Expand or Maintain: The Boundaries of Lawyers' Duty of Competence in the Technological Era

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Abstract

Rapid technological development has brought new changes to the boundaries of lawyers' duty of competence. The American Bar Association's Model Rules of Professional Conduct have expanded lawyers' duty of competence by introducing concepts of lawyer technological capability and technological competence, but this expansion has also faced criticism and questioning due to its relatively aggressive progression. Compared with American legal professional ethics, China's rules of lawyers' professional conduct still maintain existing requirements regarding lawyers' duty of competence; however, maintaining the rule text should not be equated with maintaining the boundary of the duty of competence. In the technological era, appropriately expanding the boundaries of lawyers' duty of competence possesses legitimacy. The current norms of lawyers' professional conduct should be adjusted accordingly based on the different types of technology involved in legal practice. First, the connotation of current norms on lawyers' duty of competence should be expansively interpreted to encompass "skill"-type technologies; second, requirements for lawyers' mastery of "craft"-type technologies should be specified to preliminarily expand the boundary of the duty of competence. Simultaneously, to achieve reasonable expansion of the connotation of lawyers' technological competence, supporting regulatory measures should also be constructed in parallel for other technology-utilizing participants in the legal services market. Through comprehensive policy measures to reconstruct the boundary scope of lawyers' duty of competence, ensuring that lawyers possess technological capabilities and technological competence commensurate with the technological era.

Full Text

Abstract

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Rules of Professional Conduct have expanded lawyers' duty of competence by introducing concepts of technological competence and technological competency, though this expansion has faced criticism for being overly aggressive. In contrast, China's professional conduct rules for lawyers maintain existing requirements regarding the duty of competence. However, maintaining the textual rules should not be equated with maintaining the boundaries of the duty of competence; in the technological era, appropriately expanding the boundaries of lawyers' duty of competence is justified. Adjustments should be made to current professional conduct norms based on different types of technology involved in legal practice. First, the scope of existing competence provisions should be broadly interpreted to encompass "skill-based" technologies. Second, explicit requirements for mastering "technological" capabilities should be established to initially expand the boundaries of the duty of competence. Simultaneously, to achieve reasonable expansion of technological competency, supporting regulatory measures should be constructed for other technology-utilizing participants in the legal services market. Through comprehensive measures, the boundary of lawyers' duty of competence can be reconstructed to ensure lawyers possess technological capabilities and technological competency commensurate with the technological era.

Keywords: technological competence; legal professional ethics; technological competency; lawyers; duty of competence

1. Introduction

We live in a technology-constructed society where technology permeates every aspect of life with increasingly diverse forms and accelerating speed, making it nearly impossible for any socialized individual to avoid. The same holds true for professions, as an increasing number of industries are influenced by technological development. Initially, policymakers and top-level designers—those knowledge-intensive workers or so-called social elites—paid little heed, remaining enthusiastically engaged in arguing how AI development might replace manual laborers or enhance production line efficiency, while "compassionately" planning transition schemes for these "visible or foreseeable" displaced workers. However, the rapid advancement of AI technology has far exceeded expectations. Technology products and tools represented by generative artificial intelligence, such as ChatGPT and large language models, are delivering heart-striking blows to professions, populations, and fields traditionally considered unchallengeable—including the legal profession.

In the process of technological evolution, computer scientist Vernor Vinge proposed the "Singularity" theory, positing that at this juncture, machine intelligence and related technologies would achieve astonishing rapid progress. Once the "Singularity" is crossed, technology would transform "like a dragon encountering wind and rain," becoming so-called "superhuman."[1] Against this backdrop, the legal industry is gradually approaching its own "Singularity" moment. How should legal professionals choose? What impacts or shocks will technology

bring to the legal profession, legal market, and industry ecosystem? Will the conduct standards or professional responsibilities of legal practitioners, particularly during practice, change due to technological intervention? Faced with emerging technologies, how can lawyers be deemed diligent and responsible to their clients? These questions constitute the origin of this inquiry.

2. Technology Development Driving the Expansion of U.S. Lawyers' Duty of Competence

As both a technological powerhouse and a quintessential "lawyer nation," the United States' professional conduct rules for lawyers serve as an ideal blueprint for observing the development of legal professional ethics in the technological era and a viable object for comparative study.

2.1 Proactively Establishing Technological Competence Provisions

To address the development of a technological society, the American Bar Association (ABA) updated Comment 8 to Rule 1.1 of its Model Rules of Professional Conduct—hailed as a paragon of legal ethics rules—as early as 2012. The format of the ABA Model Rules resembles that of the Restatements of the Law and the Uniform Commercial Code, with each rule stating a principle followed by official comments that explain the rule's meaning and purpose. Rule 1.1 has long required lawyers to provide competent representation to clients and is thus regarded as the legal source of the "duty of competence" in the American legal profession. As the opening provision of the entire Model Rules, Rule 1.1 undoubtedly highlights the importance of lawyer competence as a cornerstone of legal professional ethics.

The update to Comment 8 of Rule 1.1 revised the text from "To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, engage in continuing study and education, and comply with all continuing legal education requirements to which the lawyer is subject" to "To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology, engage in continuing study and education, and comply with all continuing legal education requirements to which the lawyer is subject." The added phrase "including the benefits and risks associated with relevant technology" is considered the ABA's imposition of a technological competence requirement on practicing lawyers, substantially expanding the scope of the duty of competence. The wording of this obligation was intentionally made broad, with "relevant technology" under a literal interpretation framework meaning unrestricted in both temporal and spatial scope. Consequently, the ABA's modification is widely regarded as bold, assertive, and radical.[2]

2.2 Divergent State Practices Toward Technological Competence Provisions

Driven by the ABA, as of February 2023, a total of 39 states[3] have adopted ethical responsibility rules regarding technological competence from the ABA Model Rules. Among them, 25 states have adopted the exact language from the Model Rules, while the remaining states have made further modifications or supplements to the technological competence obligation framework.

