law firms (including service markets, firm management, and lawyer services); the third part examines the integration and development of legal technology and lawyer professional ethics; and the final part presents main conclusions and theoretical value.

1. Literature Review on Legal Technology and Lawyer Professional Ethics

In the 21st century, legal technology based on big data, artificial intelligence, and blockchain poses major challenges to existing social systems and technology ethics. Essentially, technology is more readily accepted when it serves as a tool for human legal professionals rather than completely replacing them. Traditionally, members of the legal profession are required to comply with specific professional ethical standards or codes of conduct [5], such as entry restrictions and behavioral constraints, with relatively strict professional conduct norms established in various countries to safeguard both the collective interests of the profession and the public interest. This section reviews literature on the application of legal technology and lawyer professional ethics, focusing on three issues: non-lawyers entering the legal services market, legal technology entering law firms, and theoretical identification between technology ethics and lawyer professional ethics.

1.1 Non-Lawyers Entering the Legal Services Market

The high transaction costs resulting from legal professional monopoly have long prevented some issues that should have been addressed through justice from being resolved. New legal technology companies are committed to solving these problems and allowing people access to justice, thereby improving access-to-justice outcomes [3]. Recently, ChatGPT, a general-purpose AI conversational language model developed by OpenAI and invested in by Microsoft, has become a global sensation, attracting over 100 million active users in just two months. On February 3, 2023, Business Insider, based on expert analysis, compiled a list of ten industries and positions that ChatGPT and other AI applications might threaten: technology (programmers, software engineers, data analysts), media (advertising, content creation, technology reporting), law (paralegals), market researchers, teachers, finance (financial analysts, personal advisors), traders, graphic designers, accountants, and customer service [6]. Notably, law (paralegals) is on the list. As early as 2007, the UK's Legal Services Act allowed non-lawyers to enter the legal services market in England and Wales and to own law firms. This has been described as a potential technological revolution in lawyer services, as consumer-centered organizations entering the legal services market mean that some legal service providers will be able to adopt these organizations' more effective business technologies. The conclusion is that self-regulation by providers to protect brand reputation may be more beneficial to consumer interests than professional self-regulation [7].

1.2 Legal Technology Entering Law Firms

Throughout the history of information technology development, the hierarchical relationship of legal technology is: Legal Technology—Information Technology (21st century)—Science and Technology (19th century)—Technology (17th century) [8]. According to functional classification, legal technology includes three categories: (I) technology for storing and disseminating knowledge; (II) technology for expanding human thought; and (III) technology for performing autonomous work [9]. Currently, legal technology applications in the legal services field primarily manifest as legal e-commerce, legal retrieval, legal analysis, law firm management, and automated advice. In the Anglo-American world, the most famous examples of legal technology entering law firms are LegalZoom and Rocket Lawyer—companies that use sets of ALAT technologies enabling New Law business models. These firms combine various legal technologies to build new legal service business models, using automated legal technology to enhance lawyers' work efficiency and combining with other strategic partners to market legal services and develop new business models. In fact, such companies represent a combination of legal technology and human lawyers, with legal technology providing users with standardized, highly repetitive services while customized and complex legal services are handed over to human lawyers. In Denmark, the legal tech startup Legal Hero also follows this model. Additionally, there are virtual law firms specializing in online legal services, such as

DirectLaw and Synclaw, as well as CaseShare and LextraNet, which provide online repositories for pending cases' pleadings, precedents, exhibits, transcripts, and other case materials. Among tools for autonomous task execution, IBM's Watson and the recently popular OpenAI's ChatGPT are systems capable of answering (legal and other) questions. Toronto-based Blue J.Legal has also developed similar technology, with this startup creating an AI legal prediction engine initially focused on tax law. Additionally, Luminance combines multiple disciplines including machine learning, natural language processing, and pattern recognition to quickly analyze and develop understanding of documents [9]. Regarding legal technology entering law firms, Professor Frank H. Stephen of the University of Manchester Law School further argues that restrictions on law firm organizational forms and ownership mean they cannot access organizational and production technologies that could otherwise improve services provided to clients [10].