Some states have chosen to establish specific guidance bodies to enhance operability, such as Delaware's creation of a "Commission on Law and Technology" to provide adequate guidance and education to lawyers. Other states have chosen to specify the technological boundaries of the provision: New Hampshire limits relevant technology to that which may be used in the practice of law within the state, using state bar practice conditions as the boundary for determination; North Carolina narrows relevant technology to that actually used by lawyers; New York explicitly defines it as situations involving electronic encryption used by lawyers to communicate confidential information to clients; and California, concentrated with new technology industries, requires lawyers to review potentially involved technology at the outset of representation but does not require lawyers to master the technology themselves, instead reducing the lawyer's technological obligation to discovery and identification, solving technical difficulties through purchasing or delegating to third-party technology services. Additionally, some states like West Virginia have chosen to employ stronger language than the ABA rules, further intensifying regulatory requirements for lawyers' technological competence.

Among the remaining states, some, such as Washington D.C. and Georgia, believe that providing specific technology lists for enforcement is unfeasible and have therefore not yet adopted the provision, excluding the technological competence clause from their state bar practice norms.[4]

2.3 Critiques of the Aggressive Expansion of the Duty of Competence

The ABA's expansion of lawyers' duty of competence has encountered resistance from "conservative forces" defending the traditional conception of competence, primarily for the following reasons:

1. **The Boundaries of "Relevant Technology" Are Overly Broad and Uncertain** The pace of future technological development may far exceed human imagination. Therefore, ethical obligations should not be made overly specific to maintain flexibility. However, excessively vague rules are dangerous for ensuring flexible responses to future scenarios, creating difficulties in interpretation and application. First, "relevant technology" is undoubtedly a term with very indistinct boundaries: which technologies are relevant? Is merely becoming a user of technology sufficient to make legal professionals competent? Second, the "blank space" created for technological expansion exacerbates the potential for arbitrary judi-

cial expansion of power. Courts might thereby bring any technological tool potentially used by lawyers within the scope of the provision, increasing lawyers' burden to master more technologies on one hand, while on the other hand potentially becoming a pretext for courts to deliberately limit lawyers' adversarial capacity, elevating the risk of rent-seeking by power influenced by technological interests. This artificially introduces more complex ethical dilemmas for the legal profession.

Currently, the most mainstream improvement approach among states for the amended provision involves creating "positive lists" of relevant technologies to narrow the rule's scope and enhance semantic clarity, thereby achieving limited expansion of lawyers' technological ethics. However, how to most accurately and reasonably compile these "positive lists" remains a matter of opinion, influenced by multiple factors including the cognitive capabilities of technology officials in the jurisdiction, legal practice conditions, and characteristics of the bar.

2. **Insufficient Justification for Punishing Lawyers Who Fail to Keep Pace with Technology** Compared to organizational governance rules in other highly specialized professions, the technological competence requirement for lawyers is undeniably stringent. For instance, while American professional engineers are required to provide services only within their "competence," the National Society of Professional Engineers' code of ethics does not impose a professional ethical obligation similar to that stipulated in Comment 8. Similarly, under the International Ethics Standards Board for Accountants' professional rules, accountants have no ethical obligation related to technological competence. The Code of Ethics for Professional Accountants states that "maintaining professional competence requires ongoing awareness and understanding of relevant technological, professional, and business developments." However, the manual limits "technology" to that which "belongs to or is related to a particular subject" (such as analysis of financial statements and budgetary controls), and does not require accountants to constantly understand the benefits and risks associated with relevant accounting technologies. This means accountants need not master complex technological scenarios such as the role of AI tools in tax accounting—whereas lawyers are expected to fully consider and evaluate AI's function in representation services. Even the more specialized medical profession's technological competence obligation is limited to scenarios involving social media use or providing medical services through remote communication technology, with a very clearly defined scope.[5]

The minor differences between the legal profession and other professions that similarly rely on specialized skills are insufficient to support such a heightened technological competence obligation. Overly broad professional ethical restrictions increase lawyers' uncertainty about potential risks in their professional conduct and aggravate their burden of performance. Compared with the uncertain benefits that strict technological competence requirements might bring to

industry advancement, these tangible harms are hardly balanced and represent a disproportionate imposition.

3. **Using the Provision as a Basis for Discipline in Practice Violates the Rule's Original Textual Meaning** Expanding professional obligations implies heightened professional responsibility and disciplinary consequences when lawyers fail to properly fulfill these obligations. In U.S. judicial practice, numerous local court precedents have penalized lawyers for lacking technological competence based on their inability to properly handle technology in cases, concluding that they failed to meet competency obligations. This effectively treats Comment 8 as a mandatory rule. If Comment 8 were a mandatory requirement for lawyers to enhance technological competence, it should use the imperative "shall" rather than the hortatory "should" that it actually employs. Therefore, Comment 8 constitutes a supplementary articulation of the "knowledge and skill"[6] that lawyers should possess, with improving technological competence being a guiding suggestion for enriching lawyers' own "knowledge and skill." Opponents argue that the legislative purpose of Comment 8 renders its related provisions unsuitable as mandatory commands requiring lawyers to possess technological competence, and even less appropriate as an additional source for initiating disciplinary authority.[7]

2.4 Summary

The essence of the ABA rules' expansion lies in requiring lawyers to master technological competence and creating the concept of technological competency. Technological competence is a composite definition of "technology + competence." Technology refers to "modern equipment, machines, and methods based on contemporary scientific and computer knowledge," such as all network-connected products and scenarios encountered in daily life. Competence refers to the "mental capacity to understand problems and make decisions," such as a lawyer's ability to competently represent a client, meaning the lawyer possesses the conditions to apply comprehensive legal knowledge and skills required for representation. Technological competence, therefore, is the mental capacity to understand problems and make decisions regarding modern equipment, machines, and methods based on contemporary scientific and computer knowledge.

Evolving technology has rapidly impacted legal practice, challenging traditional concepts of lawyer competence. The ABA rules and modifications to state bar professional conduct rules are requiring lawyers to respond to technological changes and achieve technological competency by enhancing technological capabilities. This expansion of conduct rules stems from high regard for legal professional ethics. In summary, technological competence requirements arise from adherence to professional ethics, while enhancement of technological competence follows professional ethics. The expansion of the duty of competence and technological development move in the same direction. The American experience provides a vivid observational window for the "expansion" of professional

ethics rules.

3. Chinese Professional Conduct Rules Maintaining Existing Requirements for Lawyers' Duty of Competence

Compared with the United States, which has taken a major step forward in expanding lawyers' duty of competence, China's current professional conduct rules for lawyers have not introduced new detailed provisions or adjustments to this duty. The latest "Code of Conduct for Lawyers (Trial)" was revised in 2017. Articles 7[8] and 36[9] stipulate lawyers' duty of competence, with diligence and protection of clients' lawful rights and interests constituting the normative connotation of this duty. A review of normative documents such as lawyer practice conduct codes issued by various municipalities, provinces, and autonomous regions reveals that provisions on lawyers' duty of competence essentially follow the "Code of Conduct for Lawyers (Trial)" (see Table 1 for details), with few providing detailed elaboration or special requirements specifically addressing the duty of competence. The "Guiding Opinions of the Fujian Provincial Bar Association on Determining Inadequate Performance of Lawyers' Duties," passed in September 2021, represents the first formal detailed rule issued by a local bar association in China regarding lawyers' diligence and competence requirements. It specifies the duty of diligence and competence by enumerating negative instances of inadequate performance. However, even this guiding opinion fails to address or provide guidance on the application of legal technology in lawyers' practice.

3.1 Maintaining Rule Text Should Not Equate to Maintaining Practice Standards

In the technological era, the environment and challenges faced by lawyers in practice are becoming increasingly rich and complex. Turning a blind eye to the technological world is like an ostrich burying its head in the sand. The legal community must 清醒地 recognize that technological development will inevitably impact the legal profession and practice, potentially creating a series of ethical and normative dilemmas. This impact is unavoidable. After accepting the visible advantages technology brings to legal work and services—such as improved efficiency, cost savings, and scale expansion—the legal community should also "embrace" the accompanying drawbacks.

Lawyers should actively utilize updated technology to serve clients faithfully and diligently, continuously maintaining learning and exploration of new technologies. The process of embracing technology also presents a significant opportunity for lawyers to shift perspectives and provide higher-quality legal services. In terms of practice philosophy, lawyers should prepare mentally for the possibility that the connotation of the duty of competence may expand, particularly regarding technological competence.

3.2 Justification for Expanding the Specific Connotation of Lawyers' Duty of Competence in the Technological Era

The justification for expanding the duty of competence is rooted in "one central principle and two basic points."

1. **One Central Principle: The Legal Foundation of Competent Representation** Lawyers should cautiously handle client matters within the boundaries of their own capabilities, strive to develop and maintain mastery of the matters they represent, and should only accept employment for matters within their competence. The series of concepts regarding lawyer competence stipulated in the ABA can be traced back to the early days of the legal profession, with "providing representation within one's competence" becoming a consistent thread of professional ethics. If a client's representation involves technological operations that the lawyer cannot understand, or if the lawyer's improper or delayed use of technological tools in handling client matters results in 拖沓 representation, it will actually diminish the quality of representation provided. Expanding lawyers' professional responsibility to include mastery of corresponding technological capabilities is precisely based on competence requirements, with technological competency representing the latest dimension of competent representation in the technological era.

2. **Basic Point One: Internal Motivations for Expanding Lawyers' Duty of Competence** (1) **Increasingly Rich Application of Technological Tools in Legal Practice Technological Elements Cannot Be Ignored in Court Proceedings** Technological changes in information storage and collection have altered the scope of evidence collection in litigation. The emergence of cloud storage enables data to be stored far from end users, with parties having access to increasingly vast amounts of information that can be obtained, exchanged, and transferred at accelerating speeds. Data information can also be copied, edited, and stored across multiple devices in various forms and channels. Compared with paper documents, this means parties' requirements for evidence collection timeliness and information management methods have undergone tremendous changes. Traditional methods of retrieving, collecting, and examining paper documents or evidence cannot be seamlessly applied to digital information evidence clusters. Simultaneously, the rise of online litigation rules and the development of litigation business in the internet domain also require legal professionals to actively enhance their technological capability reserves to address legal practice under new circumstances.

Clients Need Lawyers with Technological Competence to Provide More Efficient Legal Services Under current technological development conditions, clients have more urgent expectations for high-quality legal services that adapt to technological trends. From the client's perspective, the high legal service fees they pay aim to achieve desired legal outcomes, with increasing billing

time and rising expectations driving improvements in legal service quality and efficiency. Faced with complex client demands, lawyers with profound technological understanding and complete technological capabilities can potentially enhance service effectiveness—precisely the type of lawyer clients expect.