1.3 Technology Ethics and Lawyer Professional Ethics

Legal technology should follow technology ethics, which belongs to the broader category of technical ethics. Technical ethics contains two elements: first, understanding technology; second, ethical consideration of technology [11]. The professional ethics that lawyers should follow are called lawyer professional ethics, which belong to legal professional ethics, which in turn should follow professional ethics. Both technology ethics and professional ethics should follow the responsibility ethics proposed by Hans Jonas [12], which consists of three components: first, forward-looking perspective; second, holistic perspective; third, continuity. Responsibility ethics in technological contexts needs to address two issues: first, the attribution of responsibility; second, open-ended consequences caused by open application scenarios. Therefore, both Value-Sensitive Design (VSD) theory [13] and Engineering Ethics [14] propose that professional ethics involving specialized technology primarily concerns three levels: technology ethics, interest ethics, and responsibility ethics. Engineering ethics, also known as Preventive Ethics, describes moral norms through negative rules, but rule ethics has limitations. First, rules cannot fully explain the importance of judgment and contextual knowledge when fulfilling certain obligations, as some professional activities require high levels of caution and judgment. Second, there is an intrinsic, motivational, and idealistic factor in professional life that cannot be fully explained by rules, such as compassion and gratitude, because the virtue of gratitude is not equivalent to moral norms requiring gratitude. Consequently, Aspirational Ethics [15], which uses professional knowledge and technology to enhance human welfare, has begun to attract attention.

Through the above research, we find that legal technology has already entered the legal services market and law firms, challenging traditional lawyer professional ethics such as market entry restrictions and behavioral constraints. This includes non-lawyers entering the legal services market and AI from technology companies potentially replacing traditional lawyer work, while technology ethics

is developing toward professional ethics such as responsibility ethics, preventive ethics, and aspirational ethics. However, the above research has not addressed legal technology' s dual attributes of technology ethics and professional ethics, nor how to balance legal technology and lawyer professional ethics. Based on empirical research, this paper proposes that legal technology and lawyer professional ethics will develop in an integrated manner to form legal technology ethics.

2. The Impact and Transformation of Legal Technology on Law Firms

The rapid development of legal technology such as big data, artificial intelligence, and blockchain in the 21st century has led to the popularization, precision, and intellectualization of legal information and services. More commercialized and market-oriented legal service competition is continuously breaking through the self-protection barriers established by legal professional associations through internal and external dual forces, and lawyers' advantageous position as legal elites is declining. Simultaneously, with the transformation and upgrading of the digital economy society, the legal services industry is accelerating its development driven by consumption upgrades. By the end of 2022, China had over 630,000 practicing lawyers and has initially formed a socialist legal services system with Chinese characteristics. The 20th Party Congress proposed accelerating the construction of a modern socialist strong country with Chinese characteristics, which has become a societal consensus. China' s development urgently needs to integrate with the international legal services market. Against this background, to standardize law firm management and align with the international legal services market, law firm digitalization is imperative. The previous discussion addressed how non-lawyers using legal technology enhance competition in the legal services market; therefore, this section primarily discusses legal technology' s impact on law firm partnership systems, lawyer management systems, and lawyer service models.

2.1 Reshaping the Partnership System

Contemporary law firm development models originated from the Cravath system, which transforms law school graduates from associates to partners through long-term and extensive training while implementing strict hierarchies within firms, with partners exercising command and supervision. These partners eventually even became part of the American and European ruling class [9]. A joint research report by the Boston Consulting Group and Bucerius Law School argues that new technological developments are driving large law firms to modify elements of their organizational models, particularly suggesting that the traditional pyramid model may be replaced by a rocket-shaped organization. However, the rocket-shaped law firm is not the only viable path for reforming large law firms. George Baker and Rachel Parkin argue that the pyramid-shaped organizational structure characteristics of large law firms for over a century are

being dismantled into a diamond shape rather than a rocket shape. However, whether traditional pyramid models derived from the Cravath system or rocket-shaped or diamond-shaped models, these are not products of careful strategic planning by law firms but rather consequences of a series of short-term decisions made in response to a harsh, unfamiliar market [9].