Beyond providing direct legal services to clients, lawyers must also provide other extralegal advice based on client interests to ensure clients' potential actions are more compliant and closer to their expected interests. To provide appropriate advice, especially in emerging technology fields, lawyers must have necessary understanding and familiarity with the involved technologies. Although law and these technologies alike appear to be specialized knowledge requiring dedicated expertise, fierce market competition compels lawyers to engage in self-directed learning and improvement to enhance representation capabilities and professional levels in order to meet client expectations.

(2) **Current Technological Competence Levels of Lawyers Cannot Meet Legal Practice Needs** Compared with rapidly developing technology, a considerable number of lawyers today still maintain inherent conservative attitudes, unwilling to make additional investments in improving technological competence. This clearly fails to keep pace with the practical needs of the legal services market and legal practice. Before market rules of survival of the fittest complete the natural stratification of lawyers, incorporating technological competence requirements in the rules will help spur and awaken a cohort of complacent lawyers.

3. **Basic Point Two: External Motivations for Expanding Lawyers' Duty of Competence** (1) **Enhanced Technological Competence Will Expand Legal Service Coverage** Leveraging technological competence to assist with legal matters can improve efficiency and minimize work errors, reducing lawyers' workload and the substantial costs associated with lengthy labor hours, potentially leading to lower service fees. In the past, individuals unable to afford hourly billing were often excluded from legal services. However, with improved technological competence and increased work efficiency, more people will have access to legal service resources, and lawyers can safeguard justice for broader audiences[10], which also aligns with the public dimension of the legal profession.

(2) **Lack of Technological Competence Increases Professional Risks for the Legal Profession** Precisely because technology is ubiquitous, many actions by legal professionals may already fall within the scope of technological ethics regulation. For example, some judges or prosecutors who lack caution in social media use, casually adding parties or their lawyers and engaging in daily social media interactions, may be viewed as having "abnormal contacts" sufficient to affect impartial adjudication, causing procedural defects in case adjudication. Some jurors who casually post or display opinions about ongoing litigation on online platforms may affect public trust in judicial independence. Beyond abuse or misuse of technology, deliberate avoidance of technological means in some contexts

is also viewed as lacking technological competence. For instance, judicial officials who fail to process litigation materials through designated online platforms or follow standardized online workflows—where technology sometimes serves as a neutral supervisory tool that can minimize human subjective arbitrariness through workflow standardization—may affect the fairness of judicial decision-making because their personal subjective ideas often escape technological supervision and monitoring. Lawyers similarly face consequences of representation failures or professional rule violations due to improper treatment of technology. Technological competence hangs like the Sword of Damocles over every legal professional who neglects it.

(3) **Continuing Education Mechanisms Provide Enforceability for Modifications** In the ABA Model Rules of Professional Conduct, the primary method for keeping lawyers current with legal knowledge and skills is the Continuing Legal Education (CLE) mechanism. In American legal practice, some courts have already considered imposing corresponding discipline on lawyers who fail to comply with CLE requirements. Faced with rapidly developing and changing technology, requiring lawyers to complete a certain amount of CLE annually on technological competence enhancement can maintain their technological capabilities, preventing the ABA rules from proposing "an unenforceable fantasy." Similarly, some regional lawyer practice conduct rules have made provisions in this regard. For example, the "Beijing Lawyers' Practice Conduct Rules (Trial)" establishes "striving to study practice and continuously improve professional standards"[11] as one of the basic principles of lawyer practice. This provides a normative basis for lawyers to enhance technological competence through continuing training. In practice, training videos or learning resources from local bar associations or judicial administrative departments have already given some attention to improving lawyers' technological literacy.[12]

Admittedly, some opposing voices argue that these continuing education courses are unnecessary, inconvenient, and of limited value, with the real purpose being merely to create an external appearance of concern for legal service quality. Critics also contend that while improving technological competence is a professional obligation, the additional costs of training will partially be transferred to clients, which is unfair to them. However, even if such situations may exist, we should acknowledge that improving the overall lawyer corps' standards and protecting client interests are fundamentally consistent. The "costs" paid by clients are, in a sense, also "payment" for higher-level protection of their lawful rights and interests.

4. Types of Technology Involved in Legal Practice

Regardless of one's current attitude toward the boundaries of lawyers' duty of competence, the primary issue to address is the delineation of the technologies referenced in "technological competency" and "technological competence."

4.1 IA (Intelligence Augmentation) Technologies

1. **Using Existing Technological Tools or Equipment** This constitutes the most basic content of lawyers' technology utilization. The technologies involved do not present special knowledge barriers or cognitive difficulties, and the technological competence required to implement such technological behaviors is no different from using smart products in daily life, though in some cases it may formally bear characteristics of legal affairs. For example, in some U.S. states, procedural rules require lawyers to submit pleadings electronically or in other prescribed formats, or to file litigation materials on designated websites. Additionally, more common operations such as using cloud storage like network drives or digital storage to preserve litigation materials and client information are also considered manifestations of technological competence.

Evidently, this is a fairly basic technological competence that even ordinary people without special professional responsibilities or obligations can easily and willingly master.

2. **Proactively Applying Technology for Information Processing** (1) **Proactive Information Retrieval and Collection** Compared to using mature technological tools, proactive information collection and processing represents an advanced technological competence. In legal practice, the most common applications involve the collection and enumeration of electronic evidence and the summarization of case (precedent) information. In the digital age, massive amounts of information circulate and exchange in the cloud through electronic data forms, with an increasing number of cases involving the preservation and authentication of electronic evidence. Specialized rules govern the retrieval and presentation of electronic evidence, requiring lawyers, judges, and prosecutors to examine and analyze evidentiary materials according to electronic litigation rules. Only familiarity with relevant procedures and standards can ensure electronic evidence fulfills its intended effectiveness, demanding that legal professionals possess the ability to utilize electronic discovery tools and understand digital evidence composition and collection principles and processes. Meanwhile, with the advancement of the "similar cases, similar judgments" and case retrieval reforms that draw on the advantages of common law precedent-based adjudication, conducting similar case analysis for litigation matters has gradually become an important work focus for Chinese legal professionals. The process of reasonably breaking down case key points, using appropriate and accurate search criteria, accessing authoritative legal databases, and thereby obtaining case retrieval reports is also known as "legal discovery."

These technological competencies have distinct professional attributes that ordinary people without specialized training cannot complete, and obvious competency hierarchies exist even among members of the legal professional commu-

nity. These can be termed a type of proprietary technological competence with certain learning thresholds.

(2) **Social Media Use** Social media has become a commonplace part of daily life for everyone. However, precisely because social media functions are increasingly rich and its binding degree with personal life continuously strengthens, social media interactions often exceed the original communicative intent, making social media a semi-public carrier of complex interpersonal relationships and personal life states.

In adjudication activities, actions such as parties and judges becoming contacts on social media may be considered "contacts that may affect impartial justice." Judicial officials' posts or reposts on social media may be deemed to "undermine judicial independence." Parties' comments or life records using social media may also become key evidence affecting case outcomes. Lawyers' use of social media for legal services or advertising may also fall within the scope of professional conduct rule regulation… Information retained on social media implies public disclosure, and this information dissemination often accompanies privacy breaches and violations of specific confidentiality obligations and responsibilities by legal professionals. To maintain the important values of independent and impartial justice, legal professionals in an active technological environment should fully recognize the legal issues involved in social media use and exercise greater prudence in using social media. However, achieving "full recognition" and "prudence" is not easy, requiring gradual exploration and summarization in practice to form technological competence regarding proper utilization and management of social media—a scientific ability to constrain and control oneself and even relevant parties' behavior (such as lawyers guiding clients to properly use social media to maximize legal advantages).

4.2 AI (Artificial Intelligence) Technologies

These technologies represent deep technologies typified by algorithms and artificial intelligence. When networks become as indispensable and commonplace as electricity, air, and water, we undoubtedly find ourselves in an information society. Similarly, based on the fact that networks have rapidly proliferated and become widely utilized, algorithms and big data computing have extended into numerous aspects of life, with algorithmic factors present in or influencing all facets of our existence. Algorithms have become an important background and foundation of life, and in this context, we have no choice but to enter the next stop of the information age: the algorithmic era.

An algorithm is a method for solving problems by processing data information through computer language calculations. The power of algorithms lies in their ability to automatically analyze and obtain patterns from data through program settings, and use these patterns to further predict and calculate unknown data—what we call "machine learning" or "deep learning."[13] Examples include data mining of personal information or past adjudication information and juror

information, and targeted information push and automatic data screening in competitive selection processes like recruitment.

Algorithms provide powerful efficiency functions such as retrieval and prediction. However, the function settings and result presentations of algorithms are outcomes calculated by the algorithms themselves, which may not necessarily match human actual needs or objective reality. During computational analysis, problems such as technological bias may arise from technical settings,[14] thereby affecting the fair treatment of certain legally protected rights. The recently popular generative artificial intelligence also uses deep learning algorithms as its underlying logic, employing broader training samples and larger foundational data resources. Legal professionals have the necessity and obligation to respond to changes in legal relationships under new technological conditions, and providing effective responses requires legal professionals to understand the underlying logic or basic operational rules of this new algorithmic technology—undoubtedly a challenging technological competence. Precisely because of the sophistication and complexity of algorithmic technology, controversy exists over whether legal professionals should be required to possess technological competence specifically for algorithms.

4.3 Summary

In summary, legal professionals' technological competence can be broadly divided into "technical" skills that simply enhance efficiency through tool utilization, and "technological" mastery that disrupts traditional legal industry perspectives. Similar to the core conflict between McCarthy and Engelbart regarding developing IA versus AI, the question is whether to expect lawyers to focus on increasingly powerful computer hardware and software that may replace humans, or to require them to master technological tools that similarly enhance their own capabilities.[15]

With the expansion of technological tools and lowered thresholds for technology access, using technological tools to assist legal service provision has become commonplace. Most current law school students can proficiently conduct searches and analysis through legal databases such as Beida Fabao, Wolters Kluwer, and Westlaw, while specialized legal technology companies like MetaWritingCat have gradually penetrated the daily work of legal professionals. IA-level competence has gradually shifted from being a bonus or highlight for legal professionals in the past to becoming an essential part of required professional skills and literacy. Mastery of this type of technology has already formed relatively broad consensus within the industry.

5. Two-Tiered Response of Chinese Legal Professional Ethics to Technological Development

Regardless of how technology develops, the fundamental ethical principle of lawyers being diligent and responsible to clients and achieving competent rep-

resentation remains unchanged. Enhancing technological competency is reasonable, and expanding the boundaries of lawyers' duty of competence is necessary. To reasonably achieve this expansion path, different responses should be established based on different types of technology in the legal profession.

5.1 Broadly Interpreting Current Lawyer Competence Provisions to Encompass "Skill-Based" Technologies

Diligence and responsibility mean lawyers should provide comprehensive, full-process legal services to protect clients' lawful rights and interests. As technology constitutes an important element in today's legal services, it should naturally fall within the scope of lawyers' diligent work. To enhance the professional standards and legal service quality of the lawyer corps, even while maintaining the textual rules of professional ethics, it is at least necessary to broadly interpret and understand the competence provisions in the Code of Conduct. Lawyers should fully master or at least know the channels and methods for applying and obtaining the aforementioned "IA-type" technologies. There is little controversy regarding lawyers mastering tool-based "skill" technologies such as sending and receiving emails, communicating with clients using certain encryption methods, and being familiar with the retrieval and collection of electronic evidence information. In fact, most lawyers have already subconsciously developed awareness of this "tool-based technological competence." Notably, some domestic provinces have already issued detailed normative guidance for such lawyer practice behaviors, effectively expanding and solidifying the professional ethical boundaries of "skill-based" technological competence, with the "Guangdong Province Lawyers' Online Speech Conduct Code"[16] being a typical example.