Therefore, how to reshape law firm organizational structures, particularly partnership systems, under the influence of 21st-century new technologies is an urgent issue we need to address: how can law firms consciously reshape organizational structures and business models to maintain and develop their competitive advantages? After 19 years of legal services and law firm management practice and exploration, the author began implementing a flat partnership mechanism oriented toward social welfare and commercial services in 2017. The flat partnership organizational form has the value of separating ownership from direct management rights, enabling law firms to make effective and rapid decisions without relying on the co-governance voting of numerous partners with different interests and roles within the firm, and separating the firm's long-term investment returns from partner decision-making. This is because the flat partnership mechanism introduces a management committee and a supervisory committee system on the basis of partner meeting co-governance, creating management and supervisory bodies with full decision-making authority. Simultaneously, this partner equity system based on performance coefficients and investment proportion coefficients built on legal technology effectively implements a law firm valuation system. This avoids the contradiction between traditional law firm partners' short-termism and long-term firm operation, or the paradox that law firms have succession without inheritance, and further resolves arrangements for partners' long-term investment and retirement systems.

This decentralized flat partnership governance structure built on legal technology allows law firm partners to use modern technology to organize teams individually or temporarily around projects, enabling lawyer teams working together during project duration to produce more effective and creative solutions. Facts demonstrate that the flat partnership mechanism supported by legal technology not only does not reduce partners' current dividends but also enables consensus on obtaining greater future benefits and retirement system arrangements.

2.2 Improving Lawyer Management Systems

Whether a lawyer evaluation system is open, fair, and just is the core of law firm lawyer management. Traditional lawyer evaluation systems often focus on assessing lawyers' performance or revenue generation. Although law firms and industry organizations have established various incentive systems hoping to form a more comprehensive evaluation or assessment mechanism for lawyers, they often fail to achieve expected management benefits due to institutional deficiencies, human weaknesses, and technological constraints.

Now, legal technology can help law firms and industry associations generate new

management methods because new technologies are often developed as internal management tools for law firms. Digital lawyer evaluation systems allow lawyers (whether young or senior) to receive open and fair assessments, enabling lawyers to devote themselves wholeheartedly to work they truly enjoy while improving efficiency and enhancing their satisfaction with the firm. Through digital lawyer evaluation systems, they can break away from traditional roles of partners and non-partner lawyers, as well as hierarchical concept constraints arising from different partner division of labor, because they enjoy an open, unified standard digital lawyer work performance evaluation system that excludes human factors.

The author currently practices a universal scorecard (digital card) digital lawyer points evaluation system. This digital points card comprehensively evaluates lawyers' practice skills and professional ethics based on records of professional foundation, practice performance, professional 履历, professional integrity, and social welfare, primarily including performance points, welfare points, academic points, honor points, professional points, administrative points, etc. Therefore, legal technology can help law firms achieve digitalization of lawyer management and evaluation. Through digital lawyer points evaluation systems, law firms can effectively and comprehensively assess lawyers' careers and professional ethics norms, avoiding the drawbacks of unfair paternalistic or factional traditional law firm management.

2.3 Transforming Lawyer Service Models

Traditional lawyer service models have evolved from individual lawyer services to professional team services, and from traditional paper-based evidence to electronic evidence. Simultaneously, jurisdictions worldwide are accelerating the research, development, and application of legal technology in judicial reform, forcing lawyers to change and adapt to new service models. In the preface to *Digital Justice*, Richard Susskind proposes a thought experiment: in the future, judges may not need to appear in court physically, litigants may not need lawyer representation, and courts may provide dispute resolution services online rather than in physical form. It is certain that implementing ODR systems will greatly affect lawyers' litigation business. In the more distant future, dispute resolution will no longer be conducted by judges in robes holding gavels but by machines capable of data analysis. We need to provide convenient, efficient, and affordable dispute resolution mechanisms for all [16].

Currently, the proportion of non-lawyer personnel such as technical engineers and operations managers hired by law firms on major recruitment websites is rapidly increasing. Lawyer service models are also changing from single legal services to pan-legal services and cross-industry service models. Lawyers relying on legal technology to provide legal services to clients will become the new normal, bringing both challenges and opportunities to large and small-medium law firms. Now everyone is back on the same starting line, with the only difference being cognition and action regarding legal technology. The UK's 2007 Legal Services Act opened the legal services market in England and Wales to

capital, and the UK government has approved a €70 billion financial allocation for court system modernization and digitalization, with most funding directed toward online courts [17]. The Hangzhou Internet Court, established in 2017, is the world's first digital court providing online dispute resolution, followed by the establishment of Beijing Internet Court and Guangzhou Internet Court. Digital judicial reforms in courts nationwide are currently in full swing. During the three years of the COVID-19 pandemic, lawyers have gradually adapted to online work methods supported by new technologies, including online file review, online meetings, online trials, and online conferences. With the continuous advancement of digital judicial reforms worldwide, in the foreseeable future, lawyers will see reduced or even lost market share in standardized mediation, litigation agency, and defense business in civil, administrative, and criminal matters. Lawyers who master legal technology skills such as legal retrieval, similar case retrieval, visualized lawyer services, electronic evidence investigation, and live streaming will step onto the historical stage. Lawyers familiar with complex disputes involving multiple legal relationships and cross-industry, cross-jurisdictional non-litigation legal services will occupy the high-end legal services market. Traditional lawyer professional ethics become anomie in this context and need to be redefined in both connotation and extension.

3. The Integrated Development of Legal Technology and Lawyer Professional Ethics

In the 21st century, human society is experiencing a global new technology revolution marked by computer information technology and other high technologies. This revolution has already brought and continues to bring profound impacts on the working methods and moral values of the legal profession [18]. American jurist Roscoe Pound defined a profession as a group “pursuing a learned art in the spirit of public service,” a definition considered to have captured the essence of professionalism [19]. Scientific and technological progress enables the elite classes in culture, technology, finance, and law to rely on their mastery of existing systems and technology and their learning capabilities to leave the general public far behind, leading to social polarization [20]. The primary value of legal professional ethics lies in ensuring that legal professionals can dedicate themselves to the rule of law, defend the law, and uphold their identity as professional groups with special rights and corresponding special responsibilities, undertaking the mission of legal guardians [21].

3.1 Challenges of Legal Technology to Lawyer Professional Ethics

With technological development and the refinement of social division of labor, new challenges have emerged for traditional lawyer professional ethics. For instance, law firms have produced case-source lawyers or managing partners, as well as business lawyers who prefer practical operations. This new professionalism will lay the foundation for freer, more autonomous, and more creative legal practice, ultimately enabling law firm lawyers to return to the original source

of the legal profession—providing more respected legal services in private and public spheres [9].

Against the backdrop of digitalization in the legal field, UK' s Rradar Law Firm employs a large number of non-lawyer personnel, including engineers, project managers, and business analysts. In Denmark, many large law firms have begun incorporating non-lawyers into key roles (though operational power remains limited), such as Plesner, Bech-Bruun, Kammeradvokaten/Poul Schnith, and Kromann Reumert [9]. However, lawyer professional conduct codes in many countries prohibit lawyers from sharing legal fees with non-lawyers. For example, Rule 1.5 of the American Bar Association' s Model Rules of Professional Conduct (e) stipulates that lawyers who are not in the same law firm may only share legal fees if: (1) the fee division is proportionate to the services performed by each lawyer or each lawyer assumes joint responsibility for the representation; (2) the client consents to the arrangement, including the share each lawyer will receive, and the agreement is confirmed in writing; and (3) the total fee is reasonable. Article 26 of China' s Lawyers Law stipulates that law firms and lawyers shall not solicit business by denigrating other law firms or lawyers or by paying referral fees. The law prohibits lawyers from sharing legal fees with non-lawyers or allowing non-lawyer personnel to obtain ownership in law firms. This prohibition reflects concerns that non-lawyer control over the legal profession may cause lawyers to lose professional independence and that such control may have harmful effects on lawyers' professional rights and obligations.

3.2 Professional Ethics Risks from Technology Outsourcing

In the digital age, we must first consider whether legal technology companies can become partners in law firms. Second, does technology outsourcing generate professional ethics risks for lawyers? Finally, should law firm cooperation with technology companies be permitted, and should profit-sharing on legal fees be allowed? For example, can technology companies (such as live streaming companies) provide technical support and case sources for law firms and share profits? Currently, China' s Hainan Free Trade Port pilot program allows non-lawyers to become law firm partners, but this pilot only permits professionals such as accountants and evaluators to join law firms and does not allow external capital from legal technology companies to become partners. The UK' s 2007 Legal Services Act removed partnership requirements for partner lawyers in England and Wales, allowing the establishment of Alternative Business Structures (ABSs). This practice organization permits lawyers and non-lawyers to establish partnership law firms and allows law firms to accept external capital. ABSs enable lawyers (such as solicitors, barristers, and legal executives) and non-lawyers (such as accountants and real estate agents) to jointly manage law firms in new business entities [22].