5.2 Establishing Explicit Requirements for Mastering "Technological" Capabilities

Lawyers' technological competence should not be boundless. Requiring lawyers to become experts in algorithmic rules or artificial intelligence is unrealistic, and lawyers have no intention of delving into the technical world belonging to programmers. The speed and degree of technological change far exceed the innovation cycle of rules. Therefore, it is inappropriate to expand the duty of competence boundaries in professional conduct rules by creating "technology positive lists" that prescribe technology catalogs for lawyers. The key to improving technological competence construction lies in enhancing lawyers' ability to handle the series of problems brought by algorithms, making unfamiliarity with algorithmic technology no longer a defense for lawyers to evade diligence responsibilities. Specifically, the expansion of technological competence boundaries should focus on the following two aspects:

1. **Maintaining Independent Thinking and Judgment in a Technological Environment** Algorithms provide numerous conveniences for information collection, such as conditional retrieval and automatic search.

However, the search sources and result presentations of these retrieval functions are calculated outcomes based on algorithmic settings, which may not necessarily align with human actual needs or accurately reflect real conditions. Yet, benefiting from the enormous temporal and energetic advantages brought by mature algorithmic products, humans are developing intellectual laziness based on technological development, gradually cultivating habits of unwillingness to think deeply and analyze, excessively believing in and relying on mechanically calculated results provided by algorithms, leading to overly superficial and simplistic thinking. This indulgence gives algorithms more space and opportunity to replace human thinking. In short, algorithmic results cannot equate to the human process of thinking and analyzing problems, and simplified searches are posing severe challenges to logical thinking habits that should be rigorous. We should be vigilant against algorithms gradually forming a new type of "technological authority" state.[17] If algorithmic decision-making tools are regarded as a new authority, we will find it difficult to resist the thinking pattern of appealing to authority. Based on this mindset, humans will fall into "output obsession"—unquestioning belief in computer program outputs. Once algorithms act as "specialized knowledge" in judicial processes, they acquire corresponding symbolic power, and the "power-knowledge" relationship[18] formed by this complex and covert algorithmic process leads to algorithms being endowed with ultimate authority. Lawyers must integrate and interpret relevant legal issues on social consensus by combining their inherent knowledge systems with the technical rationality of algorithmic programs[19], strengthening self-awareness of responsibility and human subjectivity. They cannot simply substitute algorithm-generated results for their own reasoning and argumentation, but must always maintain the presence of self-rationality in legal affairs.

2. **Identifying Legal Issues in Technology Operations** Machine learning is susceptible to contamination by erroneous data, and improper setting of operational conditions will cause data bias errors to snowball. Faced with discrimination arising from algorithms, lawyers are not required to understand the mechanisms by which discrimination is generated during algorithmic computation. Lawyers' responsibility lies in using rich practical experience and professional capacity to clearly and keenly judge the fairness of algorithmic operation results, thereby exposing legal risks and emerging legal issues in algorithmic decision-making processes. Maintaining sensitivity and attention to technology operation results will benefit early intervention and risk management.

Lawyers should explain these risks to their clients to prompt them to pay attention to technology tool applications. For example, lawyers must promptly inform clients when technology application has already produced illegal consequences, and such consequential production behaviors must be addressed and adjusted. Simultaneously, lawyers should use their experience to provide early warnings of potential risks when clients engage in technology behaviors with high

probabilities of past illegal consequences, informing clients of typical manifestations and types of illegal behaviors and urging them to adjust discriminatory practices. This is not only behavior of lawyers diligently fulfilling their duty to protect client interests, but also protects the rights of more ordinary people in the labor market who may be covered by algorithms through lawyers' professional conduct, which also aligns with the public and independent requirements of the legal profession.

If lawyers lack this awareness or sufficient vigilance in identifying problems, they will be deemed to lack technological competence in the algorithmic era and information society, fail to follow legal professional ethics, bear risks of malpractice, and may assume relevant responsibilities and face discipline.

Highlighting the independent status of technological competence in lawyers' professional ethical rules and moderately expanding the boundaries of lawyers' duty of competence should focus on learning from lessons such as the ABA Model Rules' vaguely defined conceptual boundaries. Using "maintaining independent thinking" and "identifying problems" as demarcation principles for technological competence, and adding open-ended statements about technology training in lawyers' education and training provisions, will draw the attention of the lawyer corps while reserving space for future technological development and facilitating coordination between the Code of Conduct and relevant legislation and rules in the technology domain.

6. Epilogue: Constructing Supporting Regulatory Measures for Other Legal Services Market Participants

Due to regional disparities in economic levels, technology popularization, and infrastructure conditions, beyond stipulating the judgment and identification capabilities lawyers should possess when facing such new technologies, the expansion speed of lawyers' duty of competence in professional ethics should be allowed to lag behind the evolution speed of technological development. Lawyers need not become the group chasing the most cutting-edge technology in the social division of labor. However, this gradual expansion requires supporting regulatory measures for other participants in the legal services market who utilize new technologies.

6.1 The Necessity of Regulation

New-generation AI technologies seeking deployment in the legal industry carry the professional positioning or role expectation of replacing legal professionals. Examples include legal robots and AI lawyers. Through legal AI, ordinary people may potentially seek help from AI rather than professional lawyers to resolve their legal problems. AI's ambition is to carve out a share of the lawyers' market. Law firms form service advantages by concentrating professionally qualified lawyers, while legal consulting companies or similar institutions may form their own comparative advantages by concentrating AI resources with faster comput-

ing power and higher automation capabilities, posing challenges to traditional human lawyers.