We should focus on the fact that digitalization in the legal field is accelerating the transformation of the legal profession, and legal technology will promote the birth of new professionalism. First, with advances in legal technology, lawyers'

practical application of legal technology will become more automated, routine, and popularized. Second, the subject scope of the legal professional community will expand, and legal technology developers, users, and even systems using AI automated decision-making should be included within the subject scope of legal professional ethics regulation. Finally, legal technology has brought about the extension of traditional legal professional ethics and professional conduct norms, and legal technology itself should be included in regulatory scope to avoid infringement on clients' personal information, interests, and confidentiality obligations, while also preventing potential legal production control and monopolies arising from technological barriers. Simultaneously, under digital impact, legal professional monopoly is disintegrating, and non-legal competitors are playing increasingly new roles in the market. A new legal professional community will be born through continuous competition and 磨合.

3.3 Regulation of Legal Technology by Lawyer Professional Ethics

Lessig argues that there are four models regulating social interaction in human history: norms, markets, law, and code [23]. Therefore, we must discuss the ethical value of “governance by code” –the value judgments and ethical issues of legal technology.

On March 20, 2022, the General Office of the CPC Central Committee and the State Council issued the *Opinions on Strengthening Science and Technology Ethics Governance* [24] (hereinafter referred to as the “Opinions”), China's first national-level guiding document on science and technology ethics governance work, marking a new stage of systematization and standardization in China's science and technology ethics governance. In terms of content, science and technology ethics mainly includes: first, ethical requirements for scientific research; second, ethical requirements for technological innovation and development; and third, ethical requirements for technology application. Given that legal technology possesses dual attributes of technology and law, conducting science and technology ethics review and algorithmic impact assessment constitutes ethical consideration of its technological attributes, while examining whether legal technology applications can realistically interpret existing laws and whether they will gradually develop into emerging rights constitutes ethical consideration of its legal attributes.

In summary, legal technology must first address social acceptability of legal technology applications, including how to regulate legal technology and the extent of regulation, how to implement preventive ethics regulation on legal technology researchers and designers, and how to regulate lawyers as legal technology users through professional ethics. Second, the humanistic values that legal technology promotes and defends should include life, health, safety, knowledge, opportunity, capability, democracy, happiness, peace, and freedom. Finally, legal technology ethics should follow the legal professional ethics values of cultivating both moral integrity and legal expertise.

In conclusion, legal technology and lawyer professional ethics should integrate and develop by achieving theoretical identification with both technology ethics and professional ethics, including technology, interests, responsibility, trust, rules, and ideals. Legal technology will enrich and develop lawyer professional ethics, and legal technology regulated by professional ethics will also enhance human welfare and social fairness and justice. This includes: first, legal technology helps law firms achieve digital transformation and development because law firms can obtain tailored technology they need, while legal technology companies can thereby develop large-scale, well-functioning products for the general market. Second, non-lawyers will use legal technology to enter the legal services market and join market competition, while law firms using legal technology can meet clients' demands for higher-quality legal services. Third, the interaction between legal technology and lawyer professional ethics will promote the realization of digital justice values such as social fairness, openness and transparency, privacy protection, safety and controllability, and people' s welfare.

We believe that legal technology and lawyer professional ethics, as representatives of legal professional ethics, will integrate and develop into legal technology ethics. As an academic discourse and theoretical expression of “new technology” in the legal field, legal technology ethics is a highly valuable research area—exploring the value and general laws of legal technology ethics in the information age. In the future, this research should continue to advance in areas including legal technology and lawyer practice, robot lawyers, law firm digitalization, and the construction of legal technology ethics standards and systems, so that legal technology ethics can play a positive role in judicial standards, regulatory mechanisms, risk prediction, and social governance, contributing to national rule of law construction in the digital era.

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Note: Figure translations are in progress. See original paper for figures.

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