After AI enters the legal profession, it will accelerate the differentiation of the legal services market. As Liu Sida proposed in his book *The Logic of Fragmentation*, the will to contest and demarcate boundaries in the legal services market persists, particularly among populations and organizations outside the traditional legal professional community, who continuously attempt to impact the unified, relatively closed market.[20] This unceasing attempt was already intense during the "tool technology" era, but constrained by the potential of technological application, such contestation was relatively difficult at that time. However, AI development, especially when AI may "cross the Singularity," could introduce new game rules for this competition, allowing external contenders to more quickly occupy the forefront and upstream positions than the conservative legal professional group inclined to maintain the status quo. When highly intelligent technology intervenes in boundary contests within the legal services market, the "boundary" between legal professionals and non-legal professional groups will become increasingly difficult to delineate, directly challenging the stability of the legal professional community.

Under the current regulatory framework, these non-lawyer (or non-law firm) legal service providers enjoy the conveniences of the free market and the shelter of high autonomy while remaining unconstrained by judicial administrative departments or professional self-regulatory organizations, and naturally escape the discipline of legal professional ethics.

When disputes arise between clients and non-lawyer legal service providers over service quality or form, the competent authorities for legal service providers (generally market supervision and management departments) can often only review the external legality of the services provided but cannot ensure their substantive legitimacy. When clients seek help from judicial administrative organs or bar associations based on the service model provided, they are left without recourse. In judicial practice, courts also exhibit inconsistent attitudes on this matter, showing reluctance to intervene in reviewing the qualifications or services of legal service providers.

If lawyers are required to intensify development and exploration of technological competence to gain competitive strength, while simultaneously adhering to strict professional ethics and providing full representation to clients only according to fee rules[21] during this enormous and difficult exploration, it is clearly inequitable. To achieve "weapon equality" for lawyers in competition with these "unfettered" legal service providers, when it is inappropriate to strengthen lawyers' technological competence—that is, to continue deepening lawyers' technological competency and expand the boundaries of their duty of competence—regulating other legal service providers becomes reasonable and necessary. In other words, controlling and regulating other legal service providers' use of technological elements to "overtake on the curve" and enter the "traditional" legal services market constitutes protection for lawyer groups violently impacted by

the technological era. This protection's value is intimately connected to the special significance of legal services for public interest and order.

6.2 Path Selection for Imposing Regulation

In constructing protective regulatory strategies, two paths exist: restraining technology development or restraining service providers.

1. **Regulatory Strategy of Restraining Technology Development** Restraining technology involves limiting the deployment of new technologies in the legal services field through legislation, policy, and other forms. For instance, after generative artificial intelligence was deployed as a disruptive productivity tool, it has formed real and urgent threats in areas such as cognition, liability, and tort.[22] Based on doubts about whether artificial intelligence can develop under human expected control, on March 22, 2023, the Future of Life Institute released an open letter titled "Pause Giant AI Experiments," calling for a pause in training AI systems more powerful than the representative generative AI technology ChatGPT-4.[23] We have reason to doubt whether these legal service providers, who lack specialized legal knowledge training, do not share common professional ethical concepts, and have limited understanding of the common values of the legal profession, can properly utilize these powerful technologies. In other words, whether the judicial system that maintains social fairness and justice and resolves disputes is prepared for large-scale technological impact also requires consideration.

However, the momentum of technological development is difficult to suppress. Blocking this disruptive force will entail exponentially high costs. Even if we manage to impose restrictions now, such limitations will eventually become unsustainable. If we fail to prepare for long-term, stable regulation, chaos and disorder will become inevitable when these restrictions are breached.[24] The strategy of restraining technological development is short-term and unsustainable.

2. **Regulatory Strategy of Restraining Service Providers** The power of new-generation artificial intelligence technology lies in its ability to perform reasoning, semantic analysis, and other functions, and to exhibit signs of making expressions with characteristics of legal declarations. This differs from traditional conclusions in the long history of AI development that were generated based on given algorithms and data without possessing frameworks for legal declaration behavior or inferential capacity. Through increased computing power, new-generation AI has acquired characteristics of quasi-AI expression, capable of producing results beyond given algorithmic presets—results that are "unknown," "random," "uncertain," and "non-unique." This exceeds the liability framework designed under traditional algorithmic "explainability."[25] AI technology that utilizes global data for analytical work diverges the single logical chain between technological algorithm "explainability" and result "trustworthi-

ness," making control over possible outcomes less stable.[26]

The European Union's October 2020 "Legislative Initiative on AI Ethics Principles" proposes that when AI commits torts or causes damage, it results from algorithmic decision-making errors after the algorithm has digested and absorbed data. Such errors may stem from information or decisions provided by the system, from training datasets, or from external interference or new media.[27] If the source or cause of errors cannot be determined, AI's opacity, scale effects, and unavoidable discrimination will bring different harmful consequences.[28] Therefore, only when technology is controlled and grasped through legal tools and policy means can its potential destructiveness or resistance be correspondingly mitigated. Uncontrollable technology needs to be controlled by rules, making technology "controllable" the greatest common denominator between technological development and scientific regulation.

First, utilize new technology tools to govern new technology—that is, technological autonomy—developing the approach of "governing artificial intelligence with artificial intelligence," requiring legal service providers to bear responsibility for self-governance and constraint. Second, regulate the domains where legal service providers utilize technology, such as prohibiting technology systems from collecting relevant information for data analysis in cases involving criminal matters, national security, or trade secrets. Third, solidify the foundation for bearing legal responsibility, such as exploring the allocation of a certain proportion of fees collected by legal service providers using new technologies into designated fund storage channels. If improper deployment of technology impacts or damages judicial activities or order, relevant competent authorities can extract corresponding amounts from this fund pool for compensation, using economic responsibility as a guarantee and support for introducing uncertainty-bearing technology into the legal services market. Judicial administrative departments and bar associations should actively coordinate with market supervision and management functional departments to achieve technological "controllability" of legal service providers and explore the establishment of behavioral rules such as legal technology ethics.

Conclusion

The decision to maintain or expand the boundaries of lawyers' professional competence obligations lies hidden in lawyers', legal service providers', and policymakers' understanding of technology and their imagination and expectations for technological development, and is also closely related to the development and changes in the legal services market. Adjustments and changes to lawyers' professional ethical rules will affect the development patterns of the legal profession, legal profession derivative occupations, the legal services market, and legal services-related markets.

Regardless of which decision or choice is ultimately adopted, the most important value to follow should be maintaining the dignity of the law and protecting client

interests. At the turning point of technological development and evolution, the maintenance and expansion of competence obligation boundaries will be a repeatedly pulling contradiction, cycling back and forth. Though the outcome is uncertain, we should believe that their interwoven transitions always unify in lawyers' always sincere professional sentiment and professional integrity toward clients.

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[1] See John Markoff, *Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots*, trans. Guo Xue (Zhejiang People's Publishing House, 2015), 6-19.

[2] Jamie J. Baker, "Beyond the Information Age: The Duty of Technology Competence in the Algorithmic Society," *South Carolina Law Review* 69 (2018): 557.

[3] Arizona, Arkansas, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, Wyoming, among others.

[4] Katy (Yin Yee) Ho, "Defining the Contours of an Ethical Duty of Technological Competence," *The Georgetown Journal of Legal Ethics* 30 (2017): 853.

[5] Drew Simshaw, "Ethical Issues in Robo-Lawyering: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of Law," *Hastings Law Journal* 70 (2018): 173.

[6] As stated in ABA Rule 1.1.

[7] Ray Worthy Campbell, "Artificial Intelligence in the Courtroom: The Delivery of Justice in the Age of Machine Learning," *Colorado Technology Law Journal* 18.2 (2020).

[8] Article 7: "Lawyers shall be honest and trustworthy, diligent and responsible, and safeguard the lawful rights and interests of clients based on facts and law, ensure correct implementation of law, and uphold social fairness and justice."

[9] Article 36: "Lawyers shall fully utilize their professional knowledge, complete entrusted matters in accordance with law and engagement agreements, and safeguard the lawful rights and interests of clients or parties."

[10] See ABA Rule 1.1.

[11] See "Beijing Lawyers' Practice Conduct Rules (Trial)."

[12] See learning and training platforms operated by local justice bureaus and bar associations.

[13] See Li Lun, *Data Ethics and Algorithmic Ethics* (Science Press, 2019), 85-86.

[14] Liu Yawen, "The Impact of Algorithms on the Judiciary and Responses," *Journal of Chongqing University of Technology (Social Science)* 7 (2022).

[15] See John Markoff, *Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots*, trans. Guo Xue (Zhejiang People's Publishing House, 2015), 6-19.

[16] Passed on June 20, 2018, at the 9th meeting of the 11th Guangdong Provincial Bar Association Council; revised on November 26, 2021, at the 21st meeting of the 11th Guangdong Provincial Bar Association Council.

[17] Gao Tongfei, "Upholding Judicial Responsibility Ethics in the Digital Age," *Law and Social Development* 1 (2022).

[18] Hu Ming and Song Lingshan, " 'Human + Intelligence': The Basic Logic of Judicial Intelligence Reform," *Zhejiang Academic Journal* 2 (2021).

[19] Li Fei, "Artificial Intelligence and Judicial Adjudication and Interpretation," *Science of Law (Journal of Northwest University of Political Science and Law)* 5 (2018).

[20] Liu Sida, *The Logic of Fragmentation: An Ecological Analysis of China's Legal Services Market* (Shanghai Sanlian Bookstore, 2011), 103.

[21] In contrast, other legal service providers have great autonomy in pricing, not only widely applying risk-based fee arrangements in areas where lawyers are strictly restricted from doing so, but also often engaging in low-price dumping as unfair competition to disrupt market order.

[22] Yu Guoming, "The ChatGPT Wave: Communication Revolution and Media Ecology Reconstruction," *Exploration and Free Views* 3 (2023).

[23] Future of Life Institute, "Pause Giant AI Experiments: An Open Letter," https://futureoflife.org/open-letter/pause-giant-ai-experiments/ (last visited Oct. 7, 2023).

[24] Mark L. Shope, "Lawyer and Judicial Competency in the Era of Artificial Intelligence: Ethical Requirements for Documenting Datasets and Machine Learning Models," *The Georgetown Journal of Legal Ethics* 34 (2021): 191.

[25] Tang Linyao, "Regulation Theory Construction and China's Approach to the 'Metaverse'," *Journal of Shanghai University (Social Sciences Edition)* 5 (2022).

[26] Guan Baoying, "On the Spirit of Administrative Law in the Era of Big Data," *Journal of Shanghai University of Political Science and Law* 1 (2023).

[27] Li Shigang and Bao Dingyurui, "New Directions for Regulating Large Digital Platforms: Specialization, Front-loading, and Dynamization—An Analysis of the EU's Digital Markets Act (Draft)," *Law Science Magazine* 9 (2021).

[28] Liu Yanhong, "Research on the Explainability of Artificial Intelligence and AI Legal Liability Issues," *Law and Social Development* 1 (2022).